MINUTES OF THE 122ND MEETING OF STATE LEVEL EXPERT APPRAISAL COMMITTEE (SEAC), JHARKHAND HELD ON 24TH, 25TH, 26TH, 27TH AND 28TH MARCH, 2025.

The 122nd meeting of State Level Expert Appraisal Committee (SEAC), Jharkhand was held on 24th, 25th, 26th, 27th and 28th March, 2025 under the Chairmanship of Shri Ashok Kumar Singh, IFS (Retd.) in the Conference Room at SEAC, Ranchi.

The following members were present:

1.	Shri Ashok Kumar Singh, IFS (Retd.)	- Chairman
2.	Shri Niranjan Lal Agarwalla	- Member
3.	Dr. Raju Kumar	- Member
4.	Shri Ashok Kumar Dubey, IFS (Retd.)	- Member (Present 25.03.2025 to 28.03.2025)
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 08th, 09th, 10th, 11th and 12th March, 2025. 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 : March 24th, 2025 [Monday]

A. **Transfer of EC from Adityapur Auto Cluster (AAC) to Adityapur Waste Management Private Limited (AWMPL) for the project "Inclusion of Common Biomedical Waste Treatment Facility in Common Hazardous Waste Management Facility" at Village : Dugni, Tehsil : Saraikela, Distt. : Saraikela-Kharsawan, Jharkhand. (Proposal no. SIA / JH / INFRA2/524015 /2025)**

After considering the documents submitted and presentation made by the Project Authority the Committee has required the following documents from PAs :-

i. NOC from Adityapur Auto Cluster in light of section 11 of EIA Notification, 2006, clearly stating that the current EC may be transferred in the name of Adityapur Waste Management Private Limited (AWMPL) and that compliance of all the conditions of EC shall be the responsibility of the AWMPL.

ii. Justification from Adityapur Auto Cluster for the delay initiating the EC transfer process.

iii. Certified Compliance Report of the conditions of previous EC being letter no. EC/SEIAA/2017-18/2064/2017/240, dated 22.12.2017 from IRO, MoEF&CC, Ranchi.

After receipt of the above documents the proposal will be taken up for consideration in light of OM no. IA3-22/19/2023-IA.III [E226246], dated 03.11.2023 and dated 19.02.2025.

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B. Consideration of proposals :

1. Establishment of Greenfield Plant for 10,00,000 TPA Pickling Line with other facilities such as HR Slitter, Cut to Length, Coil Preparation Line by M/s BMW Industries Limited at Plot no. IV/B-1 (P), Phase IV, Balidih Industrial Area, Bokaro Steel City, Jharkhand.

(Proposal no.: SIA/JH/IND1/ 527372 /2025)

Name of the consultant : Vardan Environet LLP, Haryana.

This is a new project which has been taken for appraisal on 24.03.2025.

Project Category : 3 (a) Metallurgical Industries (Ferrous & Non ferrous), Category : B 1 as per EIA Notification, 2006.

M/s BMW Industries Limited (BMWIL) has made ToR Application vide proposal no. SIA/JH/IND1/527372/2025dated 11.03.2025 along with Form – 1, copy of Pre-Feasibility Report for undertaking detailed study as per the EIA Notification, 2006 for the above mentioned project. The proposed project activity is listed as S.No. 3(a) Metallurgical Industry, under Category 'B' of the schedule of the EIA Notification, 2006.

The project M/s. BMW Industries Limited (BMWIL)is located at Plot No. IV/B-1 (P), Phase IV, Balidih Industrial Area, Bokaro Steel City – 827014, Jharkhand is for Establishment of Greenfield Plant for 10,00,000 TPA Pickling Line with other facilities such as HR Slitter, Cut-to-Length, Coil Preparation Line.

Environmental site settings:

Sl.No.	Particulars	Details	Remarks
1.	Total Land	1.95Ha (4.81 Acres)	Land Use: IndustrialLand
2.	Land acquisition details as per MoEF&CC O.M. dated 7/10/2014	Total area – 1.95 Ha	Located in notified industrial area

<table>
<tr><th>Sl.No.</th><th>Particulars</th><th>Details</th><th>Remarks</th></tr>
<tr><td>3.</td><td>Existence of habitation & involvement of R&R, if any</td><td>Project Site: Nil

Study Area:

<table><tr><th>Nearest Habitation</th><th>Distance</th><th>Direction</th></tr><tr><td>Gorabii Village</td><td>0.02km</td><td>SE</td></tr><tr><td>Balidih Village</td><td>1.31km</td><td>SSW</td></tr></table></td><td>R&R: Not Involved</td></tr>
<tr><td>4.</td><td>Latitude and longitude of all corners of the project site</td><td><table><tr><th>Sr. No.</th><th>Latitude</th><th>Longitude</th></tr><tr><td>1</td><td>23°41'32.68"N</td><td>86° 3'44.12"E</td></tr><tr><td>2</td><td>23°41'30.24"N</td><td>86° 3'43.47"E</td></tr><tr><td>3</td><td>23°41'26.83"N</td><td>86° 3'33.87"E</td></tr><tr><td>4</td><td>23°41'28.68"N</td><td>86° 3'33.17"E</td></tr></table></td><td></td></tr>
<tr><td>5.</td><td>Elevation of the project site</td><td>258meters above mean sea level</td><td></td></tr>
<tr><td>6.</td><td>Involvement of Forest Land, if any</td><td>No Involvement of Forest Land</td><td></td></tr>
<tr><td>7.</td><td>Water body (Rivers, Lakes, Pond, Nala, Natural Drainage, Canal etc.) exists within the project site as well as study area</td><td>Project Site:Nil

Study Area:

<table><tr><th>Water-body</th><th>Distance(Km)</th><th>Direction</th></tr><tr><td>KhanjoNadi</td><td>5.03</td><td>WNW</td></tr><tr><td>Garga Dam</td><td>5.33</td><td>South</td></tr><tr><td>Damodar River</td><td>5.8</td><td>NE</td></tr></table></td><td></td></tr>
<tr><td>8.</td><td>Existence of ESZ/ ESA/ national park/ wildlife sanctuary/ biosphere reserve/ tiger reserve/ elephant reserve etc. if any within the study area</td><td>Study area:
Noexistence of ESZ/ ESA/ national park/ wildlife sanctuary/ biosphere reserve/Reserve Forest/ tiger reserve/ elephant reserve etc. if any within the study area

List of Protected Forest
There is no reserved forest within the 10km study</td><td></td></tr>
</table>

Sl.No.	Particulars	Details	Remarks
		area. However, there is few protected forest within the 10km study area. ➢ Mahlidih PF is at 6.78 km in NE direction. ➢ Bhandaridah PF is at 7.62 km in NNE Direction. ➢ Chirudih PF is at 7.82 km in NNE Direction	

Land Details :

Khata no.	Plot no.
8	388 (P)
121	387 (P), 392(P), 393(F)
183	394 (P), 395 (P)
188	397(P)
24	390(P)
177	551(P), 561(P),578(P), 595(P), 597(P), 912(P)
112	552(P), 553 (P), 560(P), 562 (P)
111	554(P), 575(P), 573(P)
18	577(P), 579(P)
128	596(P), 593(P)
92	913(P)

STATUTORY CLEARANCES :

1	LOI/Lease docs	:	Land allotted on lease by BIADA, Bokaro Steel City.
2	CO	:	The CO, Chas (Bokaro) vide letter no. 1181, dated 25.05.2024 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatiyan & Register II.
3	DFO Wild Life	:	DFO, Wildlife Hazaribagh vide letter no. 904, dated 17.05.2024 certified that the proposed project site is outside Eco Sensitive

			Zone of Parasnath & Topchanchi Wildlife Sanctuary.
4	DFO Territorial	:	DFO, Bokaro Forest Division vide letter no. 1081, dated 30.05.2024 certified that the distance of notified forest is **260 meters** from project site.

The unit configuration and capacity of existing and proposed project is given as below:

Sl. No	Plant	Configuration	Capacity (TPA)
1.	Pickling Line along with other facilities such as HR Slitter, Cut-to-Length, Coil Preparation Line	1x 1MTPA	1.0 MTPA Hot Rolled Pickled/Hot Rolled Pickled & Oiled Coil/Sheet
2.	Acid Regeneration Plant	1 x 2000 LPH	2,04,00,000 LPA Recovered acid (Recirculated in process)

The details of the raw material requirement for the proposed project along with its source and mode of transportation are given as below:

Sl. No.	Item	Requirement in TPA	Source	Distance & Mode of Transport
1.	HR Coils	10,09,000	Bokaro/Tata/Angul/ JSW / AMNS, Imported (Kolkata/Haldia Port)	180 to 250 km By Road
Other Chemicals				
2.	Hydrochloric Acid (32%)	7200	Local Market	Within 10kms
3.	Inhibitor	18	Local Market	Within 10kms

The total water requirement will be 65 KLD. The required water will be sourced from JIADA. Unit has applied for permission from the Jharkhand Industrial Area Development Authority, JIADA Bhawan, Bokaro dated 07.02.2025. In case supply water is not available ground water will be used with due permission from CGWA. Zero Liquid Discharge 'ZLD' shall be maintained.

Total requirement of power for proposed project is 1.5 MW. Power requirement will be sourced from Damodar Valley Corporation (DVC). For emergency power requirement 1x1200 KVA DG Set has been proposed to be installed under the present proposal.

Estimated cost for the proposed project is Rs. 85.00 Crores. Employment generation after proposed project will be 50 direct employments and approx. 100 indirect employments.

This project will be installed in area of 1.95 ha (4.81 Acres). No forestland is involved. Out of the total area, 0.66ha (33.3%) will be developed as green belt.

Name of the EIA consultant: M/s Vardan Environet LLP [S.No. 37 in List of ACOs, Certificate no. NABET/EIA/2326/RA 0284-Rev.01, valid up to 04.05.2026].

Proposed Terms of Reference Baseline data collection period: 1st December 2024 to 28th February 2025 as below:

Attributes	Parameters	Sampling		Remarks
		No. of stations	Frequency	
A. Air				
a. Meteorological parameters	Temp., Relative Humidity, Wind Speed, Wind Direction, Rainfall	1 Location	Hourly sampling for three months	Secondary data from IMD, NewDelhi for the nearest IMD station
b. AAQ parameters	PM10, PM2.5, SO2, NOx, CO	8 Locations	24-hourly sampling, twice a week for 12 weeks	Monitoring Network: 1 location in nearby habitation, 2 locations in upwind , 2 location in downwind, 2 in Crosswind and 1 project Site (Covering all sensitive receptors also)
B. Noise	Leq (Day & Night), Lmax (Day & Night), Lmin (Day & Night)	8 Locations	24-hourly sampling, twice in a week (working and non-working day) for 3 months	Monitoring Network: 1 at the project site, 7 in the nearby villages (All the sensitive receptors covered)
C. Water				
a. Surface water quality parameters	pH, EC, NO3, Na, K, Fe, Al, Ca, Cl, Cr, Mg, TDS, TSS, DO, SO4, F, BOD, COD, Zn, Cu, Mn, Cd, Turbidity, Odour	8 Locations	Once in a day in each month for one season	Sampling from Garga Dam, Damodar River, Kanjo River, and 5 from Village Ponds
b. Ground water quality parameters	pH, Ca, Cl, Mg, TDS, SO4, F, NO3, Fe, Al, Zn, Cu, Mn, Cd, Pb, Hg, EC,	8 Locations	Once in a day in each month for one season	One grab sample per location

Attributes	Parameters	Sampling		Remarks
		No. of stations	Frequency	
	Turbidity, Odour			
D. Land				
a. Soil quality	pH, Conductivity, Soil Texture, Water Holding Capacity, Cl, Ca, Na, K, Organic matter, Mg, N, Zn, Mn, Phosphorus, Pb, Cd, Cr, Cu.	8 Locations	Once in a day in each month for one season	One sample from project site and one from Agriculture land, forest area, near water body and nearby villages.
E. Biological				
a. Aquatic	Species of Plants and Avifauna	10 km Radius study area	one season	Secondary data has been collected from Government offices, NGOs, published literature
b. Terrestrial	Species of Plants and Animals	10 km Radius study area	one season	Secondary data has been collected from Government offices, NGOs, published literature
F. Socio-economic parameters	Demographic details and Occupational details	10 km Radius study area	One Season	Secondary data from census records, statistical hard books, Topo sheets, health records and relevant official records available with Govt. agencies.

It has been informed by the project proponent that no court case, litigation or show cause is pending against the unit.

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 24, 25, 26, 27 & 28.03.2025, the Committee recommends for issuing of ToR to SEIAA

for undertaking detailed EIA / EMP study as mentioned in Annexure I alongwith following specific condition :-

I. Complete material balance to be provided for all the input & output.

II. Detailed water balance to be provided.

III. Details of all the waste generation in the project along with handling and management of the same.

IV. Primary study to be carried out for Socio Economy, Ecology & Bio-Diversity.

V. Details of all the pollution control measures including ETP & STP, if any.

VI. Details of fire control management plan.

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2. **Inclusion of 2x5 TPH Slag Crusher Unit for Production of 19,800 TPA Crushed Slag in the existing Plant by M/s Lall Steel Pvt. Ltd., Village : Mahtodih, P.S. : Mahtodih, P.O. : Udnabad, Distt. : Giridih, Jharkhand.**

(Proposal no.: SIA/JH/IND1/ 527097 /2025)

Name of the consultant : Vardan Environet LLP, Haryana.

This is an amendment project which has been taken for appraisal on 24.03.2025.

The Project Authority has applied for amendment of EC letter no. EC/SEIAA/2022-23/2674/2022/345, dated 29.12.2022 by Inclusion of 2x5 TPH Slag Crusher Unit for Production of 19,800 TPA Crushed Slag in the existing Plant.

Based on the presentation made and information provided, the Committee decided that the proposal for Inclusion of 2x5 TPH Slag Crusher Unit for Production of 19,800 TPA Crushed Slag in the existing Plant by M/s Lall Steel Pvt. Ltd., Village : Mahtodih, P.S. : Mahtodih, P.O. : Udnabad, Distt. : Giridih, Jharkhand is recommended for grant of amended EC and all terms & conditions of EC letter no. EC/SEIAA/2022-23/2674/2022/345, dated 29.12.2022 shall remain the same 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). 10% of the total green belt proposed shall be allocated under this clause.

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3. **Chikor Stone Mine of Shri Parmeshwar Prasad, Village : Chikor, Thana & Tehsil : Khunti, Distt. : Khunti, Jharkhand (1.660 Ha).**

(Proposal no.: SIA/JH/MIN/ 511880 /2025)

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

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

Application for Environmental Clearance (EC) (re-appraisal of Environment Clearance issued by DEIAA, Khunti).

The project has been granted EC by DEIAA, Khunti vide letter no. EC/DEIAA/ 2017-18/ 52, dated 21.08.2017.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Khunti which has been taken up for consideration on 24.03.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per letter no. 759/M dated 02.09.2024 by DMO, Khunti is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide memo no. 817, dated 11.07.2024.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.

ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.

The self certified compliance report has been submitted and also presented before the Committee.

EC Application for: Proposed Capacity – 249.9 Tonnes/Day

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Chikor Stone Mine	
2	Lessee:	:	M/s Parmeshwar Prasad	
3	Lessee Address	:	Village – Chikor, P.O – Bhandra, P.S – Khunti, District – Khunti, Jharkhand	
4	Lease Area	:	1.660 Ha	Acres- 4.09 Acre
5	Type of Land	:	Non-Forest Raiyati Land	
6	Project Cost	:	Capital: 9.752 Lakhs	Recurring: 47.65 lakhs / year
7	EMP Budget	:	Capital: 2.752 Lakhs	Recurring: 5.42 lakhs / year
8	New or Expansion	:	Re-appraisal of DEIAA EC.	
9	Mineable Reserves	:	Cum: -	Tonnes: 657871 tonnes
10	Mine Life	:	Upto the lease period i.e. 19.09.2017 to 18.09.2027.	
11	Man power	:	15	
12	Water Requirement	:	8.44 KLD (Drinking: 0.6 KLD, Industrial: 4.672 KLD, Plantation: 3.168 KLD)	
13	Water Source	:	By authorised hired water tankers	
14	DG Set / power	:	-	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Kanchi river is situated at a distance of 2.8 km in Eastern direction.	
17	Nearest Habitation	:	Chikor, at a distance of 1.5 Km in East direction.	
18	Nearest Rail Station	:	Bingaon Railway station, approx. 14 km towards East direction.	
19	Nearest Air Port	:	Birsa Munda Airport, Ranchi at a distance of 100 km North East - direction.	
20	Nearest Forest	:	None	
21	Road & Highways	:	NH-20, Ranchi-Khunti Road at a distance of 1.5 km in Western	

			direction.

CO-ORDINATES

Latitude	N23°07'00.70" to N23°07'06.20"
Longitude	E85°17'35.9" to 85°17'43.70"

LAND DETAILS

Khata no.	Plot no.
173	480, 482, 483, 484 & 486 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	i. The Letter of Intent (LoI) has been issued by AMO, Khunti vide letter no. 640/M, dated 01.12.2016. ii. Lease deed : 19.09.2017 to 18.09.2027.
2	CO	:	The CO, Sadar, Khunti vide letter no. 904, dated 15.10.2024 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. 763/M, dated 02.09.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Ranchi vide letter no. 786, dated 20.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Khunti Forest Division vide letter no. 1829, dated 16.11.2016 certified that the distance of forest land is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Khunti District (Sl. no. 12, Page no. 32).
7	Gram Sabha	:	Gram Sabha conducted on 26.07.2016.
8	Mining Scheme / Mine Plan Approval	:	Mining scheme approved by DMO, Khunti vide memo no. 11/Mining, dated 04.01.2025.

9	Previous EC	:	Previous EC granted by DEIAA, Khunti vide letter no. EC/DEIAA/ 2017-18/ 52, dated 21.08.2017.
10	Compliance report of EC	:	EC compliance report issued by JSPCB, Regional Office, Dhurwa vide memo no. 817, dated 11.07.2024.
11	Production Report	:	Production report issued by DMO, Khunti vide letter no. 32/M dated 13.01.2025.
12	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-1964730 /2018 /387, dated 17.04.2018.
13	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. JSPCB/RO/RNC/CTO-12481854 /2022/62, dated 26.02.2022 valid upto 31.03.2027.
14	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mining scheme has been prepared by him.

Working Details

1	Mining Method	:	Opencast other than fully mechanized (OTFM) Method	
2	Quarry Area	:	1.660 Ha / 4.09 Acres	Life of Mine – Upto the lease period i.e. 19.09.2017 to 18.09.2027.
3	Waste Generation	:	12197 cum	
4	Stripping Ratio	:	1:0.15	
5	Working Days	:	300	
6	Benches: size & No	:	6m to 6m	
7	Elevation of Mine	:	607 m AMSL to 582 m AMSL	
8	Ground Level Elevation	:	607 m AMSL to 599 m AMSL	
9	Ultimate Working Depth	:	570 m AMSL	
10	Water Table	:	560 meter below the ground level.	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	15 kg/day	
13	Diesel/Fuel requirement	:	121 litre/day	

Production Details

Year	Production of Stone in Cum	Production of Stone in Tonnes	Overburden in cum	Intercalated waste in cum	Total Waste in cum
2024-25	9238	24942	5824	486	6310

2025-26	27763	74960	2288	1461	3749
2026-27	*27713*	*74826*	*0*	1459	1459
2027-28 upto 18.09.2027	12893	34812	0	679	679
Total	**77607**	**209540**	**8112**	**4085**	**12197**

Land Use

Land Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	At Conceptual period (Ha)
Excavation	0.544	0.795 Ha (0.053 Ha area shall be backfilled, 0.111 Ha area shall be left as water reservoir and 0.631 Ha left as dead benches)	0.795 (0.053 Ha area shall be backfilled, 0.111 Ha area shall be left as water reservoir and 0.631 Ha left as dead benches).
Waste Dump	0.00	0.00	0.00
Road	0.033	0.012	0.012
Infrastructure (Crusher)	0.00	Nil	Nil
Safety Zone Barrier	0.355	0.355	0.355
Total	0.932	1.660	1.660
Unused Area	0.728	0.498	0.498
Total Lease Area	1.660		

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	568	3550	0.355	Gulmohar, Gular, Sagwan, Sakua <u>Fruit Bearing Trees</u> Mango, Jackfruit, Guava
	Haul Road	3 x 3	160	1000	0.1	
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			728	4550	0.455	

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

Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST			
S.NO.	**Mitigative measures to protect Environment**	**Capital Cost (in Lakh)**	**Recurring cost (In Lakh)**
01.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine)	0	2.26
02.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @ No. of plants 728 x 300Rs.	3.64	0.36
03	Garland Drain and Desiltation pond	1.46	0.146
04.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	00	0.50
TOTAL		**5.10**	**3.272**

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

During first, second and third year gritty soil & intercalated waste will be removed (4206 m^3) this soil and waste will be temporarily backfill within the exhausted quarry and in removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

Water Quality Management

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

Air Quality Management

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

Mitigation measures:

Use of Sharp Drill Bits

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

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

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

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

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

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on 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.

Organizational Structure:

Introduction

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

Our company is committed to:

- Minimizing environmental harm through responsible mining practices

- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

EMP Cell Objectives

The EMP Cell objectives are:

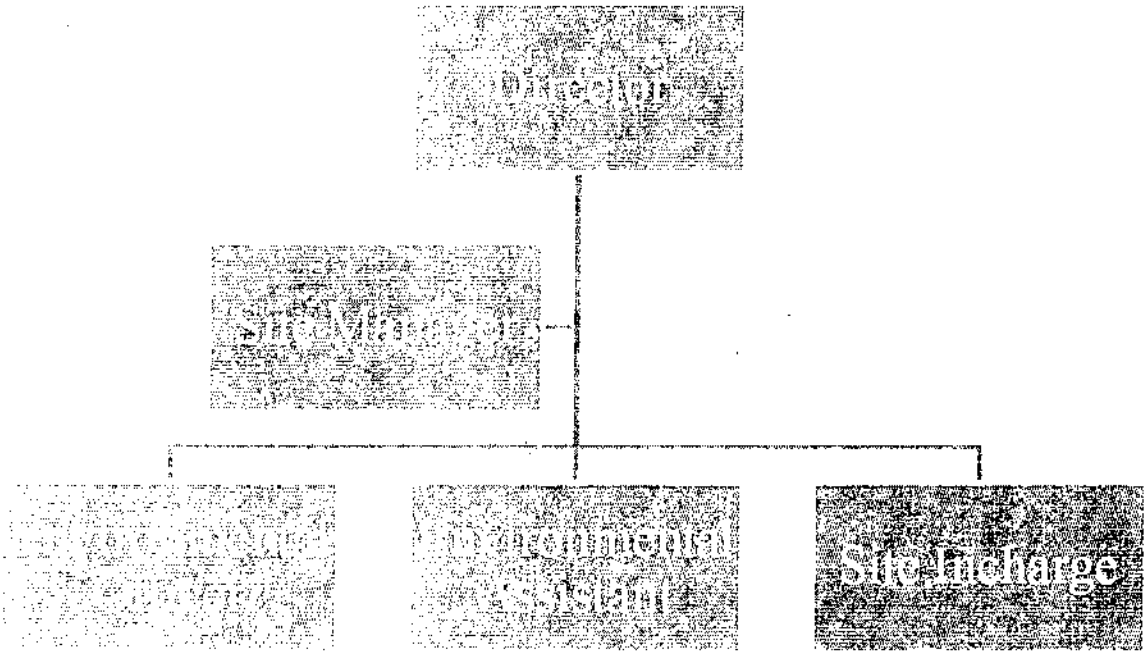
- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

EMP Cell Structure

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection

Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks



EMP Cell structure

Roles and Responsibilities

Environmental Officer (EO)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards

- Prepare quarterly reports

Environmental Assistant (EA)

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EMP manual
- Monitoring records
- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

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 Chikor Stone Mine of Shri Parmeshwar Prasad, Village : Chikor, Thana & Tehsil : Khunti, Distt. : Khunti, Jharkhand (1.660 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. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.

II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*Ek Ped Ma Ke Naam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged

photographs.

IX. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

X. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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4. **Chuwa Stone Deposit of M/s Sankat Mochan Stone Mines (Partner : Shri Pankaj Kumar Yadav), Village : Chuwa, Tehsil : Mandro, Distt. : Sahibganj, Jharkhand (3.640 Ha).**

(Proposal no.: SIA/JH/MIN/ 530227 /2025)

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

Application for Environmental Clearance (EC) (re-appraisal of Environment Clearance issued by DEIAA, Sahibganj).

The project has been granted EC by DEIAA, Sahibganj vide letter no. EC/DEIAA/2016-17/109, dated 16.03.2018.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Sahibganj which has been taken up for consideration on 24.03.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 632/M, dated 15.07.2024 by DMO, Sahibganj is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide Ref. No. 1709, dated 29.08.2024.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.

The self certified compliance report has been submitted and also presented before the Committee.

EC Application for: Proposed Capacity – 836 Tonnes/Day or 250633.85 Tonnes/Annum

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	CHUWA STONE MINE	
2	Lessee:	:	M/s SankatMochan Stone Mines Partner : Pankaj Kumar Yadav, Rajesh Kumar Jaiswal & Rajat Kumar Viswas	
3	Lessee Address	:	Mahadevwaran, P.O. + P.S. Mirzachuki, Sahebganj (Jharkhand).	
4	Lease Area	:	3.64 Ha.	9.00 Acres
5	Type of Land	:	Raiyat	
6	Project Cost	:	Capital : Rs. 1149500.00	Recurring : Rs. 11288900.00
7	EMP Budget	:	Capital : Rs. 449500.00	Recurring : Rs. 756150.00
8	New or Expansion	:	New (Re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	1225859.67 Tonnes	4,54,022.1 Cum
10	Mine Life	:	Upto the lease period i.e. 25.02.2019 to 24.02.2029.	
11	Man power	:	28	
12	Water Requirement	:	18.59 KLD	
13	Water Source	:	Authorized Hired Water Tanker	
14	DG Set / power	:	NA	
15	Crusher	:	NA	
16	Nearest Water Body	:	Ganga River (7.00 Km)	
17	Nearest Habitation	:	Sahebganj (7.50 km)	
18	Nearest Rail Station	:	Mirzachouki Railway Station (5 Km)	
19	Nearest Air Port	:	Deoghar Airport (121 Km)	
20	Nearest Forest	:	Nearest Forest is situated at distance of 260m as per DFO	

		:	Sahebganj Certificate.
21	Road & Highways	:	NH-80 Sahibganj – Bhagalpur Road (11 Km)

CO-ORDINATES

Latitude	25°12'45.6897" N to 25°12'54.3494" N
Longitude	87°34'12.0038" E to 87°34'19.5914" E

LAND DETAILS

Khata no.	Plot no.
09	19 (P)
04	35/70 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed 25.02.2019 to 24.02.2029.
2	CO	:	The CO, Mandro vide memo no. 430/Ra., dated 22.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster and Grid certificate	:	DMO, Sahibganj vide memo no. 372/M, dated 27.02.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site and also certified that the proposed project site is outside of Redzone Grid 1, 3, 4 & 7.
4	DFO Wild Life	:	DFO –cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 744, dated 18.03.2025 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Forest Distance	:	Divisional Forest Officer, Sahibganj Forest Division vide memo no. 1859, dated 26.09.2017 certified that the distance of forest land is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Sahibganj District (Sl. No. 05, Page no. 128).
7	Gram Sabha	:	Gram Sabha conducted on 10.08.2017.
8	Scheme / Mine Plan Approval	:	i. Mining plan approved by DDM, Santhal Pargana Circle, Dumka vide letter no. 481/DDM, dated 03.11.2017. ii. Mining scheme approved by DMO, Sahibganj vide letter

			no. 139, dated 06.02.2024.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Sahibganj vide letter no. EC/DEIAA/2016-17/109, dated 16.03.2018.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide Ref. No. 1709, dated 29.08.2024.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-7347201 /2020/156, dated 19.03.2020.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/RO/DMK/CTO-8006515 /2020/44, dated 22.05.2020 valid upto 31.03.2025..
13	Production Report	:	Production report issued by DMO, Sahibganj vide memo no. 632/M, dated 15.07.2024.
14	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mining scheme has been prepared by him.

Working Details

1	Mining Method	:	Opencast other than fully mechanized (OTFM) Method	
2	Quarry Area	:	3.399	Life of Mine – Upto the lease period i.e. 25.02.2019 to 24.02.2029.
3	Waste Generation	:	59942.20 Cum	
4	Stripping Ratio	:	1:0.04	
5	Working Days	:	300	
6	Benches: size & No	:	3m to 3m	
7	Elevation of Mine	:	143m AMSL to 176m AMSL	
8	Ground Level Elevation	:	143m AMSL	
9	Ultimate Working Depth	:	138m AMSL	
10	Water Table	:	100m AMSL	
11	Topography of Mine	:	Area represents sloping land.	
12	Explosive Requirement	:	83.6 Kg Per Day	
13	Diesel/Fuel requirement	:	501.6 Litre Per Day	

Production Details

Year	Production of Stone in Tonnes	Overburden in Cum	Intercalated Waste in Cum	Total Waste in Cum
6th	250615.89	0	4885.30	4885.30
7th	250279.88	17820.00	4875.75	22698.75
8th	250125.98	18216.00	4875.75	23091.75
9th	***250633.85***	***0***	***4885.65***	***4885.65***
10th	224732.48	0	4380.75	4380.75
Total	**1226388.06**	**36036.00**	**23906.20**	**59942.20**

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	Conceptual Plan (Ha.)
Quarry	2.339	3.399	0.351 Ha. area shall be backfilled & 1.952 Ha. area shall be left as water reservoir
Waste Dump	0.000	0.000	0.000
Road	0.000	0.000	0.000
Infrastructure (Crusher)	0.000	0.000	0.000
Safety Zone	0.241	0.241	0.241(Greenbelt)
Total	**2.580**	**3.640**	**3.640**
Unused Area	**1.060**	**0.000**	**0.000**
Total Applied Area	**3.640**	**3.640**	**3.640**

ENVIRONMENT MANAGEMENT

Green Belt Development

Safety Zone (Ha.)	Approach Road (m)	Total number of tree @ 1600 tree per Hectare	Actual Existing tree on site	Proposed to be done within 6 months
0.241	100	485	200	285

- 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

BUDGETARY PROVISION FOR ENVIRONMENT MANAGEMENT PLAN (EMP)		
285 Tree Plantation @Rs.300 per Tree for planting & @Rs.50 per tree for maintenance	85500	14250
Water Tanker @Rs. 500 per Tanker for Dust Suppression (2.91KLD) & Horticulture (14.56KLD) 2.91KLD + 14.56KLD = 17.47 KLD 17.47 KLD X 300 Days = 5241 KL 5241 KLD / 4 KLD = 1311 Tankers	0	655500
Garland Drain & Parapet wall	364000	36400
Environment Monitoring & Compliance	0	50000
Total	**449500**	**756150**

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	2 station	Six Monthly

	testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.		

Solid Waste Management

During first, second and third year gritty soil & intercalated waste will be removed, this soil and waste will be temporarily backfill within the exhausted quarry and in fourth year removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

Water Quality Management

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

Air Quality Management

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

Mitigation measures:

Use of Sharp Drill Bits

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

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

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

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

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

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on 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.

Organizational Structure:

Introduction

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

Our company is committed to:

- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

EMP Cell Objectives

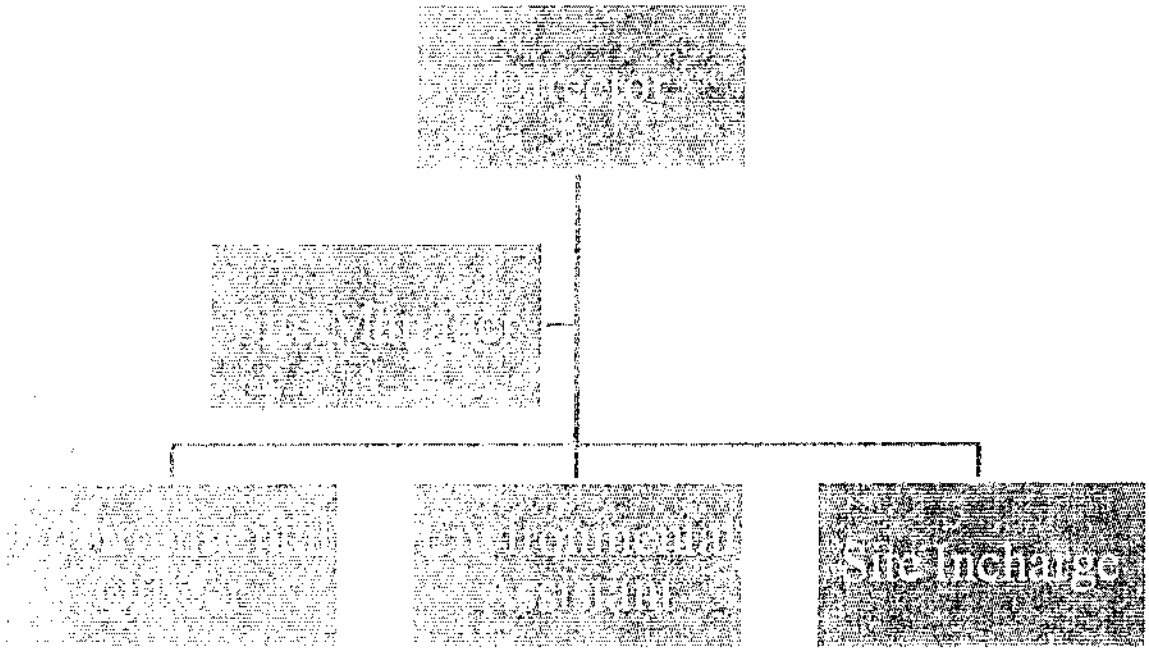
The EMP Cell objectives are:

- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

EMP Cell Structure

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks



EMP Cell structure

Roles and Responsibilities

Environmental Officer (EO)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

Environmental Assistant (EA)

- Conduct field monitoring
- Collect and record environmental data

- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EMP manual
- Monitoring records
- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

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 Chuwa Stone Deposit of M/s Sankat Mochan Stone Mines (Partner : Shri Pankaj Kumar Yadav), Village : Chuwa, Tehsil : Mandro, Distt. : Sahibganj, Jharkhand (3.640 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. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.

II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"Ek Ped Ma Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be

maintained and submitted with 6 monthly compliance report.

IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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5. **Fathepur & Dhatapara Stone Deposit of M/s Shree Guru Stone Works (Prop. : Shri Amarjit Singh), Village : Fathepur & Dhatapara, Tehsil : Barharwa, Distt. : Sahibganj, Jharkhand (4.28 Ha).**

(Proposal no.: SIA/JH/MIN/ 527356 /2025)

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

Application for Terms of Reference (ToR) (re-appraisal of Environment Clearance issued by DEIAA, Sahibganj).

The project has been granted EC by DEIAA, Sahibganj vide letter no. EC/DEIAA/2017-18/99, dated 06.03.2018.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Sahibganj which has been taken up for consideration on 24.03.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B1.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 1321/M, dated 30.12.2023 and memo no. 465/M, dated 18.03.2025 by DMO, Sahibganj is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide Ref. No. 1972, dated 24.10.2024.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.

The self certified compliance report has been submitted and also presented before the Committee.

EC Application for: Proposed Capacity – 604 Tonnes/Day or 181198.90 Tonnes/Annum
Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	FATHEPUR & DHATAPARA STONE MINE	
2	Lessee:	:	M/s Shree Guru Stone Works Proprietor : Sri Amarjit Singh	
3	Lessee Address	:	Malgodam Road, P.O. + P.S. : Pakur, Pakur, Jharkhand	
4	Lease Area	:	4.28 Ha.	10.57 Acres
5	Type of Land	:	Raiyat	
6	Project Cost	:	Capital : Rs. 16,50,000.00	Recurring : Rs. 1,27,14,532.84
7	EMP Budget	:	Capital : Rs. 9,50,000.00	Recurring : Rs. 12,58,300.00
8	New or Expansion	:	New (Re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	19,44,608.00 Tonnes	7,20,225.18 Cum
10	Mine Life	:	Upto the lease period i.e. 25.01.2019 to 24.01.2029.	
11	Man power	:	41	
12	Water Requirement	:	30.40 KLD	
13	Water Source	:	Authorized Hired Water Tanker	
14	DG Set / power	:	NA	
15	Crusher	:	NA	
16	Nearest Water Body	:	Ganga River (13.69 KM)	
17	Nearest Habitation	:	Patharia (1.23 Km)	
18	Nearest Rail Station	:	Kotalpur Railway Station (3.45 Km)	
19	Nearest Air Port	:	Deoghar Airport (115 Km)	
20	Nearest Forest	:	Chhota Beergaon (6.50 Km)	
21	Road & Highways	:	NH 133 (6.00 Km)	

CO-ORDINATES

25°12'45.6897" N to 25°12'54.3494" N
87°34'12.0038" E to 87°34'19.5914" E

LAND DETAILS

Khata no.	Plot no.
14	541 (P)
01	621 & 622
62	623 (P)
13	624 (P)
78	625 (P)
80	626 (P)
17	631

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed 25.01.2019 to 24.01.2029.
2	CO	:	The CO, Barharwa (Sahibganj) vide memo no. 49/Ra., dated 27.01.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster	:	DMO, Sahibganj vide memo no. 535/M, dated 21.03.2025 certified that 02 other mining lease area (7.07 Acre & 8.12 Acre) exists within 500 meters radius from proposed project site and total area is 25.76 Acre.
4	DFO Wild Life	:	DFO –cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1208, dated 19.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide memo no. 1397, dated 07.10.2016 certified that the distance of forest land is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Sahibganj District (Sl. No. 103, Page no. 140).
7	Gram Sabha	:	Gram Sabha conducted on 08.03.2017.
8	Scheme / Mine	:	i. Mining plan approved by DDM, Santhal Pargana Circle,

	Plan Approval		Dumka vide memo no. 344/DDM, dated 31.07.2017. ii. Mining scheme approved by Additional Director, Geology, Hazaribag vide memo no. 58/G, dated 18.02.2022.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Sahibganj vide letter no. EC/DEIAA/2017-18/99, dated 06.03.2018.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide Ref. No. 1972, dated 24.10.2024.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-4887488 /2019/389, dated 27.06.2019.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/RO/DMK/CTO-18909567 /2024/119, dated 24.04.2024.
13	Production Report	:	Production report issued by DMO, Sahibganj vide memo no. 1321/M, dated 30.12.2023 and memo no. 465/M, dated 18.03.2025.
14	Grid certificate		DMO, Sahibganj vide memo no. 464/M, dated 18.03.2025 certified that the proposed project site is outside of Redzone Grid 1, 3, 4 & 7.
15	Qualified Person	:	Shri Tapan Kumar Chakravarty through e-mail dated 24.03.2025 affirmed that the mining scheme has been prepared by him.

Working Details

1	Mining Method	:	Opencast other than fully mechanized (OTFM) Method	
2	Quarry Area	:	3.12 Ha.	Life of Mine – Upto the lease period i.e. 25.01.2019 to 24.01.2029.
3	Waste Generation	:	5433.25 Cum	
4	Stripping Ratio	:	1: 0.02	
5	Working Days	:	300	
6	Benches: size & No	:	3m to 3m	
7	Elevation of Mine	:	47m AMSL to 54m AMSL	
8	Ground Level Elevation	:	46m AMSL	
9	Ultimate Working Depth	:	36.45m AMSL	
10	Water Table	:	32m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	

12	Explosive Requirement	:	83.6 Kg Per Day
13	Diesel/Fuel requirement	:	501.6 Litre Per Day

Production Details

Year	Production of Stone in Tonnes	Overburden in Cum	Intercalated Waste in Cum	Total Waste in Cum
6th	181122.40	5433.25	0	5433.25
7th	181045.90	0	0	0
8th	181198.80	0	0	0
9th	181122.40	0	0	0
10th	***181198.90***	***0***	***0***	***0***
Total	**905688.50**	**5433.25**	**0**	**5433.25**

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	Conceptual Plan (Ha.)
Quarry	1.65	2.50	3.12
Road	0.30	0.20	0.01
Greenbelt	0.00	1.15	1.15
Dump	0.00	0.22	0.00
Retaining Wall	0.00	0.01	0.00
Garland Drain & Sump	0.00	0.03	0.00
Total	**1.95**	**4.11**	**4.28**
Unused Area	**2.33**	**0.17**	**0.00**
Total Applied Area	**4.28**	**4.28**	**4.28**

ENVIRONMENT MANAGEMENT

Green Belt Development

Safety Zone (Ha.)	Approach Road (m)	Total number of tree @ 1600 tree per Hectare	Actual Existing tree on site	Proposed to be done within 6 months
1.15	100	1940	200	1740

- 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

BUDGETARY PROVISION FOR ENVIRONMENT MANAGEMENT PLAN (EMP)		
Particulars	**Capital (INR)**	**Recurring (INR/Year)**
1740 Tree Plantation @Rs.300 per Tree for planting & @Rs.50 per tree for maintenance	5,22,000.00	87,000.00
Water Tanker @Rs. 500 per Tanker for Dust Suppression (17.12 KLD) & Horticulture (11.64 KLD) 17.12 + 11.64 = 28.76 KLD 28.76 KLD X 300 Days = 8628 KL 8628 / 4 KL = 2157 Tankers	0.00	10,78,500.00
Garland Drain & Parapet wall	4,28,000.00	42,800.00
Environment Monitoring & Compliance	0.00	50,000.00
Total	**9,50,000.00**	**12,58,300.00**

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

During first, second and third year gritty soil & intercalated waste will be removed, this soil and waste will be temporarily backfill within the exhausted quarry and in fourth year removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

Water Quality Management

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

Air Quality Management

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

Mitigation measures:

Use of Sharp Drill Bits

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

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

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

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

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

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on 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.

Organizational Structure:

Introduction

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

Our company is committed to:

- Minimizing environmental harm through responsible mining practices

- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

EMP Cell Objectives

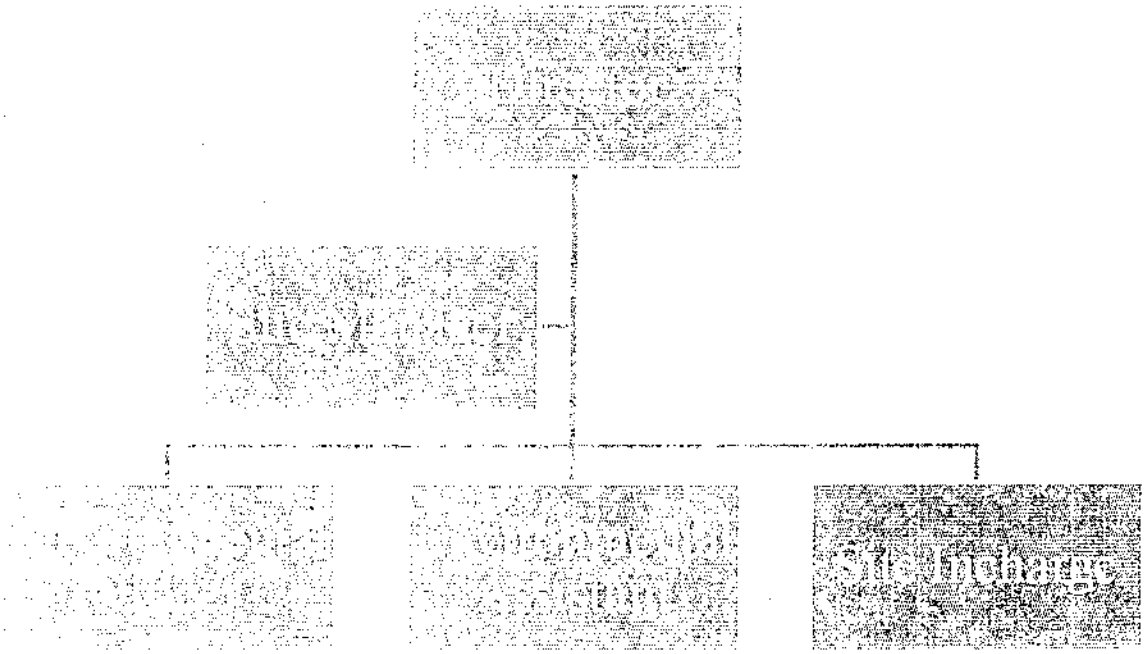
The EMP Cell objectives are:

- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

EMP Cell Structure

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks



EMP Cell structure

Roles and Responsibilities

Environmental Officer (EO)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards

- Prepare quarterly reports

Environmental Assistant (EA)

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EMP manual
- Monitoring records
- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

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 24, 25, 26, 27 & 28.03.2025, 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. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.
II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"Ek Ped Ma Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.
III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

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6. Piska Stone Deposit of M/s Silver Stone (Partner : Shri Manoj Kumar Singhania), Village : Piska, Tehsil : Ormanjhi, Distt. : Ranchi, Jharkhand (0.493 Ha).

(Proposal no.: SIA/JH/MIN/ 530009 /2025)

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

This is a new project which has been taken for appraisal on 24.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for : Boulder Stone: 15310 Cu.M./ Year i.e. 41,338 TPA

PROJECT AND LOCATION DETAILS:

Sl. No.	Parameter		Details	
1	Project Name	:	Piska Stone Mine	
2	Lessee:	:	M/s Silver Stone, (Partner: Sri Manoj Kumar Singhania)	
3	Lease Address	:	Mouza – Piska, Thana – Ormanjhi, District – Ranchi, State – Jharkhand.	
4	Lease Area	:	Ha: 0.493 ha.	Acres: 1.22 Ac.
5	Type of Land	:	Non Forest – Rayati Land	
6	Project Cost	:	80.00 Lakhs	
7	EMP Budget	:	Capital: 7.50 Lakhs	Recurring: 3.50 Lakh / year
8	CSR / CER Budget	:	NA	
9	New or Expansion	:	New Project	
10	Mineable Reserves	:	Cu. M.: 64,632	Tonnes: 1,74,507 Tonnes
11	Mine Life	:	05 years	
12	Man power	:	15	
13	Water Requirement	:	08.00 KLD (Drinking: 1.00 KLD, Dust Suppression: 6.00 KLD, Plantation: 1.00 KLD)	
14	Water Source	:	Dug well for drinking & Village pond/ Closed mine/ River water for dust suppression/ green belt	
15	DG Set / power	:	Not required	
16	Crusher	:	Not within mine lease area	
17	Nearest Water Body	:	Getalsud Dam 8 KM/ Swarnrekha River – 12 km.	
18	Nearest Habitation	:	Manatu Village: 2.00 KM; Ormanjhi: 08 KM	
19	Nearest Rail Station	:	BIT - 18 KM	
20	Nearest Air Port	:	Ranchi - 32 KM	
21	Nearest Forest	:	Not within 250m	
22	Road & Highways	:	NH 20 – 0.50 KM;	

CO-ORDINATES

1	Latitude		From 23° 32' 20.5445" N	To 23° 32' 23.5525" N
2	Longitude		From 85° 29' 34.6123" E	To 85° 29' 38.3377" E

LAND DETAILS

Khata no.	Plot no.
11	179
61	180

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Ranchi vide letter no. 191/M, dated 06.02.2025.
2	CO	:	The CO, Ormanjhi, Ranchi vide letter no. 644 (ii), dated 20.07.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Ranchi vide memo no. 320/M, dated 04.03.2025 certified that 02 other mining lease area (2.60 Acre & 1.60 Acre) exists within 500 meters radius from proposed project site and total area is 5.42 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Ranchi vide letter no. 720, dated 28.08.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Ranchi Forest Division vide letter no. 2779, dated 20.08.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Ranchi District (Sl. no. 07, Page no. 56).
7	Gram Sabha	:	BDO, Ormanjhi, Ranchi vide letter no. 982 (ii), dated 17.08.2024 informed that Gram Sabha conducted on 17.08.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Ranchi vide Memo No. 321/M, dated 04.03.2025.
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 Mechanized.
2	Quarry Area	:	Plan period – 0.289 ha.
3	Waste Generation	:	Plan period – 8,910 m^3
4	Stripping Ratio	:	0.05 (overall stripping ratio)

5	Working Days	:	300
6	Benches: Size & No	:	6m x 6m and 4 benches.
7	Elevation of Mine	:	679 m AMSL TO 669 m AMSL
8	Ground Level Elevation	:	669 m AMSL
9	Ultimate Working Depth	:	655 m AMSL
10	Water Table	:	648 m AMSL
11	Topography of Mine	:	Gentle slope from East to West.
12	Explosive Requirement	:	5,167 kg/year
13	Diesel/Fuel requirement	:	Transport Vehicle & Machineries- 160 Litre/day, (DG set not required)

Production Details

Year	Production of stone (Cum)	Production of stone (Tonne)	OB (Cum)	Bench AMSL in Meters
1st	11822	31919	3784	673 – 667
2nd	12016	32442	1346	673 – 667
3rd	12306	33227	648	667 – 661
4th	13178	35582	2326	667 - 655
5th	15310	41338	806	665 - 661
Total	**64632**	**174507**	**8910**	

Land Use

SL	Pattern	Existing Land Use (Ha)	Proposed Current Plan Period (Ha)	Proposed Land Use at End of Life of Mine (Ha)	Land Usage at Conceptual Stage
1	Mining Area	0.00	0.289	0.289	Water Body
2	Dump	0.00	0.000	0.000	-
3	Office /Store	0.00	0.000	0.000	-
4	Crusher	0.00	0.000	0.000	-
5	Road	0.00	0.000	0.000	-
6	Safety Zone	0.00	0.204	0.204	Green Belt
7	Unutilized	1.052	0.000	0.000	-
	TOTAL	**0.493**	**0.493**	**0.493**	

ENVIRONMENT MANAGEMENT

Green Belt Development

Sl. No.	LOCATION		Area/Length	No. of Trees
1.	Safety Zone	:	0.204 ha	225 trees
2.	Other Reclaimed Area	:	0.028 ha	25 trees (Conceptual stage)
3.	Haul /Approach Road	:	50 m	50 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

BUDGETARY PROVISION FOR ENVIRONMENT MANAGEMENT PLAN (EMP)		
300 Tree Plantation @Rs.300 per Tree for planting & @Rs.50 per tree for maintenance	90000	15000
Water Tanker @Rs. 500 per Tanker for Dust Suppression (6.0 KLD) & Horticulture (1.0 KLD) 6.0 + 1.0 = 7.0 KLD 7 KLD X 300 Days = 2100 KLD KLD / 4 KLD = 525 Tankers	0	2,62,500
Garland Drain & Parapet wall	2,95,000	29,500
Environment Monitoring & Compliance	0	50,000
Total	**3,85,000**	**357000**

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

During first, second, third and fourth year gritty soil & intercalated waste will be removed (12552 m^3) this soil and waste will be temporarily backfill within the exhausted quarry and in fifth year (2534 m^3) removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

Water Quality Management

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

Air Quality Management

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

Mitigation measures:

Use of Sharp Drill Bits

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

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

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

Dust generation during drilling

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

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

- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

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

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

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

Blasting Operations

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

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

Handling of Explosives

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

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the

weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.

- Poorly designed shots can result in misfires, early ignition and flying rock.

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

Organizational Structure:

Introduction

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

Our company is committed to:

- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

EMP Cell Objectives

The EMP Cell objectives are:

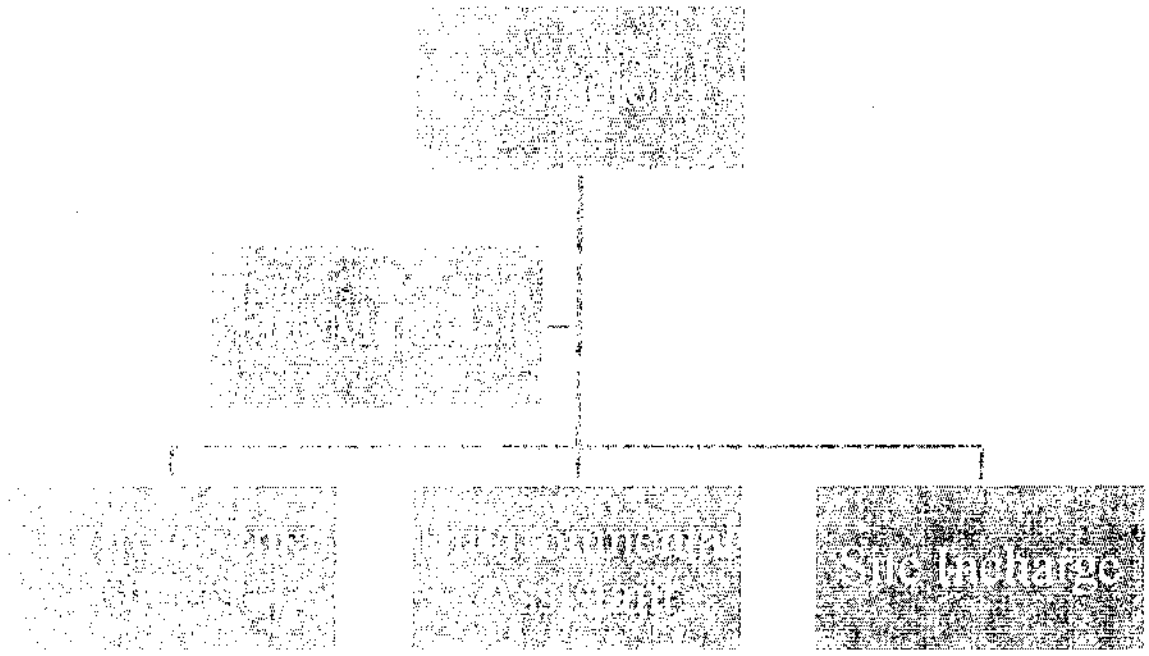
- Minimize environmental impacts on air, water, soil, and biodiversity

- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

EMP Cell Structure

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks



EMP Cell structure

Roles and Responsibilities

Environmental Officer (EO)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

Environmental Assistant (EA)

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment

- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EMP manual
- Monitoring records

- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

Undertaking submitted affirming:

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

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Piska Stone Deposit of M/s Silver Stone (Partner : Shri Manoj Kumar Singhania), Village : Piska, Tehsil : Ormanjhi, Distt. : Ranchi, Jharkhand (0.493 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). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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7. Kurchudih Stone Deposit of M/s Siddhivinayak Mining and Minerals Private Limited (Director : Shri Shammi Mittal), Village : Kurchudih, Tehsil : Tamar, Distt. : Ranchi, Jharkhand (2.489 Ha).

(Proposal no.: SIA/JH/MIN/ 530544 /2025)

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

This is a new project which has been taken for appraisal on 24.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity–284544Tonnes per year or 101623 cum per year

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Kurchudih Stone Deposit	
2	Lessee:	:	M/s Siddhivinayak Mining and Minerals Private Limited, Director :Sri Shammi Mittal	
3	Lessee Address	:	Permanent Address :At- 91, Buchidari, Chatra, , District : Chatra Present Address :Do	
4	Lease Area	:	2.489Ha.	6.15 Acre
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost	:	Capital : Rs. 1167300	Recurring : Rs. 20072660 per year
7	EMP Budget	:	Capital : Rs. 467300	Recurring : Rs. 648440 per year
8	New or Expansion	:	New	
9	Mineable Reserves	:	508042 Cum	1422517 Tonnes
10	Mine Life	:	5 Years	
11	Man power	:	46	
12	Water Requirement	:	16.16 KLD	
13	Water Source	:	By authorised hired water tankers	
14	DG Set / power	:	-	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	KarkariNadi (5.02 Km) west to east direction	
17	Nearest Habitation	:	Birdih Village (1.8Km)	

18	Nearest Rail Station	:	Tiruldih Railway Station (15.15Km)
19	Nearest Air Port	:	Birsa Munda Airport, Ranchi (55 Km)
20	Nearest Forest	:	
21	Road & Highways	:	NH-43 (8.95 km)

CO-ORDINATES

PILLAR NO	LATITUDE	LONGITUDE
P1	N23°04'37.190"	E85°47'45.550"
P2	N23°04'37.369"	E85°47'48.061"
P3	N23°04'37.523"	E85°47'50.290"
P4	N23°04'36.287"	E85°47'50.379"
P5	N23°04'33.966"	E85°47'50.546"
P6	N23°04'31.832"	E85°47'50.703"
P7	N23°04'31.530"	E85°47'47.880"
P8	N23°04'31.293"	E85°47'45.671"
P9	N23°04'33.216"	E85°47'45.631"
P10	N23°04'35.435"	E85°47'45.586"

LAND DETAILS

Khata no.	Plot no.
39	284 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Ranchi vide letter no. 194/M, dated 06.02.2025.
2	CO	:	The CO, Tamar (Ranchi) vide letter no. 548 (ii), dated 08.10.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Ranchi vide memo no. 257/M, dated 22.02.2025 certified that 01 other mining lease area (6.15 Acre) exists within 500 meters radius from proposed project site and total area is 12.30 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Ranchi vide letter no. 156, dated 07.03.2025 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.

5	DFO Territorial	:	Divisional Forest Officer, Khunti Forest Division vide letter no. 1669, dated 25.09.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Ranchi District (Sl. no. 10, Page no. 54).
7	Gram Sabha	:	BDO, Tamar, Ranchi vide letter no. 1193 (ii), dated 08.10.2024 informed that Gram Sabha conducted on 08.10.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Ranchi vide Memo No. 284/M, dated 27.02.2025.
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	:	Semi-mechanized "OTFM" Method	
2	Quarry Area	:	2.034 Ha	Life of Mine – 5 years
3	Waste Generation	:	37323 cum	
4	Stripping Ratio	:	1:0.5	
5	Working Days	:	300	
6	Benches: size & No	:	6m to 6m and 6 in numbers	
7	Elevation of Mine	:	272 m AMSL to 250 m AMSL	
8	Ground Level Elevation	:	249 m AMSL	
9	Ultimate Working Depth	:	212m AMSL	
10	Water Table	:	193m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	95kg/day	
13	Diesel/Fuel requirement	:	569 litre/day	

Production Details

Year	Removal of Gritty Soil		Intercalated Waste	Production of Stone	
	In cum	In tonnes	In cum	In cum	In tonnes
1st	6077	9116	5344	101520	284259

2nd	000	000	5347	101600	284479
3rd	4512	6768	5348	101623	284544
4th	000	000	5347	101600	284479
5th	000	000	5348	101623	284544
Total	**10589**	**15884**	**26734**	**507966**	**1422305**

Land Use

Type of Land	Present Land Use (in Ha)	At the End of Plan Period (in Ha)	At the End of Mine (in Ha)	Conceptual Period (in Ha)		
				Public use	Water Body	Plantation
Quarry	Nil	2.034 (Including backfill 0.404 Ha.)	2.034 (Including backfill 0.404 Ha.)	----	1.345	0.689 (Dead bench plantation)
Greenbelt within Safety Barrier	Nil	0.455	0.455	-----	-----	0.455
Road	0.008	Nil	Nil	------	------	-------
Total Area in Use	**0.008**	**2.489**	**2.489**	**-----**	**1.345**	**1.345**
Balanced Area unused	2.481	Nil	Nil	-----	-----	----
Total Applied Area	**2.489**	**2.489**	**2.489**	**2.489**		

ENVIRONMENT MANAGEMENT

Green Belt Development

Area in Safety Zone (Ha.)	Approach Road Area (Ha.)	Total Area for Plantation (Ha.)	No. of Plants	Timeline
0.455	0.0	0.455	728	1st Year

- 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

BUDGETARY PROVISION FOR ENVIRONMENT MANAGEMENT PLAN (EMP)		
728Tree Plantation @Rs.300 per Tree for planting & @Rs.50 per tree for maintenance	218400	36400
WaterTanker@Rs.500perTankerforDustSuppression (9.956 KLD) & Horticulture (4.368 KLD) 9.956+4.368 =14.342KLD 14.342KLDX300Days=4302.6KLD 4302.6KLD /4KLD =1076Tankers	0	537150
Garland Drain & Parapet wall	248900	24890
Environment Monitoring & Compliance	0	50000
Total	**467300**	**648440**

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

During first, second, third and fourth year gritty soil & intercalated waste will be removed (17909m^3) this soil and waste will be temporarily backfill within the exhausted quarry and in

fifth year (3850m^3) removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

Water Quality Management

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

Air Quality Management

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

Mitigation measures:

Use of Sharp Drill Bits

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

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

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

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

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

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on 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.

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

Organizational Structure:

Introduction

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

Our company is committed to:

- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

EMP Cell Objectives

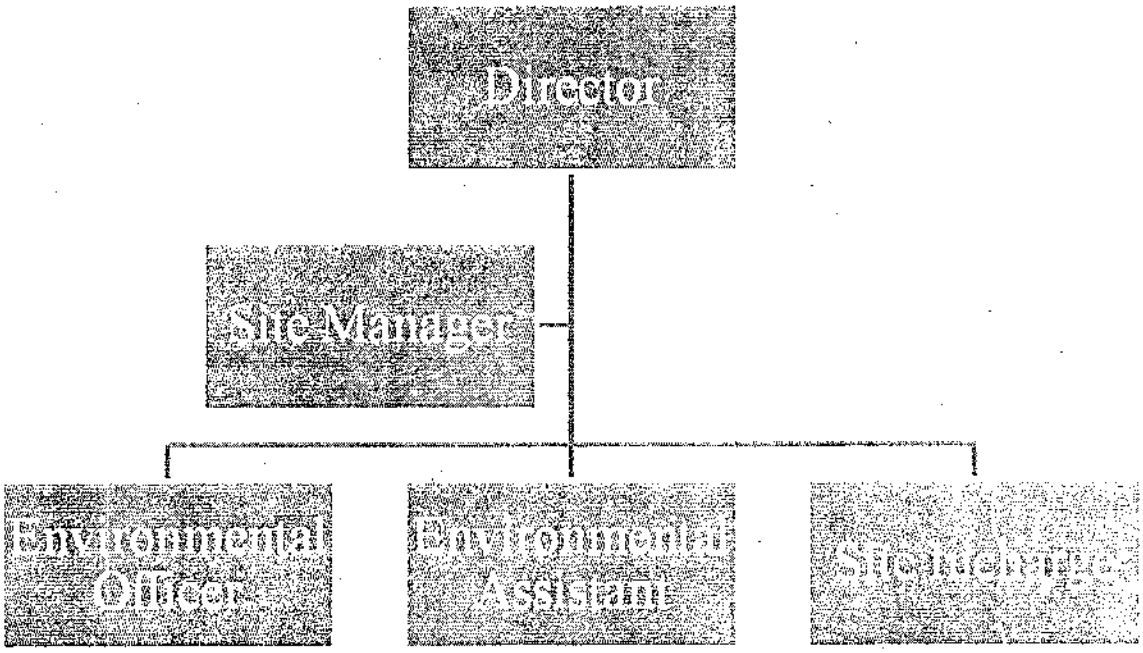
The EMP Cell objectives are:

- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

EMP Cell Structure

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks



EMP Cell structure

Roles and Responsibilities

Environmental Officer (EO)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

Environmental Assistant (EA)

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting

- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EMP manual

- Monitoring records
- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

Undertaking submitted affirming:

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

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Kurchudih Stone Deposit of M/s Siddhivinayak Mining and Minerals Private Limited (Director : Shri Shammi Mittal), Village : Kurchudih, Tehsil : Tamar, Distt. : Ranchi, Jharkhand (2.489 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). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

****

8. **Kurchudih Stone Deposit of M/s Kingstone Mining and Minerals Private Limited (Director : Smt. Sangita Kumari Agarwal), Village : Kurchudih, Tehsil : Tamar, Distt. : Ranchi, Jharkhand (2.489 Ha).**

(Proposal no.: SIA/JH/MIN/ 530545 /2025)

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

This is a new project which has been taken for appraisal on 24.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity–268049Tonnes per year or 95732 cum per year

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Kurchudih Stone Deposit	
2	Lessee:	:	M/s Kingstone Mining and Minerals Private Limited, Director :Smt. Sangita Kumari Agrawal	
3	Lessee Address	:	Permanent Address :At- Flat No. 201, Arsvali Enclave, Pandra Road, Near V Mart, P.O. - Hehal, Ranchi, Jharkhand Present Address :Do	
4	Lease Area	:	2.489Ha.	6.15 Acre
5	Type of Land	:	Non-Forest Raiyati Land	
6	Project Cost	:	Capital : Rs. 1201200	Recurring : Rs. 20100735per year
7	EMP Budget	:	Capital : Rs. 501200	Recurring : Rs. 679515 per year
8	New or Expansion	:	New	
9	Mineable Reserves	:	478515 Cum	1339842 Tonnes
10	Mine Life	:	5 Years	
11	Man power	:	44	
12	Water Requirement	:	16.76 KLD	
13	Water Source	:	By authorised hired water tankers	
14	DG Set / power	:	-	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	KarkariNadi(4.83Km)	
17	Nearest Habitation	:	Chalagi Village (1.0 Km)	

18	Nearest Rail Station	:	Tiruldih Railway Station (15.21Km)
19	Nearest Air Port	:	Birsa Munda Airport, Ranchi (55.19 Km)
20	Nearest Forest	:	Protected forest is more than 250 meter from proposed project site.
21	Road & Highways	:	NH-43 (8.85 km)

CO-ORDINATES

PILLAR NO	LATITUDE	LONGITUDE
P1	N23°04'31.328"	E85°47'45.997"
P2	N23°04'31.530"	E85°47'47.880"
P3	N23°04'31.832"	E85°47'50.703"
P4	N23°04'30.064"	E85°47'50.772"
P5	N23°04'28.609"	E85°47'50.636"
P6	N23°04'28.201"	E85°47'53.191"
P7	N23°04'26.677"	E85°47'53.435"
P8	N23°04'26.627"	E85°47'52.300"
P9	N23°04'26.232"	E85°47'49.765"
P10	N23°04'25.873"	E85°47'47.714"
P11	N23°04'25.697"	E85°47'46.739"
P12	N23°04'28.208"	E85°47'46.558"
P13	N23°04'29.147"	E85°47'46.717"
P14	N23°04'29.548"	E85°47'46.389"
P15	N23°04'29.910"	E85°47'45.941"

LAND DETAILS

Khata no.	Plot no.
39	284 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Ranchi vide letter no. 193/M, dated 06.02.2025.
2	CO	:	The CO, Tamar (Ranchi) vide letter no. 549 (ii), dated 08.10.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Ranchi vide memo no. 258/M, dated 22.02.2025 certified that 01 other mining lease area (6.15 Acre) exists within 500 meters radius from proposed project site and total area is 12.30

			Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Ranchi vide letter no. 157, dated 07.03.2025 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Khunti Forest Division vide letter no. 1662, dated 24.09.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Ranchi District (Sl. no. 10, Page no. 54).
7	Gram Sabha	:	BDO, Tamar, Ranchi vide letter no. 1194 (ii), dated 08.10.2024 informed that Gram Sabha conducted on 08.10.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Ranchi vide Memo No. 303/M, dated 01.03.2025.
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	:	Semi-mechanized "OTFM" Method	
2	Quarry Area	:	1.963 Ha.	Life of Mine – 5 years
3	Waste Generation	:	37387 cum	
4	Stripping Ratio	:	1:0.5	
5	Working Days	:	300	
6	Benches: size & No	:	6m to 6m and 6 in numbers	
7	Elevation of Mine	:	248 m AMSL to 240 m AMSL	
8	Ground Level Elevation	:	239 m AMSL	
9	Ultimate Working Depth	:	200m AMSL	
10	Water Table	:	193m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	89kg/day	
13	Diesel/Fuel requirement	:	536 litre/day	

Production Details

Year	Removal of Gritty Soil		Intercalated Waste	Production of Stone	
	In cum	In tonnes	In cum	In cum	In tonnes
1st	6344	9516	5035	95655	267835
2nd	000	000	5038	95713	267996
3rd	5858	8784	5039	95732	268049
4th	000	000	5038	95713	267996
5th	000	000	5037	95668	267865
Total	**12200**	**18300**	**25187**	**478481**	**1339741**

Land Use

Type of Land	Present Land Use (in Ha)	At the End of Plan Period (in Ha)	At the End of Mine (in Ha)	Conceptual Period (in Ha)		
				Public use	Water Body	Plantation
Quarry	Nil	1.963 (Including backfill 0.429 Ha.)	1.963 (Including backfill 0.429 Ha.)	----	1.327	0.636 (Dead bench plantation)
Greenbelt within Safety Barrier	Nil	0.526	0.526	-----	-----	0.526
Road	0.068	Nil	Nil	------	------	-------
Total Area in Use	**0.068**	**2.489**	**2.489**	**-----**	**1.327**	**1.162**
Balanced Area unused	2.421	Nil	Nil	-----	-----	----
Total Applied Area	**2.489**	**2.489**	**2.489**	**2.489**		

ENVIRONMENT MANAGEMENT

Green Belt Development

Area in Safety Zone (Ha.)	Approach Road Area (Ha.)	Total Area for Plantation (Ha.)	No. of Plants	Timeline

0.526	0.0	0.526	841	1st Year

- 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

BUDGETARY PROVISION FOR ENVIRONMENT MANAGEMENT PLAN (EMP)		
Particulars	**Capital**	**Recurring**
841Tree Plantation @Rs.300 per Tree for planting & @Rs.50 per tree for maintenance	252300	42050
Water Tanker @Rs. 500 per Tanker for Dust Suppression (9.956 KLD) & Horticulture (5.046 KLD) 9.956 + 5.046= 15.002 KLD 15.002 KLD X 300 Days = 4500.6 KLD 4501 KLD / 4 KLD = 1125 Tankers	0	562500
Garland Drain & Parapet wall	248900	24890
Environment Monitoring & Compliance	0	50000
Total	**501200**	**679440**

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	Six Monthly

		water	
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

During first, second, third and fourth year gritty soil & intercalated waste will be removed (25187m^3) this soil and waste will be temporarily backfill within the exhausted quarry and in fifth year (5037m^3) removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

Water Quality Management

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

Air Quality Management

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

Mitigation measures:

Use of Sharp Drill Bits

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

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

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

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

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

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on 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.

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

Accident at Site

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

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

- Untrained drivers
- Overturning vehicles

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

Transportation

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

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

Organizational Structure:

Introduction

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

Our company is committed to:

- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

EMP Cell Objectives

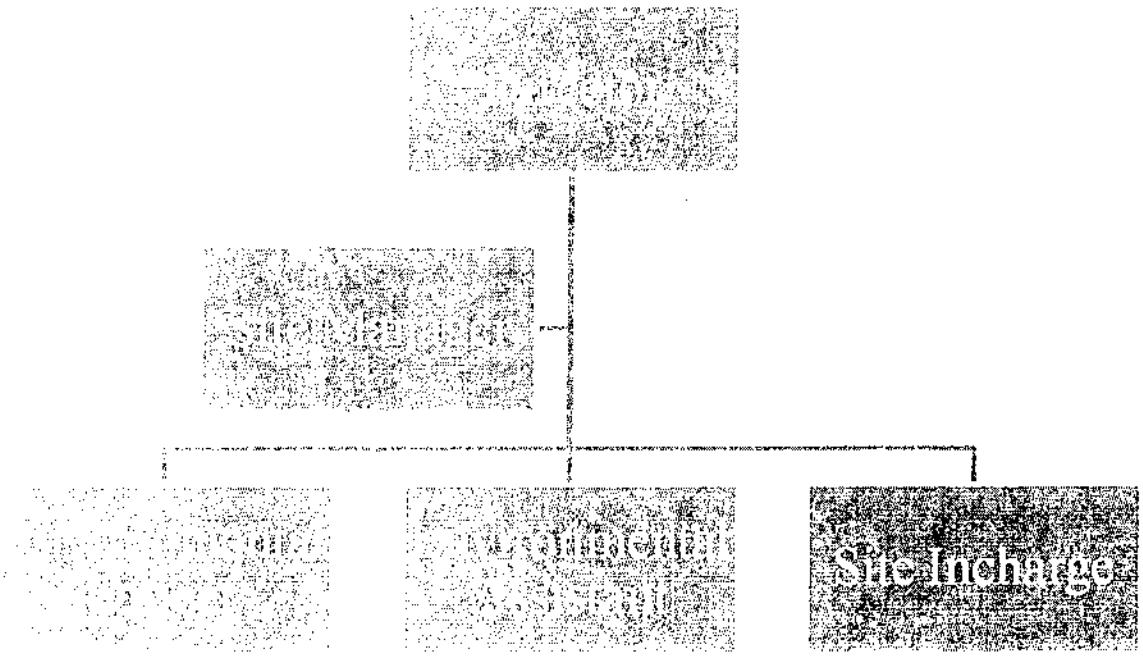
The EMP Cell objectives are:

- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

EMP Cell Structure

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks



EMP Cell structure

Roles and Responsibilities

Environmental Officer (EO)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide environmental training
- Manage environmental data collection

- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

Environmental Assistant (EA)

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation

6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EIviP manual
- Monitoring records
- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

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 Kurchudih Stone Deposit of M/s Kingstone Mining and Minerals Private Limited (Director : Smt. Sangita Kumari Agarwal), Village : Kurchudih, Tehsil : Tamar, Distt. : Ranchi, Jharkhand (2.489 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). 10% of the total green belt proposed shall be allocated under this clause.
II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged

photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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3. **Kalyanpur Stone Deposit of M/s Sai Mining Contractor (Partner : Shri Krishna Dev Singh and Shri Amrendra Kumar Sahu), Village : Kalyanpur, Circle : Jaridih, Distt. : Bokaro, Jharkhand (2.209 Ha).**

(Proposal no.: SIA/JH/MIN/ 529880 /2025)

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

This is a new project which has been taken for appraisal on 24.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity–132074.32Tonnes per year 47169.40 cum per year

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Kalyanpur Stone Deposit	
2	Lessee:	:	M/s Sai Mining Contractor, Partner -1. -Krishna Dev Singh, S/o Anand Dev Singh & 2.- Amrendra Kumar Sahu S/o RamautarSahu	
3	Lessee Address	:	Permanent Address :1.- Ray Bazar Khelari, District - Ranchi, Jharkhand 2.- Mayapur, Kamta District – Chatra, Jharkhand Present Address :Do	
4	Lease Area	:	2.209Ha.	5.46 Acre
5	Type of Land	:	Non-Forest Raiyati Land	
6	Project Cost	:	Capital : Rs. 1297700	Recurring : Rs. 9439340 per year
7	EMP Budget	:	Capital : Rs. 597700	Recurring : Rs. 748840 per year
8	New or Expansion	:	New	
9	Mineable Reserves	:		618088.24 Tonnes

10	Mine Life	:	5 Years
11	Man power	:	20
12	Water Requirement	:	17.17 KLD
13	Water Source	:	By authorised hired water tankers
14	DG Set / power	:	-
15	Crusher	:	No crusher
16	Nearest Water Body	:	Damodar River -7.8 Km
17	Nearest Habitation	:	KalyanpurParsadihVillage (0.31 Km)
18	Nearest Rail Station	:	Shyampur Railway Station (14Km)
19	Nearest Air Port	:	Birsa Munda Airport, Ranchi(80 Km)
20	Nearest Forest	:	Protected forest is more than 250 meter from proposed project site.
21	Road & Highways	:	Patratu - Jenamor Road (3 km)

CO-ORDINATES

PILLAR_NO	LATITUDE	LONGITUDE
P1	23°40'56.036"	85°58'24.948"
P2	23°40'56.993"	85°58'25.713"
P3	23°40'57.011"	85°58'25.934"
P4	23°40'56.703"	85°58'26.304"
P5	23°40'57.096"	85°58'27.011"
P6	23°40'57.466"	85°58'27.359"
P7	23°40'56.859"	85°58'28.661"
P8	23°40'56.843"	85°58'28.929"
P9	23°40'55.898"	85°58'29.777"
P10	23°40'55.034"	85°58'30.361"
P11	23°40'55.211"	85°58'29.873"
P12	23°40'54.950"	85°58'29.760"
P13	23°40'54.670"	85°58'30.095"
P14	23°40'54.233"	85°58'31.655"
P15	23°40'53.589"	85°58'31.011"
P16	23°40'53.165"	85°58'30.461"
P17	23°40'52.400"	85°58'30.340"
P18	23°40'52.504"	85°58'29.575"
P19	23°40'52.424"	85°58'29.315"
P20	23°40'52.538"	85°58'28.734"
P21	23°40'51.362"	85°58'28.115"
P22	23°40'51.526"	85°58'27.623"

P23	23°40'52.302"	85°58'27.334"
P24	23°40'52.772"	85°58'27.038"
P25	23°40'53.436"	85°58'27.146"
P26	23°40'53.441"	85°58'26.886"
P27	23°40'53.125"	85°58'26.687"
P28	23°40'52.237"	85°58'27.003"
P29	23°40'51.088"	85°58'26.078"
P30	23°40'50.838"	85°58'25.419"
P31	23°40'50.988"	85°58'24.875"
P32	23°40'51.560"	85°58'24.617"
P33	23°40'52.156"	85°58'23.784"
P34	23°40'53.281"	85°58'24.334"
P35	23°40'52.871"	85°58'25.400"
P36	23°40'53.721"	85°58'25.774"
P37	23°40'54.612"	85°58'26.308"
P38	23°40'55.141"	85°58'26.524"
P39	23°40'55.550"	85°58'25.759"

LAND DETAILS

Khata no.	Plot no.
23	31 (P)
34	40 (P)
24	41 (P)
8	42

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Bokaro vide memo no. 1812/Khanan, dated 27.12.2024.
2	CO	:	The CO, Jaridih (Bokaro) vide letter no. 139, dated 16.02.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Bokaro vide memo no. 78/M, dated 22.01.2025 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1402, dated 10.07.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Bokaro Forest Division vide letter no.

			305, dated 07.02.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Bokaro has been certified vide memo no. 393/M, dated 20.03.2025 that this project is mentioned in approved DSR of Bokaro District as a potential area (Page no. 107).
7	Gram Sabha	:	BDO, Jaridih (Bokaro) vide letter no. 1252, dated 12.09.2023 informed that Gram Sabha conducted on 17.02.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Bokaro vide Memo No. 284/M, dated 28.02.2025.
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	:	Semi-mechanized "OTFM" Method	
2	Quarry Area	:	2.209 Ha. / 5.46 Acres	Life of Mine – 5 years
3	Waste Generation	:	20750 cum	
4	Stripping Ratio	:	1:0.3	
5	Working Days	:	300	
6	Benches: size & No	:	6m to 6m and 6 in numbers	
7	Elevation of Mine	:	296 m AMSL to 290 m AMSL	
8	Ground Level Elevation	:	289 m AMSL	
9	Ultimate Working Depth	:	260m AMSL	
10	Water Table	:	240m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	44kg/day	
13	Diesel/Fuel requirement	:	264 litre/day	

Production Details

Year	Production of Stone		Generation of I/waste in cum	O/B waste in cum	Total waste in cum	Stripping ratio t/m^3
	Cum	MT				
1st Year	45373.90	127046.92	2388.10	4305.00	6693.10	1:0.05

2nd Year	47169.40	132074.32	2482.60	2740.00	5222.60	1:0.03
3rd Year	46489.20	130169.76	2446.80	2088.00	4534.80	1:0.03
4th Year	43247.80	121093.84	2276.20	0.00	2276.20	1:0.01
5th Year	38450.30	107660.84	2023.70	0.00	2023.70	1:0.01
Total	**220730.60**	**618045.68**	**11617.40**	**9133.00**	**20750**	

Land Use

Pattern of Utilization	Existing Land use (Ha)	At the end of plan Period (ha)	At Conceptual period (Ha)
Excavation	Nil	1.555	1.555 (0.578 ha area shall be backfill plantation and rest area 0.977 ha left as water reservoir for rain water harvesting)
Waste Dump	Nil	Nil(comes under quarry)	Nil(comes under quarry)
Road	Nil	Nil(within quarry)	Nil(within quarry)
Infrastructure	Nil	Nil(comes under quarry)	Nil(comes under quarry)
Plantation (Green Belt)	Nil	0.654 (Within safety zone)	0.654 (Within safety zone)
Total	**Nil**	**2.209**	**2.209**

ENVIRONMENT MANAGEMENT

Green Belt Development

Area in Safety Zone (Ha.)	Approach Road Area (M)	Total Area for Plantation (Ha.)	No. of Plants	Timeline
0.654	210	0.654	1256	1st Year

- 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

BUDGETARY PROVISION FOR ENVIRONMENT MANAGEMENT PLAN (EMP)		
Particulars	**Capital**	**Recurring**
1256 Tree Plantation @Rs.300 per Tree for planting & @Rs.50 per tree for maintenance	376800	62800
Water Tanker @Rs. 500 per Tanker for Dust Suppression (7.536 KLD) & Horticulture (8.836 KLD) 7.536 + 8.836 = 16.372 KLD 16.372 KLD X 300 Days = 4911.6 KLD 4911.6 KLD / 4 KLD = 1228Tankers	0	614000
Garland Drain & Parapet wall	220900	22090
Environment Monitoring & Compliance	0	50000
Total	**597700**	**748890**

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

During first, second, third and fourth year gritty soil & intercalated waste will be removed (9133m^3) this soil and waste will be temporarily backfill within the exhausted quarry and in

fifth year (2023.70m^3) removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

Water Quality Management

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

Air Quality Management

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

Mitigation measures:

Use of Sharp Drill Bits

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

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

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

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

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

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on 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.

Organizational Structure:

Introduction

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

Our company is committed to:

- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

EMP Cell Objectives

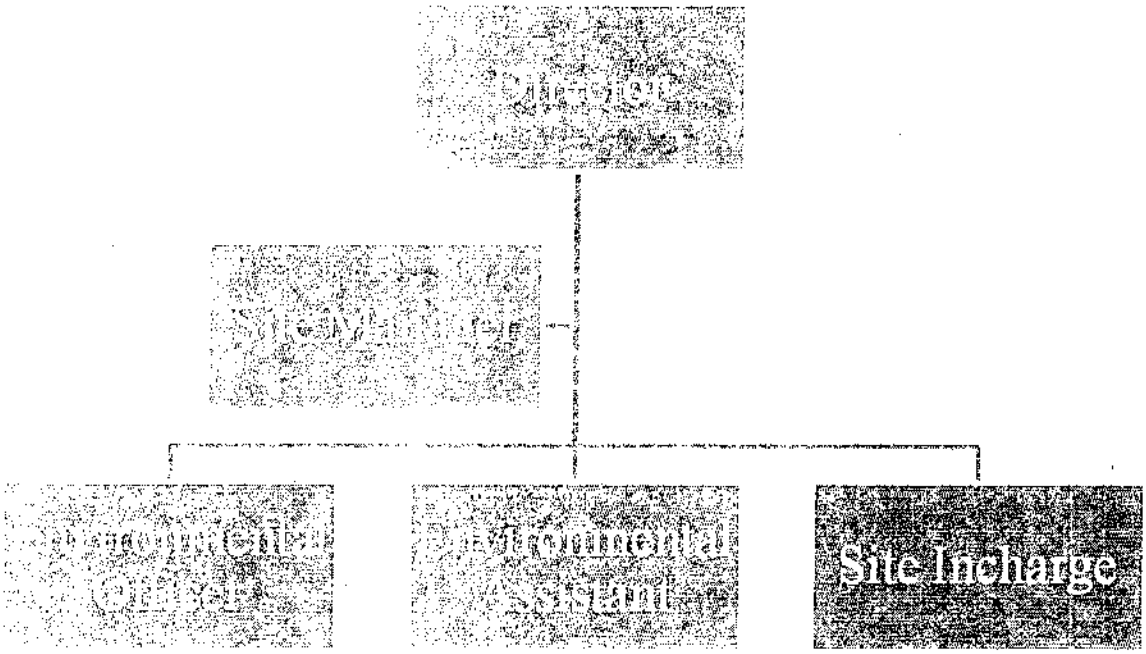
The EMP Cell objectives are:

- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

EMP Cell Structure

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks



EMP Cell structure

Roles and Responsibilities

Environmental Officer (EO)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

Environmental Assistant (EA)

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting

- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EMP manual

- Monitoring records
- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

Undertaking submitted affirming:

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

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Kalyanpur Stone Deposit of M/s Sai Mining Contractor (Partner : Shri Krishna Dev Singh and Shri Amrendra Kumar Sahu), Village : Kalyanpur, Circle : Jaridih, Distt. : Bokaro, Jharkhand (2.209 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). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed In Safety zone. Thls is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

****

10. **Loyenga Stone Deposit of M/s Balaji (Prop. : Shri Dhiraj Kumar), Village : Loyenga, Tehsil : Kamdara, Distt. : Gumla, Jharkhand (1.230 Ha).**

(Proposal no.: SIA/JH/MIN/ 527364 /2025)

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

This is a new project which has been taken for appraisal on 24.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for : **Proposed Capacity** –61765 **Tonnes per year or 22876 cum per year.**

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Loyenga Stone Deposit	
2	Lessee:	:	M/s Balaji Proprietor – Dhiraj Kumar	
3	Lessee Address	:	At village – Torpa, P.O + P.S – Torpa, District - Khunti	
4	Lease Area	:	1.230Ha.	3.04Acre
5	Type of Land	:	Non-Forest Raiyati Land	
6	Project Cost	:	Capital:Rs. 12,09,700	Recurring:Rs.44, 83,050 per year
7	EMP Budget	:	Capital:Rs. 5,09,700	Recurring:Rs.5,81,250 per year
8	New o Expansion	:	New	
9	Mineable Reserves	:	87692Cum	236767Tonnes
10	MineLife	:	5Years	
11	Manpower	:	17	
12	Water Requirement	:	13.33KLD	
13	Water Source	:	By authorized hired water tankers	
14	DG Set/power	:	-	
15	Crusher	:	Mobile Crusher	
16	Nearest Water Body	:	South Koel River at a distance of 6.5 km in South side.	
17	Nearest Habitation	:	Loenga Village at a distance of 600m in North-West direction.	
18	Nearest Rail Station	:	Pakra Railway Station at a distance of 6 km in South-East direction.	
19	Nearest AirPort	:	Birsa Munda Airport, Ranchi at a distance of 80 Km in North-East direction.	

20	Nearest Forest	:	None
21	Road & Highways	:	Kolebira-Khunti road, NH-143at about 1.5 km on Western side direction.

CO-ORDINATES:

Pillar Nos.	LATITUDE	LONGITUDE
P1	22°52'53.02268"	84°53'20.17565"
P2	22°52'54.04267"	84°53'18.67697"
P3	22°52'54.29060"	84°53'18.61282"
P4	22°52'54.61655"	84°53'18.63226"
P5	22°52'55.17491"	84°53'18.87637"
P6	22°52'55.49488"	84°53'19.01576"
P7	22°52'55.85837"	84°53'18.67438"
P8	22°52'56.35585"	84°53'18.86010"
P9	22°52'56.15936"	84°53'19.04338"
P10	22°52'56.15256"	84°53'19.49665"
P11	22°52'56.32720"	84°53'19.62632"
P12	22°52'56.52916"	84°53'19.61225"
P13	22°52'56.75664"	84°53'19.26960"
P14	22°52'57.21809"	84°53'19.65660"
P16	22°52'59.53843"	84°53'21.00934"
P15	22°52'58.06182"	84°53'20.05714"
P17	22°53'00.74792"	84°53'20.70017"
P18	22°53'01.14824"	84°53'20.62536"
P19	22°53'01.46155"	84°53'20.16434"
P20	22°53'02.32926"	84°53'20.64955"
P21	22°53'02.08766"	84°53'20.80172"
P22	22°53'01.79866"	84°53'21.55870"
P23	22°53'02.04670"	84°53'21.70558"
P24	22°53'01.93286"	84°53'22.83382"
P25	22°53'01.20368"	84°53'22.55636"
P26	22°53'00.60047"	84°53'22.49300"
P27	22°53'00.37108"	84°53'22.24799"
P28	22°52'59.62087"	84°53'21.71684"
P29	22°52'58.38028"	84°53'21.02820"
P30	22°52'57.07193"	84°53'20.38639"
P31	22°52'55.23658"	84°53'19.57024"
P32	22°52'54.79234"	84°53'19.54180"
P33	22°52'54.46790"	84°53'19.54046"
P34	22°52'53.30406"	84°53'20.36173"

P35	22°52'52.69102"	84°53'21.45052"
P36	22°52'54.16097"	84°53'22.50370"
P37	22°52'54.05815"	84°53'22.68060"
P38	22°52'52.06397"	84°53'22.51615"
P39	22°52'50.88284"	84°53'21.66500"
P40	22°52'52.26928"	84°53'19.64371"

LAND DETAILS

Khata no.	Plot no.
63	1205 & 1224 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by DC, Gumla vide letter no. 832/M, dated 17.10.2024.
2	CO	:	The LRDC, Basia (Gumla) vide letter no. 29 (ii), dated 28.07.2023 has mentioned the plot no. of the project is not recorded as "Jungle - Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Gumla vide memo no. 159/M, dated 05.02.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Ranchi vide letter no. 82, dated 13.02.2025 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Gumla Forest Division vide letter no. 1667, dated 12.08.2022 certified that the distance of forest land is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Gumla District (Sl. No. 04, Page no. 54).
7	Gram Sabha	:	BDO, Kamdara vide letter no. 1475 (ii), dated 27.12.2023 informed that Gram Sabha conducted on 18.12.2023.
8	Mine Plan Approval	:	Mining plan approved by DMO, Gumla vide letter no. 158/M, dated 05.02.2025.
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	:	Semi-mechanized "OTFM" Method	
2	Quarry Area	:	1.230 Ha.	Life of Mine–5years
3	Waste Generation	:	15086 cum	
4	Stripping Ratio	:	1:0.17	
5	Working Days	:	300	
6	Benches:size & No	:	6mto6m	
7	Elevation of Mine	:	536 m AMSL to 518 m AMSL	
8	Ground Level Elevation	:	540 m AMSL to 530 m AMSL	
9	Ultimate Working Depth	:	518 m AMSL	
10	WaterTable	:	500 m AMSL	
11	Topography of Mine	:	Area represent shilly land with gently sloping land.	
12	Explosive Requirement	:	20.9 kg/day	
13	Diesel/Fuel requirement	:	125.4 litre/day	

ProductionDetails

Year	Production of Stone in Cum	Production of Stone in Tonnes	Over burden in cum	Intercalated waste in Cum	Total waste in Cum
1st Year	14440	38988	4465	760	5225
2nd Year	15523	41912	0	817	817
3rd Year	16673	45018	1148	878	2026
4th Year	18179	49084	3528	957	4485
5th Year	22876	61765	1330	1204	2534
Total	**87692**	**236767**	**10471**	**4615**	**15086**

Land Use

Pattern of Utilization	ExistingLand Use (Ha)	At the end of Plan period (Ha)	At Conceptual stage (Ha)
Excavation	0.0	0.499 (0.275 Ha area shall be backfilled, 0.188 Ha converted in to water	0.499 (0.275 Ha area shall be backfilled, 0.188 Ha converted in to water reservoir and 0.036 Ha shall be left as dead benches).

		reservoir and 0.036 Ha shall be left as dead benches	
Waste dump	0.0	0.0	Nil (waste dump to be removed and backfilled).
Road	0.0	0.0	0.0
Infrastructure (Crusher)	0.00 (shifted to Quarry bottom)	0.0	0.00
Safety zone plantation	0.0	0.731	0.731
Total	**0.0**	**1.230**	**1.230**
Unused Area	**1.230**	**0**	**0.00**
TotalLeaseArea	**1.230**	**1.230**	**1.230**

ENVIRONMENTMANAGEMENT

Green Belt Development

Area in Safety Zone (Ha.)	Approach Road Area (Ha.)	Total Area for Plantation (Ha.)	No. of Plants	Time line
0.731	0.15	0.881	1409	1StYear

- 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

BUDGETARY PROVISION FOR ENVIRONMENT MANAGEMENT PLAN (EMP)		
1409 Tree Plantation @Rs.300 per Tree for planting &@Rs.50 per tree for maintenance	4,22,700	70,450
WaterTanker@Rs.500perTanker for Dust Suppression (4.92 KLD) & Horticulture (8.45 KLD) 4.92+8.45=13.37 KLD 13.37 KLDX300Days=4011KLD 4011KLD/4KLD=1003 Tankers	0	5,01,500

Garland Drain & Parapetwall	2,95,000	29,500
Environment Monitoring & Compliance	0	50,000
Total	**7,17,700**	**6,51,450**

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S.no	MonitoringParameters	No. of Locations	Frequency of Monitoring
1	AmbientAir: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 & Nightl evel 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

During first, second, third and fourth year gritty soil & intercalated waste will be removed (12552 m^3) this soiland waste will be temporarily back fill within the exhausted quarry and in fifth year (2534m^3) remove dgritty soil, inter calated waste and existing temporary back fill soil will be backfilled within the lower bench of the exhausted quarry.

Water Quality Management

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

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

Air Quality Management

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

Mitigation measures:

Use of Sharp Drill Bits

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

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

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

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

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

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on 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	Very Unlikely	Minor	20

		to Dust			
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.
The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

Preventive Measures:

Slope Failure

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

Control Measures

- 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-availabillty of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

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

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

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

Blasting Operations

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

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

Handling of Explosives

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.

- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Organizational Structure:

Introduction

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

Our company is committed to:

- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

EMP Cell Objectives

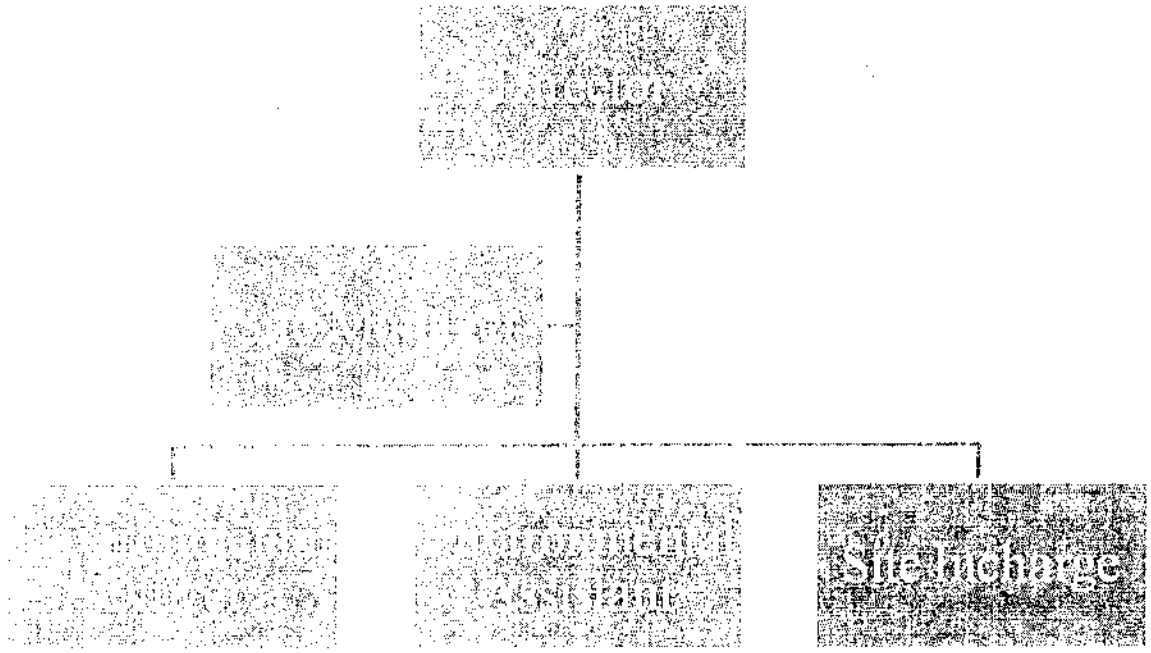
The EMP Cell objectives are:

- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

EMP Cell Structure

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks



EMP Cell structure

Roles and Responsibilities

Environmental Officer (EO)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

Environmental Assistant (EA)

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports

- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EMP manual
- Monitoring records

- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

Undertaking submitted affirming:

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

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Loyenga Stone Deposit of M/s Balaji (Prop. : Shri Dhiraj Kumar), Village : Loyenga, Tehsil : Kamdara, Distt. : Gumla, Jharkhand (1.230 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). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

****

13. Bindri Bandarkola Stone Deposit of M/s Vanya Stone Works (Partner : Shri Aniket Singh & Others), Village : Bindri Bandarkola, Tehsil : Borio, Distt. : Sahibganj, Jharkhand (1.841 Ha).

(Proposal no.: SIA/JH/MIN/ 530119 /2025)

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

This is a new project which has been taken for appraisal on 24.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for : Boulder Stone: 65769 Cu.M./ Year i.e. 1,77,575 TPA

PROJECT AND LOCATION DETAILS:

Sl. No.	Parameter		Details	
1	Project Name	:	Bindri Bandarkola Stone Deposit	
2	Lessee:	:	M/s Vanya Stone Works, (Partner: Sri Aniket Singh)	
3	Lease Address	:	Mouza – Bindri Bandarkola, Thana – Jirwabari District – Sahibganj, State – Jharkhand.	
4	Lease Area	:	Ha: 1.841 ha.	Acres: 4.55 Ac.
5	Type of Land	:	Non Forest – Rayati Land	
6	Project Cost	:	Capital: 10.94Lakhs	Recurring: 86.19 Lakhs/year
7	EMP Budget	:	Capital: 7.75 Lakhs	Recurring: 3.75 Lakh / year
8	CSR / CER Budget	:	NA	
9	New or Expansion	:	New Project	
10	Mineable Reserves	:	Cu. M.: 6,46,979	Tonnes: 17,46,842 Tonnes
11	Mine Life	:	10 years	
12	Man power	:	17	
13	Water Requirement	:	11.00 KLD (Drinking: 1.00 KLD, Dust Suppression: 8.00 KLD, Plantation: 2.00 KLD)	
14	Water Source	:	Dug well for drinking & Village pond/ Closed mine/ River water for dust suppression/ green belt	
15	DG Set / power	:	Not required	
16	Crusher	:	Not within mine lease area	
17	Nearest Water Body	:	Mahisol River 3 KM/ Ganga River – 14 km.	
18	Nearest Habitation	:	Bindri Bandarkola Village: 0.60 KM; Borio: 07 KM	
19	Nearest Rail Station	:	Kalyanchal - 15 KM	
20	Nearest Air Port	:	Deoghar - 120 KM	
21	Nearest Forest	:	Not within 250m	
22	Road & Highways	:	SH – 1.50 KM and NH 33 – 15 KM;	

CO-ORDINATES

1	Latitude		From 25° 03' 18.1244" N	To 25° 03' 24.3433" N
2	Longitude		From 87° 38' 00.4565" E	To 87° 38' 07.0720" E

LAND DETAILS

Khata no.	Plot no.
16	344 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 744/M, dated 14.08.2024.
2	CO	:	The CO, Borio, Sahibganj vide letter no. 567/Ra., dated 20.09.2022 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster	:	DMO, Sahibganj vide memo no. 536/M, dated 21.03.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2475, dated 30.09.2022 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide letter no. 1643, dated 23.08.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is lies within the potential village of approved DSR of Sahibganj District (Sl. No. 8, Page no. 156).
7	Gram Sabha	:	Gram Sabha conducted on 22.07.2022.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 1080/M, dated 07.10.2024.
9	Grid certificate	:	DMO, Sahibganj vide memo no. 310/M, dated 18.02.2025 also certified that the proposed project site is outside of Redzone Grid 1, 3, 4 & 7.
10	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 Mechanized.
2	Quarry Area	:	Plan period – 1.066 ha.
3	Waste Generation	:	Plan period – 46,483 m^3
4	Stripping Ratio	:	1:0.054 (overall stripping ratio)
5	Working Days	:	300
6	Benches: Size & No	:	6m x 6m and 13 benches.
7	Elevation of Mine	:	218m AMSL To 164m AMSL
8	Ground Level Elevation	:	130m AMSL
9	Ultimate Working Depth	:	138 m AMSL
10	Water Table	:	126 m AMSL
11	Topography of Mine	:	Slope from North to South.
12	Explosive Requirement	:	22,197 kg/year
13	Diesel/Fuel requirement	:	Transport Vehicle & Machineries- 200 Litre/day, (DG not required)

Production Details

Year	Production of stone (Cum)	Production of stone (Tonne)	OB (Cum)	Bench AMSL in Meters
1st	63,365	1,71,086	17480	210 – 192
2nd	63,911	1,72,560	11989	192 – 180
3rd	64,567	1,74,330	8343	180 – 174
4th	64,021	1,72,855	5210	174 – 168
5th	65,769	1,77,575	3462	162 – 156
Total	**3,21,632**	**8,68,406**	**46,483**	

Land Use

SL	Pattern	Existing Land Use (Ha)	Proposed Current Plan Period (Ha)	Proposed Land Use at End of Life of Mine (Ha)	Land Usage at Conceptual Stage
1	Mining Area	0.00	1.066	1.435	Water Body
2	Dump	0.00	0.286	0.000	-
3	Office /Store	0.00	0.000	0.000	-
4	Crusher	0.00	0.000	0.000	-
5	Road	0.00	0.004	0.000	-
6	Safety Zone	0.00	0.406	0.406	Green Belt
7	Unutilized	1.841	0.079	0.000	-
	TOTAL	**1.841**	**1.841**	**1.841**	

ENVIRONMENT MANAGEMENT

Green Belt Development

Sl. No.	LOCATION		Area/Length	No. of Trees
1.	Safety Zone	:	0.406 ha	450 trees
2.	Other Reclaimed Area	:	0.302 ha	325 (Conceptual Stage)
3.	Haul /Approach Road	:	50 m	50 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

BUDGETARY PROVISION FOR ENVIRONMENT MANAGEMENT PLAN (EMP)		
550 Tree Plantation @Rs.350 per Tree for planting & @Rs.50 per tree for maintenance	192500	27500
Water Tanker @Rs. 500 per Tanker for Dust Suppression (8.0 KLD) & Horticulture (2.00 KLD) 8.0 + 2.0 = 10 KLD 10 KLD X 300 Days = 3000 KLD 3000 KLD / 4 KLD = 750 Tankers	2,25,000	37500
Garland Drain & Parapet wall	2,95,000	29,500
Environment Monitoring & Compliance	0	50,000
Total	**7,12,500**	**144500**

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

During first, second, third and fourth year gritty soil & intercalated waste will be removed (12552 m^3) this soil and waste will be temporarily backfill within the exhausted quarry and in fifth year (2534 m^3) removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

Water Quality Management

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

Air Quality Management

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

Mitigation measures:

Use of Sharp Drill Bits

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

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

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

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

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

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

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

Accident at Site

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

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

- Overturning vehicles

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

Transportation

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

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

Organizational Structure:

Introduction

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

Our company is committed to:

- Minimizing environmental harm through responsible mining practices

- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

EMP Cell Objectives

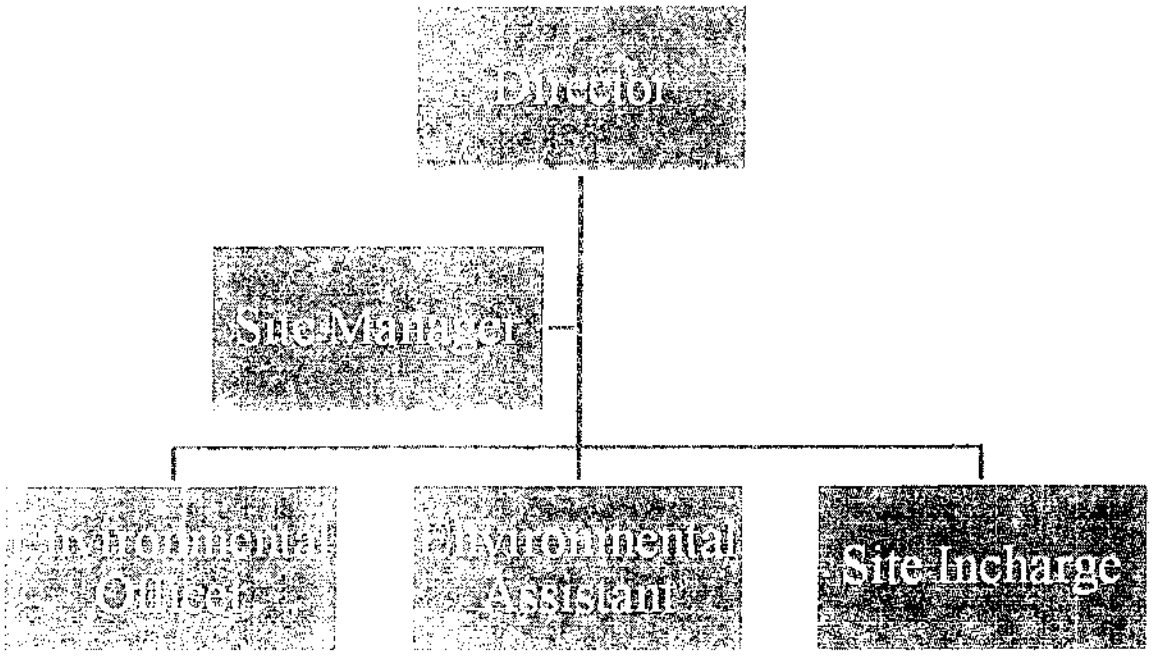
The EMP Cell objectives are:

- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

EMP Cell Structure

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks



EMP Cell structure

Roles and Responsibilities

Environmental Officer (EO)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities

- Provide environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

Environmental Assistant (EA)

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports

- Ensure compliance
- Foster environmental responsibility
- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EMP manual
- Monitoring records
- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and

responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

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 Bindri Bandarkola Stone Deposit of M/s Vanya Stone Works (Partner : Shri Aniket Singh & Others), Village : Bindri Bandarkola, Tehsil : Borio, Distt. : Sahibganj, Jharkhand (1.841 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). 10% of the total green belt proposed shall be allocated

under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

****

12. **Bindri Bandarkola Stone Deposit of Shri Ranjeet Kumar Singh, Village : Bindri Bandarkola, Tehsil : Borio, Distt. : Sahibganj, Jharkhand (2.833 Ha).**

(Proposal no.: SIA/JH/MIN/ 530322 /2025)

The PA vide letter dated 24.03.2025requested for withdrawal of the proposal.

Hence, the Committee recommends the project may be delisted.

****

Day 2 : March 25th, 2025 [Tuesday]

Consideration of proposals

1. **Binderi Bandarkola Stone Mine of M/s J.Z. Stone Works (Partner : Md. Jafar Abbas and Md. Zubair Alam) , Village : Binderi Bandarkola, Anchal : Borio, Distt. : Sahibganj, Jharkhand (2.83 Ha).**

   (Proposal no.: SIA/JH/MIN/ 525914 /2025)

   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 25.03.2025.

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

   Application for Environmental Clearance (EC).

   EC Application for: Proposed Capacity: 1,02,960 Cum Per Annum/343.20 Cum Per Day or 2,77,992 Ton Per Annum/ 926.64 Ton per Day.

   Project and Location Details:

S. No	Parameter		Details	
1	Project Name	:	Binderi Bandarkola Stone Mine by M/s J.Z Stone Works	
2	Partners	:	Md. Jafar Abbas and Md. Zubair Alam	
3	Lessee Address	:	R/o- At Kallalpada, Vtc Udhwa, Post Office- Rajmahal, District - Sahibganj, Jharkhand – 816108 R/o - AT Vill - Mirzapur Bardah, Post - Dariyapur, Thana - Muffasil, District-Munger, Bihar-811202	
4	Lease Area	:	Acres: 7.00	Ha:2.83
5	Type of Land	:	Raiyati Land	
6	Project Cost	:	40.00 Lakhs	
7	EMP Budget	:	Capital: 41.94Lakhs	Recurring: 9.0Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	10,05,752 Cum	27,15,530.4 Tonnes
10	Mine Life	:	10 Years	
11	Man power	:	26 persons	
12	Water Requirement	:	Total water requirement is about 20.78 KLD=0.78KLD (Drinking & Domestic Uses) + 10.0 (Plantation) KLD + 10.0 KLD (Dust Suppression).	
13	Water Source	:	The drinking water will be available from nearby village by tractor tank manually by labors at the site.	
14	DG Set / power	:	125 KVA (Temporary setup for Backup)	
15	Crusher	:	No	
16	Nearest Water Body	:	Chhota Bandar Kola Village Pond is about 0.29km in ESE	

			direction.
17	Nearest Habitation	:	Chhota Bandar Kola is about 0.77 km in E direction.
18	Nearest Rail Station	:	Kalian Chak Railway station is about 11.94 km in ESE direction.
19	Nearest Airport	:	Dumka Airport is about 96 km in SSW direction.
20	Nearest Forest	:	Guti Mago P.F — 1.36 — SE Chapi P.F — 3.9 — SSE Chandwasi P.F — 6.3 — SW Batbanga P F — 4.78 — NE
21	Road & Highways	:	Rajmahal- Tinpahar - Borrio is about 0.96 km in SSE direction.

CO-ORDINATES

PILLARS	LATITUDE	LONGITUDE
1	25°2'27.462"N	87°38'1.248"E
2	25°2'29.202"N	87°38'2.347"E
3	25°2'30.927"N	87°38'3.407"E
4	25°2'32.918"N	87°38'4.743"E
5	25°2'32.931"N	87°38'5.809"E
6	25°2' 34.880"N	87°38'5.783"E
7	25°2'35.578"N	87°38'5.809"E
8	25°2'34.820"N	87°38'8.135"E
9	25°2'34.179"N	87°38'9.140"E
10	25°2'32.568"N	87°38'8.442"E
11	25°2'30.259"N	87°38'7.431"E
12	25°2'28.632"N	87°38'6.722"E
13	25°2'26.585"N	87°38'5.830"E
14	25°2'26.762"N	87°38'4.696"E
15	25°2'26.964"N	87°38'3.745"E

LAND DETAILS

Khata no.	Plot no.
46	629 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 1396/M, dated 16.12.2024.
2	CO	:	The CO, Borio, Sahibganj vide letter no. 745/Ra., dated 05.10.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster and Grid certificate	:	DMO, Sahibganj vide memo no. 229/M, dated 08.02.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site and also certified that the proposed

			project site is outside of Redzone Grid 1, 3, 4 & 7.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2585, dated 08.10.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide letter no. 2584, dated 08.10.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The project is not specifically mentioned in the approved DSR of Sahibganj District in Chapter 13. DMO, Sahibganj vide letter no. 431, Dated 11.03.2025 requested to consider the said project proposal as part of chapter 13 (LoI Holder list in the District) of approved District Survey Report & further requested that this project may be taken up for consideration for grant of EC. The Committee accepted the request of the DMO, Sahibganj.
7	Gram Sabha	:	Gram Sabha conducted on 30.09.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 378/M, dated 28.02.2025.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

WORKING DETAILS

1	Mining Method	:	OCM &Semi Mechanised	
2	Lease Area	:	7.00 ACRES / 2.83 HA	Life of Mine – 10 years
3	Waste Generation	:	5 years–97,328 Cum	
4	Stripping Ratio(t/m^3)	:	1:0.35	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Highest Elevation of lease Area	:	172 AMSL	
8	Lowest Elevation of lease Area	:	112AMSL	
9	Ultimate Working Depth	:	24 above AMSL (From Ground Surface)	
10	Water Table	:	62 above AMSL (50BGL)	
11	Topography of Mine	:	Hillocks area	

12	Explosive Requirement	:	231.73 kg
13	Diesel/Fuel requirement	:	564 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	62040	102960	277992	Construction & Road
2nd	9856	98384	265636.8	Construction & Road
3rd	5896	94688	255657.6	Construction & Road
4th	12584	96272	259934.4	Construction & Road
5th	6952	101721	274646.7	Construction & Road
Total	97328	494025	1333867.5	
Maximum production proposed in- 97328Cum/277992Ton				
Stripping Ration in (t/m3)- 1:0.35				

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	1.92	2.26(0.11ha area willreclaimed and used forplantation, 2.15haconverted into waterreservoir)
Haul Road	0.00	0.08	0.00
Proposed Crusher	0.00	0.00	0.00
Green belt in Safety Zone	0.00	0.57	0.57
Dump with Parapet wall & Garland drain	0.00	0.26	Top soil will be used for plantation in first year and rest OB will be used road dressing and Backfilling
Total area in use	**0.00**	**2.83**	**2.83**
Balance unused area	2.83	0.00	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

The plantation will be done under the Campaign "Ek Ped Ma Ke Naam". Total number of saplings to be planted in the entire plan period will be 2420 saplings. Green Belt area will be developed along the periphery of mining lease area and haulage route, in consultation with local Authority (Plantation density considered is 912 plants on 0.57 Ha area or 2.5m X 2.5m grid pattern).

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	912	5700	0.57	Pipal Bargad Palash Fruit Bearing Trees Mango, Jackfruit, Guava, Jamun
	Haul Road	3.0 x 3.0	1332	1000Meter Approach Rd. Two row both side 1000/3=333*4=1332Plants		
	Reclaimed Area	2.5 x 2.5	176	1100	0.11	
2nd	Care&Protection	---	---	---	---	
3rd	Care &Protection	---	---	---	---	
4th	Care &Protection	---	---	---	---	
5th	Care &Protection	---	---	---	---	
Total			**2420**	**6800**	**0.68**	

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

- **Environment Management Budget**

PROPOSED FOR ENVIRONMENT MANAGEMENT COST						
S. No.	**Mitigative measures to protect Environment**	**Criteria Pollutants**	**Capital Cost (In Lakh)**	**Recurring cost (In Lakh)**	**Implementation Responsibility**	**Frequency and Method**
1.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine) One Water Tanker	Dust (PM 10 & PM 2.5)	24.0	4.9	Mining Mate supervised by Mine Manager	Daily Basis/Requirement Basis Register/Log book
	Solid waste management	Municipal Solid by workers	1.0	0.1		Record maintain & coordination with vendors
2.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges	No2,So2 & CO reduction Noise reduction	16.94	3.0	Mining Mate supervised by Mine Manager	Care taking@twice a week, Tree Inventory,

	and fences) @No. of plants 2420 x 700Rs.					
3.	Environment Monitoring (Air, Water, Noise& Soil Monitoring)	Deviation in Baseline	Nil	1.0	Out source to NABL Accredited Lab-Monitored by Mine Manager	Mine Manager Review of base line as per monitoring plan proposed
	TOTAL		**41.94**	**9.0**		

Environment Monitoring Plan (post operation)

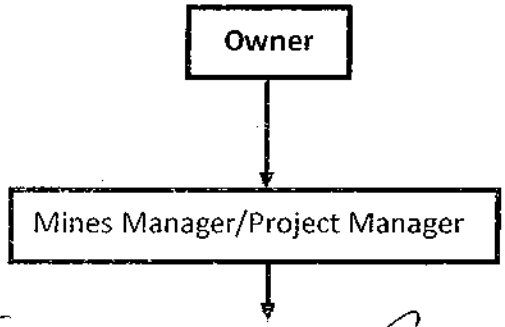
Monitoring Parameters and Frequency of Monitoring

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

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.

Environment Monitoring Cell



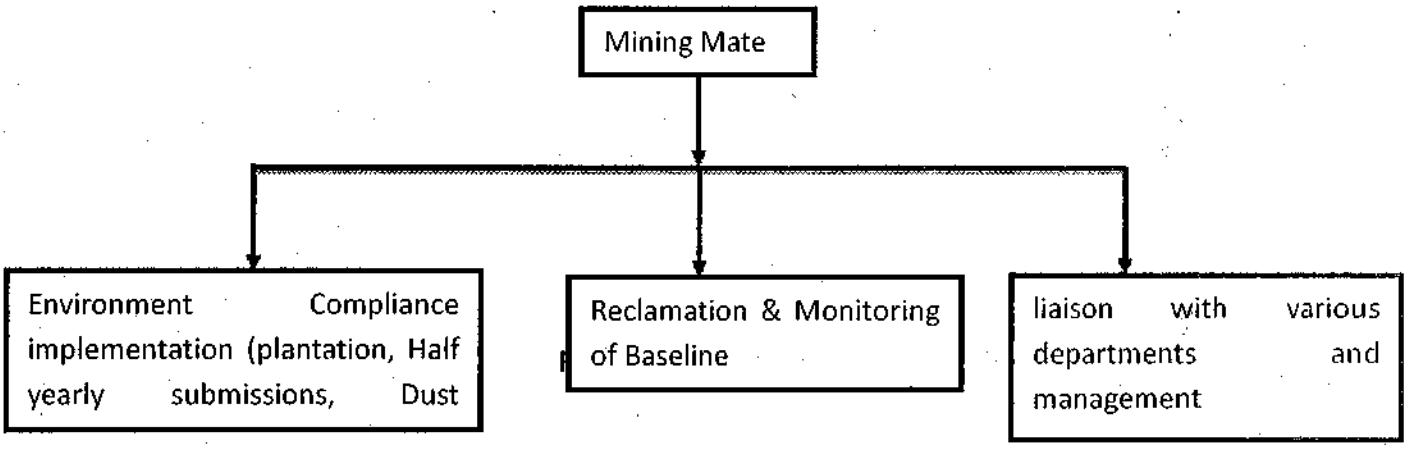


Fig. Chart for Environment Management Cell

Responsibility of Environment Management cell

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

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

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	Very Unlikely	Minor	20

		material, Exposure to Dust			
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

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

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to

Low-Risk Rank and hence the risk is "**Acceptable**"

Preventive Measures:

Slope Failure

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

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

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.

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

Undertaking submitted affirming:

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

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Binderi Bandarkola Stone Mine of M/s J.Z. Stone Works (Partner : Md. Jafar Abbas and Md. Zubair Alam) , Village : Binderi Bandarkola, Anchal : Borio, Distt. : Sahibganj, Jharkhand (2.83 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"Ek Ped Ma Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

****

2. **Parte Mako Stone Deposit of Partner : Shri Premandra Goyel and Others, Village : Parte Mako, Thana : Borio, Distt. : Sahibganj, Jharkhand (2.703 Ha).**

(Proposal no.: SIA/JH/MIN/ 526814 /2025)

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 25.03.2025.

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

Application for Environmental Clearance (EC).

Proposed Capacity: 1,89,066 Ton Per Annum OR 630 Ton Per Day

Project and Location Details:

S. No	Parameter		Details	
1	Project Name	:	Parte Mako Stone Deposit	
2	Applicant	:	Partner -Shri Premandra Goyel and Others	
3	Lessee Address	:	Village-Sakrigali, PO-Sakrigali, PS-TaljhariDistrict-Sahebganj, Jharkhand	
4	Lease Area	:	2.703 Ha.	6.68 Acres
5	Type of Land	:	Non-Forest, Raiyati Land	
6	Project Cost	:	30.0 Lakhs	
7	EMP Budget	:	Capital: 10.64 Lakhs	Recurring: 3.5 Lakhs per year
8	New or Expansion	:	New	
9	Mineable Reserves	:	18,65,550 Tonnes	
10	Mine Life	:	10 Years	
11	Man power	:	20 persons	
12	Water Requirement	:	Total water requirement is about 11.2 KLD= 0.70 KLD (Drinking & Domestic Uses) + 8.0 (Plantation) KLD + 2.5 KLD (Dust Suppression).	
13	Water Source	:	by Authorised hired water tankers	
14	DG Set / power	:	125 KVA (Temporary setup for Backup)	
15	Crusher	:	NA	
16	Nearest Water Body	:	Maharajpur lake is about 5.57 km in E Direction	
17	Nearest Habitation	:	Parte Mako Village is about 0.33Km in N direction.	
18	Nearest Rail Station	:	Sakrigali railway station at 6.5Km in North direction	
19	Nearest Airport	:	Purnia airport, Bihar at 69km in NWN direction.	
20.	Reserve Forest	:	Sahebganj P.F is about 1.84 in SSE Direction.	
21	Road & Highways	:	SH-18 Dumka-Sahibganj road at 1.5Km in West direction.	

CO-ORDINATES

S.No.	Latitude	Longitude	S.No.	Latitude	Longitude
1	25 11' 26.0023" N	87° 41' 05.6666" E	16	25° 11' 15.3726"N	87° 41' 14.0133" E
2	25 11' 25.6403" N	87° 41' 08.7371" E	17	25° 11' 15.1686"N	87° 41' 13.9607" E
3	25° 11' 25.6404" N	87° 41' 09.0947" E	18	25° 11' 14.8974"N	87° 41' 13.7063" E
4	25 11 25.6748" N	87° 41' 09.2806" E	19	25° 11' 15.6173"N	87" 41' 12.6336"E
5	25 11' 23.6737" N	87" 41' 11.2676"E	20	25° 11' 16.4979"N	87° 41' 11.2125" E
6	25 11 23.3178" N	87° 41' 11.3731" E	21	25 11' 17.6429" N	87° 41' 09.7666" E
7	25 11' 22.7624" N	87° 41' 11.1517" E	22	25° 11' 17.8517"N	87° 41' 09.3220" E
8	25" 11' 22.2844" N	87° 41' 11.0354" E	23	25° 11' 17.9903"N	87° 41'08.8519" E
9	25° 11' 21.9717" N	87° 41' 10.9313" E	24	25 11' 18.3187" N	87° 41' 08.9130" E
10	25 11 21.8714" N	87° 41' 11.2956" E	25	25° 11' 20.0272"N	87° 41' 09.0995" E
11	25 11 21.6944" N	87° 41' 12.8235" E	26	25 11 20.0259" N	87° 41' 10.2331" E
12	25° 11' 18.9746" N	87° 41' 13.4848" E	27	25° 11' 21.9008"N	87° 41' 10.6254" E
13	25° 11' 17.6010" N	87° 41' 13.5654" E	28	25 11' 23.8379"N	87° 41' 10.5152" E
14	25 11' 17.1256" N	87° 41' 13.6565" E	29	25° 11' 23.6527"N	87° 41' 05.7456" E
15	25° 11' 16.9183" N	87° 41' 13.7224" E			

LAND DETAILS

Khata no.	Plot no.
11 & 21	4 (P), 5 (P) & 11 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 198/M, dated 07.02.2025.
2	CO	:	The CO, Borio, Sahibganj vide memo no. 796/Ra., dated 14.10.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster and Grid	:	DMO, Sahibganj vide memo no. 239/M, dated 10.02.2025 certified that no other mining lease area exists within 500 meters radius

	certificate		from proposed project site and also certified that the proposed project site is outside of Redzone Grid 1, 3, 4 & 7.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2625, dated 09.10.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide letter no. 2591, dated 08.10.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Sahibganj has been certified vide memo no. 470/M, dated 18.03.2025 that this project is mentioned in approved DSR of Dumka District as a potential area (Page no. 197).
7	Gram Sabha	:	Gram Sabha conducted on 09.10.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 329/M, dated 19.02.2025.
9	Qualified Person	:	Shri Vidya Bhushan Mishra through e-mail dated 25.03.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM &Semi-Mechanised	
2	Lease Area	:	6.68 Acres / 2.703 Ha.	Life of Mine 10 years
3	Waste Generation	:	5 years= 54971 Cum	
4	Stripping Ratio(t/m^3)	:	1:0.14	
5	Working Days	:	300	
6	Benches: size & No.	:	6m x 6m	
7	Highest Elevation of lease Area	:	290m Amsl	
8	Lowest Elevation of lease Area	:	262m Amsl	
9	Ultimate Working Depth	:	228m RL	
10	Water Table	:	210 mRL	
11	Topography of Mine	:	The stone mine lease area situated in small hillock.	
12	Explosive Requirement	:	42.53 kg per day	
13	Diesel/Fuel requirement	:	260Litres per day	

Year wise Production Details

Year	Production of Stone in Cum	Production of stone In Tonnes	Over burden in cum	Intercalated Waste in Cum	Total Waste In Cum
1st Year	66690	180063	22490	3510	26000
2nd Year	67925	183398	5850	3575	9425
3rd Year	68913	186065	5980	3627	9607
4th Year	69407	187399	2600	3653	6253
5th Year	70025	189066	0	3686	3686
Total	**342960**	**925991**	**36920**	**18051**	**54971**

Land Use

Land Utilization	Existing Landuse (Ha.)	At the end of plan period (Ha.)	At Conceptual period (Ha)
Quarry	NIL	1.389	1.904 (0.287 ha area shall be backfilled, 0.909 ha area shall be left as water reservoir and 0.708 Ha.leftasdeadbenches).
Waste Dump	NIL	0.327	Nil (waste dump to be removed and backfilled)
Road	NIL	0.014	0.00
Safety Zone Plantation	NIL	0.799	0.799
Total	**0.000**	**2.529**	**2.703**
Unused Area	**2.841**	**0.174**	**0.0**
Total Lease Area	**2.703**		

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	2.0 x 2.0	1280	799	0.79	Neem, Peepal, Bargad, Jamun, Sakua **Fruit Bearing Trees**
	Haul Road	2.0 x 2.0	600	300 Mtr	---	
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	

5th	Care & Protection	---	---	---	---	Mango, Jackfruit, Amrud.
Total			**1880**		**0.79**	

- 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.	Mitigative measures to protect Environment	Capital Cost (in Lakh)	Recurring cost (in Lakh per year)
01.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine)	5.0	1.5
02.	Green belt development safety zone 7.5mtr and along the road (for each plants including hedges and fences) @ No. of plants 1880X300Rs.	5.64	1.0
03.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	Nil	1.0
Total		**10.64**	**3.5**

Additional Blasting cost

In consonance with NGT guidelines dated 21.07.2020, when blasting is involved a set back of a minimum of 200 meters should be left from the habitation area towards mine site. As per the letter issued by the CO, **Borio Sahebganj** vide letter no. 796, Date 14/10/2024, there is no habitation within 500m radius form the mining site.

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	Six Monthly

		water	
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

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.

Environment Monitoring Cell

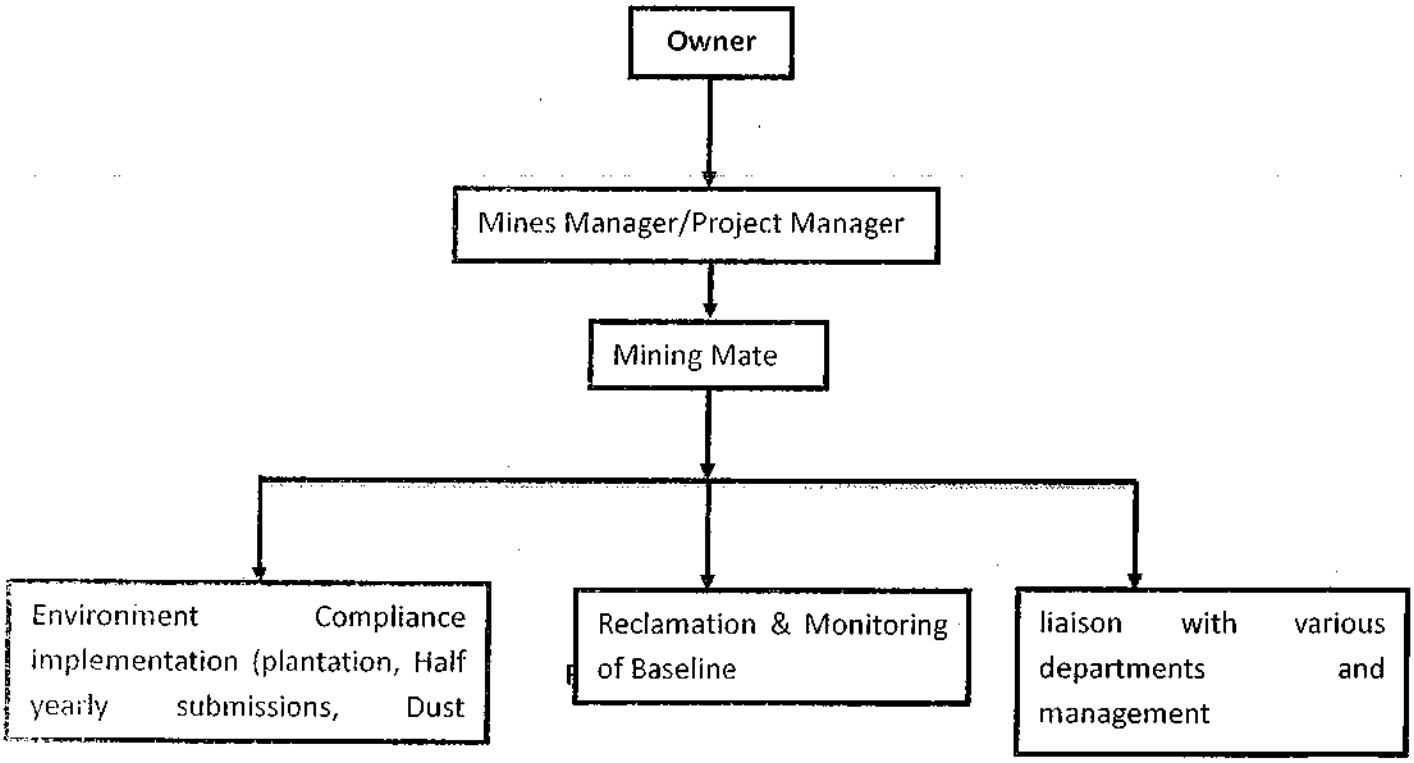


Fig. Chart for Environment Management Cell

Responsibility of Environment Management cell

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

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

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

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

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

Handling of Explosives

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

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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 Parte Mako Stone Deposit of Partner : Shri Premandra Goyel and Others, Village : Parte Mako, Thana : Borio, Distt. : Sahibganj, Jharkhand (2.703 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). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

****

3. Nachosai Stone Mine of M/s Shree Om Metal Pvt. Ltd., Village : Nachosai, Thana : Kowali, Distt. : East Singhbhum, Jharkhand (4.29 Ha).

(Proposal no.: SIA/JH/MIN/ 513455 /2025)

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

Application for Environmental Clearance (EC) (re-appraisal of Environment Clearance issued by DEIAA, East Singhbhum, Jamshedpur).

The project has been granted EC by DEIAA, East Singhbhum, Jamshedpur vide memo no. 3263/C, dated 26.08.2017.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, East Singhbhum which has been taken up for consideration on 25.03.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 1061/M, dated 30.12.2024 by DMO, East Singhbhum, Jamshedpur is within the permissible limit of EC.

The compliance report of previous EC has been issued by Sceintist –Cum- Section Head, Jamshedpur, JSPCB, Dhurwa, Ranchi vide memo no. Shree Om Metal/Gamharia/14/833, dated 21.03.2025.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.

The self certified compliance report has been submitted and also presented before the Committee.

EC Application for: Proposed Capacity: 1,60,094 Ton Per Annum or 59,294 Cum Per Annum or 534 Tonne Per Day.

Project and Location Details:

S. No	Parameter		Details		
1	Project Name	:	Nachosai Stone Mine M/s Shree Om Metal Pvt. Ltd.		
2	Lessee/Director	:	Shri Ramesh Kumar Agarwal		
3	Lessee Address	:	R/O Kachari Muhalla, Jugsalai, District East Singhbhum , Jharkhand.		
4	Lease Area	:	4.29 Ha.	Acres: 10.60 Acres	
5	Type of Land	:	Non-forest Land		
6	Project Cost	:	41.0 Lakhs		
7	EMP Budget	:	Capital: 20.02 Lakhs	Recurring: 7.0 Lakhs per year	
8	New or Expansion	:	DEIAA TO SEIAA (Re-appraisal of DEIAA EC)		
9	Mineable Reserves	:	4,76,738 Cum	12,87,195 Tonnes.	
10	Lease Period	:	Upto the lease period i.e. 30.01.2018 to 29.01.2028.		
11	Man power	:	18 persons		
12	Water Requirement	:	Total water requirement is about 7.0 KLD=1.0 KLD (Drinking & Domestic Uses) + 2.0 (Plantation) KLD + 4.0 KLD (Dust Suppression).		
13	Water Source	:	by Authorised hired water tankers		
14	DG Set / power	:	125 KVA (Temporary setup for Backup)		
15	Crusher	:	No		
16	Nearest Water Body	:	JuriyaNala is about 0.12 km in ENE direction.		
17	Nearest Habitation	:	Makundasai villageis about 0.05 Km in W direction.		
18	Nearest Rail Station	:	Haludpukurrailway station is about 7.16 km in N direction.		
19	Nearest Airport	:	Tatanagar Airport, Jamshedpur airportis about 30.9 km in N direction.		
20	Nearest Forest	:	**Forest**	**Distance**	**Direction**
			Jojodih R.F.	2.71	WSW
			Tuardungri R.F.	5.39	SSE
			Tiging P.F.	7.91	WNW
			Baliyachuya P.F.	13.74	E
			Jerai P.F.	10.85	W
21	Road & Highways	:	NH-220 is about 3.76 km in W direction.		

CO-ORDINATES

Pillar No.	Latitude	Longitude
1	22°32'00.74"N	86°07'53.60"E
2	22°32'00.14"N	86°07'53.92"E
3	22°31'52.75"N	86°07'51.96"E
4	22°31'52.58"N	86°07'51.56"E
5	22°32'02.62"N	86°07'47.05"E
6	22°32'13.20"N	86°07'48.21"E

LAND DETAILS

Khata no.	Plot no.
250	424

STATUTORY CLEARANCES

1	LOI / Lease docs	:	i. The Letter of Intent (LoI) has been issued by DMO, East Singhbhum, Jamshedpur vide letter no. 4267/Khanan, dated 24.12.2016. ii. Lease deed : 30.01.2018 to 29.01.2028.
2	CO	:	The CO, Potka, East Singhbhum vide letter no. 775, dated 04.10.2016 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan.
3	DMO	:	DMO, East Singhbhum, Jamshedpur vide letter no. 50/Khanan, dated 11.01.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Dalma Elephant Project vide letter no. 383, dated 06.03.2025 certified that the proposed project site is outside Eco Sensitive Zone of Dalma Wildlife Sanctuary.
5	DFO Forest Distance	:	Divisional Forest Officer, Jamshedpur Forest Division vide letter no. 3220, dated 16.08.2016 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.

6	DSR	:	This project is mentioned in approved DSR of East Singhbhum, Jamshedpur District (Sl. no. 25).
7	Gram Sabha	:	CO, Potka, East Singhbhum vide letter no. 774, dated 04.10.2016 informed that Gram Sabha conducted on 16.09.2016.
8	Scheme / Mine Plan Approval	:	i. Mine plan approved by Deputy Director, Mines, Daltonganj, Palamau vide memo no. 45, Dated 20.03.2017. ii. Mining scheme approved by Assistant Mining Officer, Ranchi vide memo no. 508/M, dated 20.04.2023.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, East Singhbhum, Jamshedpur vide memo no. 3263/C, dated 26.08.2017.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by Sceintist –Cum- Section Head, Jamshedpur, JSPCB vide memo no. Shree Om Metal/Gamharia/14/833, dated 21.03.2025.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2227224 /2018/680, dated 22.06.2018.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : i. JSPCB/RO/JSR/CTO-3250452 /2018/122, dated 22.12.2018. ii. JSPCB/RO/JSR/CTO-10327851 /2021/66, dated 20.04.2021. iii. JSPCB/RO/JSR/CTO-15949768 /2023/39, dated 17.05.2023.
13	Production Report	:	Production report issued by DMO, East Singhbhum, Jamshedpur vide memo no. 1061/M, dated 30.12.2024.
14	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mining scheme has been prepared by him.

Working Details

1	Mining Method	:	OCM &Mechanised	
2	Lease Area	:	10.60 ACRES / 4.29 Ha.	Life of Mine – 8.0 years
3	Waste Generation	:	5 years– 3782 Cum	
4	Stripping Ratio(t/m^3)	:	1:0.0	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Highest Elevation of lease Area	:	211m MSL	

8	Lowest Elevation of lease Area		181m MSL
9	Ultimate Working Depth	:	30m
10	Water Table	:	168 Amsl
11	Topography of Mine	:	The lease area is almost flat land with two hillocks.
12	Explosive Requirement	:	24 kg per hole
13	Diesel/Fuel requirement		548 Litres per day

Year wise Production Details

Year	Production (Tonnes)	Removal of Gritty Soil & Weathered Rock (Cum)	Grade
2023-24	160002	2541	Construction and Road
2024-25	160072	1241	Construction and Road
2025-26	159894	00	Construction and Road
2026-27	160094	00	Construction and Road
2027-28	160029	00	Construction and Road
Total	**800091**	**3782**	

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	0.18	2.42	3.12 (rain water harvesting)
Haul Road	0.01	0.02	0.00
Proposed Crusher	0.00	0.00	Not proposed
Green belt in Safety Barrier	1.17	1.17	1.17
Dump with parapet wall & garland drain	0.12	0.08	waste dump to be removed and used road dressing and plantation
Total area in use	**1.48**	**3.69**	**4.29**
Balance unused area	2.81	0.60	0.00
Balance unused area	0.00	0.00	0.00
Total existing Area	**4.29**	**4.29**	**4.29**

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	1872	11700	1.17	Neem, Bargad, Peepal, Mahua, Palas Mango, Jackfruit, Guava, Black Plum etc.
	Haul Road	3.0 x 3.0	132	100M ApproachRoad 100/3= 33Plants 33x4row=132Plant		
2nd	Care &Protection	---	---	---	---	
3rd	Care &Protection	---	---	---	---	
4th	Care &Protection	---	---	---	---	
5th	Care &Protection	---	---	---	---	
Total			**2004**	**11700**	**1.17**	

- 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	Mitigative measures to protect Environment	Capital Cost (n Lakh)	Recurring cost (In Lakh)
01.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine)	10.0	4.0
02.	Green belt development safety zone 7.5mtr and along the road (for each plants including hedges and fences) @ No. of plants 2004 x 500Rs.	10.02	2.0
03.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	Nil	1.0
TOTAL		**20.02**	**7.0**

Environment Monitoring Plan (Operation Phase)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of	Frequency of

		Locations	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

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.

Environment Monitoring Cell

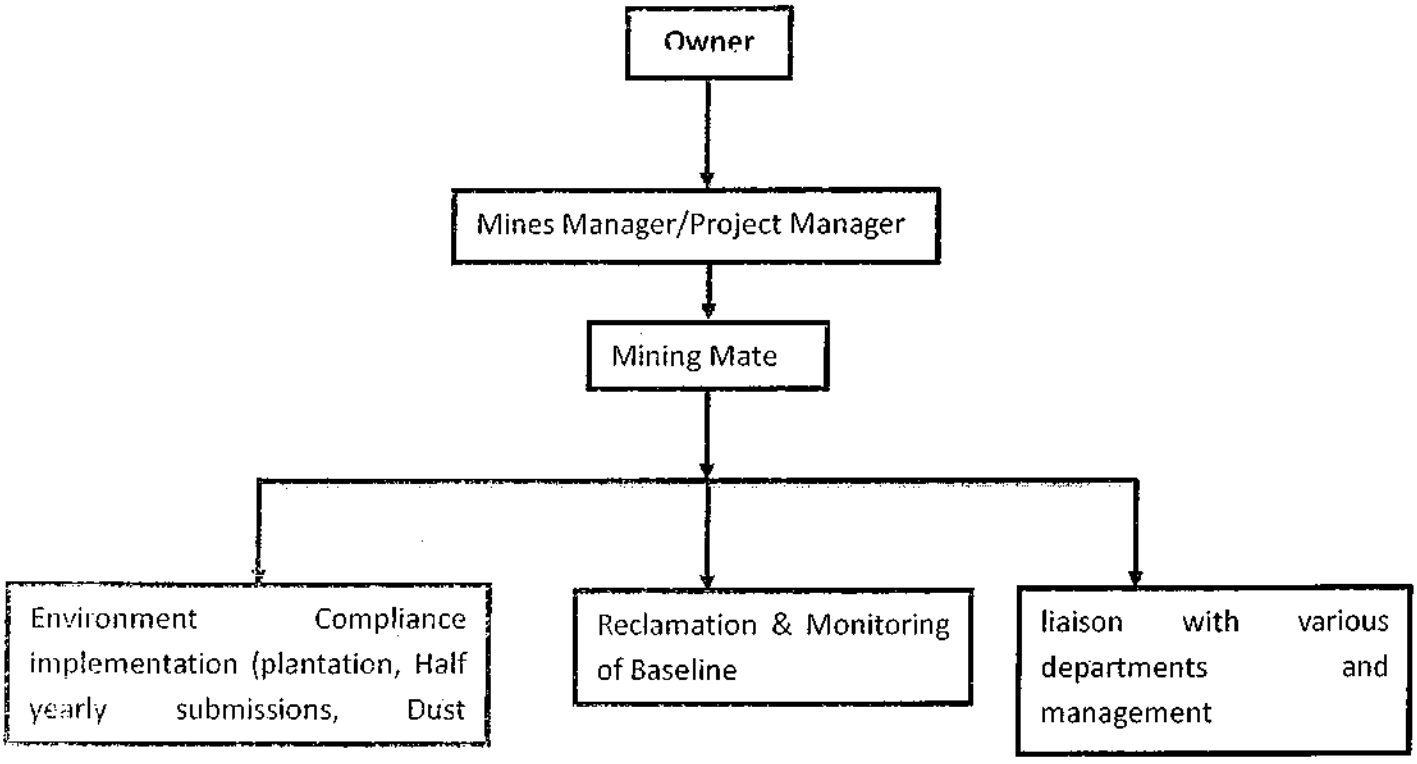


Fig. Chart for Environment Management Cell

Responsibility of Environment Management cell

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

- Responsibilities:
  - ✓ Implement environmental control measures.
  - ✓ Oversee reclamation planning and management.
  - ✓ Manage air and water pollution control.
  - ✓ Liaise with state and central statutory agencies.
  - ✓ Develop greenbelt areas.
- Performance Review: Assess corporate environmental performance and report non-compliances.
- Remedial Actions: Suggest and implement actions for exceeding pollution limits.
- Coordination:

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

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

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

Handling of Explosives

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

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

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

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

Health Hazards

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

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

Accident at Site

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

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- 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 Nachosai Stone Mine of M/s Shree Om Metal Pvt. Ltd., Village : Nachosai, Thana : Kowali, Distt. : East Singhbhum, Jharkhand (4.29 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. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.
II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"EkPed Ma KeNaam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.
III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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1. **Keso – 13 Sand Ghat in the river bed of Keso River of M/s Jharkhand State Mineral Development Corporation Ltd. (JSMDC Ltd.), Mouza : Badulia and Beladih, Block : Jainagar & Markacho, Distt. : Koderma, Jharkhand (1.74 Ha).**

(Proposal no.: SIA/JH/MIN/ 518630 /2025)

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 25.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 20,880 Cum per Annum/32781.6 Tonnes per Annum or 104.4 Cum per Day/163.90 Tonnes per Day

PROJECT AND LOCATION DETAILS:

S.No.	Parameter	Details	
1	Project Name	Keso-13 Sand Ghat	
2	Proponent:	M/s Jharkhand State Mineral Development Corporation Ltd. (A Govt. of Jharkhand Enterprises) Shri Karun Kumar Chandan(In-Charge-Sand)	
3	Lessee Address	Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand)	
4	Lease Area	1.74Ha.or 4.30 Acre	
5	Type of Land	Non-Forest Government Land (River Bed)	
6	Project Cost	Rs 26.67 Lakhs	
7	EMP Budget	Capital: Rs 23.32 Lakhs	**Recurring:** 4.3 lakhs / year
8	New or Expansion	New	
9	Mineable Reserves for	20,880 Cum & 32,781.6 Tonnes	

	1st year & subsequent year 60% of Replenished quantity	
10	Mine Life	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.
11	Man power	55
12	Water Requirement	Total water requirement is about 14.437 KLD= 2.475 KLD (Drinking Water & Domestic Uses, 55 persons @45 LPCD) + 4.0 KLD (Water sprinkling) + 7.962KLD (plantation).
13	Water Source	By Authorised hired tankers
14	DG Set / power	NA
15	Crusher	NA
16	Nearest Water Body	Keso River (project site)
17	Nearest Habitation	Nawadih, at 0.5 KM in WSW direction.
18	Nearest Rail Station	Parsabad Railway Station is about 4.19 Km in SSW direction.
19	Nearest Air Port	Gaya International Airport is about 92.6 Km in WNW direction.
20	Nearest Forest	Name of Places: Khijursota PF — Distance (Km): 4.66 — Direction: S Bhikhnadih PF — 6.5 — SW Digwar PF — 4.9 — SE
21	Road Highways	Markacho - Barmasia Road about 0.59 in ESE direction.
22	Seismic zone	Zone III as per seismic zone map of India

CO-ORDINATES

Pillar No.	Latitude	Longitude	Pillar No.	Latitude	Longitude
1	24°20'29.115"N	85°45'16.453"E	12	24°20'42.924"N	85°45'17.306"E
2	24°20'28.838"N	85°45'16.511"E	13	24°20'42.009"N	85°45'16.672"E
3	24°20'29.135"N	85°45'16.229"E	14	24°20'40.935"N	85°45'16.316"E
4	24°20'30.009"N	85°45'15.527"E	15	24°20'39.983"N	85°45'16.342"E
5	24°20'31.893"N	85°45'14.876"E	16	24°20'38.598"N	85°45'16.289"E
6	24°20'34.378"N	85°45'14.122"E	17	24°20'37.343"N	85°45'16.900"E
7	24°20'37.873"N	85°45'14.499"E	18	24°20'36.311"N	85°45'16.726"E
8	24°20'40.340"N	85°45'15.355"E	19	24°20'35.207"N	85°45'16.267"E
9	24°20'43.029"N	85°45'16.109"E	20	24°20'33.798"N	85°45'15.644"E
10	24°20'45.759"N	85°45'17.137"E	21	24°20'32.250"N	85°45'15.398"E

11	24°20'44.173"N	85°45'17.488"E	22	24°20'30.440"N	85°45'16.053"E

LAND DETAILS

Mouza	Khata no.	Plot no.
Badulia	24	1, 286, 925 & 916
Beladih	01	1 & 904

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, Jainagar (Koderma) vide letter no. : 314, dated 27.04.2023 and CO, Markacho (Koderma) vide letter no. 213, dated 24.04.2023 have mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Koderma vide memo no. 792/M, dated 08.05.2024 certified that the 01 other Balughat (2.36 Ha) exists within 500 m radius from proposed project site and total area is 4.10 Ha.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. : 1781, dated 13.08.2024 certified that the proposed project site is outside Eco Sensitive Zone of Koderma Wildlife Sanctuary.
5	DFO Territorial	:	DFO, Koderma Forest Division vide letter no. 756, dated 19.03.2025 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 Koderma (Sl. No. 13 & 28).
7	Gram Sabha	:	BDO, Markacho vide letter no. 548, dated 08.05.2024 informed that Gram Sabha conducted on 29.04.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Koderma vide memo no. 752/M, dated 03.05.2024.
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	:	1.74Ha
3	Waste Generation	:	No waste generation
4	Stripping Ratio	:	0:0
5	Working Days	:	200 day
6	Benches: size & No	:	NA
7	Ground Level Elevation	:	NA
8	Ultimate Working Depth	:	2.0 m
9	Water Table	:	NA
10	Topography of Mine	:	Area represents gently sloping land.
11	Explosive Requirement	:	None. No blasting required
12	Diesel/Fuel Requirement	:	Not required for mining.

PRODUCTIONDETAILS

Year	Total area (Ha)	Thickness (m)	Average Replenishment Rate As per Approved DSR	Volume (cum)	Tonnage Factor As per Approved DSR	Quantity in tonne
1st	1.044	2.0	60%	20,880	1.57	32781.6

Every year replenishment study (pre-monsoon & Post-Monsoon) will be carried out and 60% of production will be done as per Sustainable Sand Mining guidelines, 2016 & 2020.

LAND USE

GM Land	Area in Hectares
Private Land	Nil
Proposed Mining Area	1.044
Safety Zone	0.07
Unused Area	0.626
Total Area	**1.74**

ENVIRONMENT MANAGEMENT5

GREEN BELT DEVELOPMENT

Village	No of plants	Area consider for plantation (length of approach road) KM	Species of plant	Expected Survival Rate (%)
Keso-13 Sand Ghat	2664	2.0 KM	Mango, Jungle	

Total area of 1.74 ha in River- Keso		Approach Road, 2000/3 = 666 Plants 666 *4 = 2664 plants (Two Row Plantation along The both side of the raod)	jalebi, Sagon, Bargad, Semal, Neem, Pipal, Sheesham etc	80%

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

Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST			
S. No.	Mitigative measures to protect Environment	Capital Cost (In Lakh)	Recurring cost (In Lakh)
1.	Water Sprinkling/Air pollution control(Dust Suppression along haulage road and mine)	20.0	2.5
2.	Green belt development on approach the road (for each plant including hedges and fences) @No. of plants 2664 x 500 Rs.	13.32	1.0
3.	Environment Monitoring (Air, Water, Noise& Soil Monitoring)	Nil	0.80
	TOTAL	**33.32**	**4.3**

Environment Monitoring Plan (post operation)

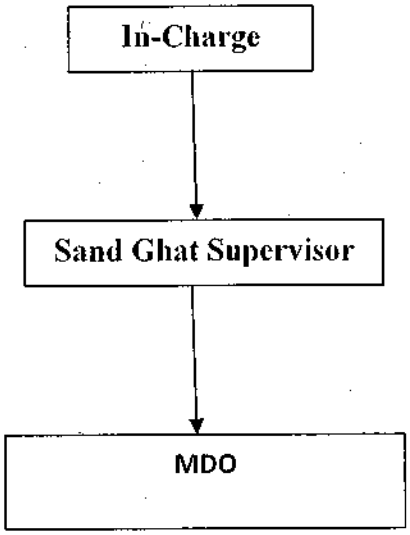
Monitoring Parameters and Frequency of Monitoring

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	2 station	Six Monthly

	to check the soil fertility, porosity, texture, water holding capacity, etc.		

Solid Waste Management

•No solid waste is generated during the course of mining.



Organization Structure

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.

OPERATION OF DIESEL EQUIPMENT'S –They generate Noxious gases. It will be ensured that all transport vehicles would be repaired & maintainedregularly.

LOADING OF PRODUCT ON TIPPERS –Water will be sprinkled on blasted Sand mass before they are loaded to trucks fortransport.

MOVEMENT OF TIPPERS ON ROAD –Movement of tippers on road generate dust. For mitigation of this pollution following measures will betaken

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

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DICUSSED 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 haulageroad
- Appropriate navigational signs informing sensitive area like school andhabitation
- Regular maintenance of thevehicles.

DUST GENERATION

- No drilling involved
- Dust mass would be supplied toworkers
- Regular sprinkling of water onroad

NOISE GENERATION

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stockyard. 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 timeonly.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher isnoise.
- Regular repair and maintenance oftippers/tractors.
- Plantation on both sides of haulageroad.
- Tippers having PUC certified will be allowed to be used for sandtransportation.

HEALTH HAZARDS

During digging and handling of sand i.e. loading, transportation and unloading of sand, workers 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 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 ofdust.
- All transportation within the mine lease area should be carried out directly under the supervision and control ofmanagement.
- 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/spottingoperating.
- Only trained drivers will behired.

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.
m. Transportation from the river bed to the Urwan -Kanko Jainagar Road 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 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 Keso – 13 Sand Ghat in the river bed of Keso River of M/s Jharkhand State Mineral Development Corporation Ltd. (JSMDC Ltd.), Mouza : Badulia and Beladih, Block : Jainagar & Markacho, Distt. : Koderma, Jharkhand (1.74 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). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. The Environmental Clearance granted for lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.

IV. Replenishment study shall be conducted during pre-monsoon and post monsoon every year and study report have to be submitted to SEIAA / SEAC, Jharkhand. The production shall be restricted to 60% of the replenished quantity or the proposed quantity in the mine plan, which ever is less.

V. Suitable plant species of not less than 2 M height to be planted in area equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

VI. Dedicated water tanker to be provided for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VII. Pre-employment Occupational health checkup for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to submitted along with 6 monthly compliance.

VIII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted within 6 monthly compliance report with Geo-Tagged photographs.

IX. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted within 6 monthly compliance report.

X. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

XI. Project Authority will ensure that personal protective equipments such as protective clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel's.

XII. River Sand Mining shall not be done in rainy Season (mid June to mid October of each calendar year).

XIII. Dept. of Mines & Geology, Govt. of Jharkhand shall keep a strict vigil in the compliance of relevant provisions of applicable Jharkhand Minerals (Prevention of illegal mining, Transportation and Storage) Rule 2017 and its amendment especially scientific execution of mining plan (as approved by they themselves) and report violations if any is found as well as action taken for the same.

XIV. Project Proponent shall submit (to the SEIAA, Jharkhand, Regional Office of MoEF&CC at Ranchi, Jharkhand State Pollution Control Board) six monthly compliance report with evidence of the conditions within a fortnight after the end of every six month till validity period of Environmental Clearance.

XV. The project proponent before starting any activity / preparation of ground, on the leased area shall demarcate his lease hold by RCC pillars erected at the cost of lease holder after certification of the mining officer. On each pillar Geo-Coordinate and fore bearing / back bearing shall be written with permanent paint mark as described in the mining plan. All the pillars should remain intact at same geo-coordinate. Establishment / labeling of Benchmark at each pillars or ground control points.

XVI. Extraction of sand beyond annual production capacity is not permitted.

XVII. The Project Proponent should undertake the sand mining limited to 03 meter (three meter) depth by exclusively manual method.

XVIII. The stacking area of mined-out sand which shall be situated near the mining site within a fenced area from all sides to avoid being spread in the nearby areas by high winds and the height of stacking should not exceed 2 meter. Transportation shall be confined to day time only that is from sunrise to sunset, to avoid inconvenience to local population in any manner.

XIX. Mining activity shall not be done for mine lease where mining can cause danger to site of flood protection works, places of cultural, religious, historical and archaeological importance.

XX. Project Proponent shall submit the annual replenishment report certified by an authorized agency.

XXI. No labour camp shall be allowed in riverbed.

XXII. Provision shall be made for housing labour with all necessary infrastructure and facilities (outside mining Block and river-bed) such as fuel for cooking, toilets / mobile toilets, safe drinking water, First-Aid facilities, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

XXIII. Labour & Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers shall be undertaken periodically to observe any adverse health impact due to exposure to dust and take corrective measures, if needed.

XXIV. The Project Proponent shall make arrangements for safe drinking water, first aid facility along with anti-venom injection, in case of emergency for the workers.

XXV. Sand and gravel may be extracted across the entire active channel during the dry season.

XXVI. Abandoned stream channels on the terrace and inactive floodplains be preferred rather than active channels and their deltas and flood plains. The stream should not be diverted to form the inactive channel.

XXVII. Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.

XXVIII. Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.

XXIX. Sand and gravel shall not be extracted up to a distance of 1 kilo meter (1 km.) from major bridges and highways on both sides, of five times (5x) of the span (x) of a bridge / public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.

XXX. Sand and gravel could be extracted from the downstream of the sand bar at river bends.

XXXI. Mining depth should be restricted to 3 meters and distance from the band should be $1/4^{th}$ of river width and should not be less than 7.5 meters.

XXXII. A buffer distance / unmined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed / prescribed by the regulatory authority shall be maintained.

XXXIII. River bed sand mining shall be restricted within the central $3/4^{th}$ width of the river/rivulet of 7.5 meters (inward) from river banks but up to 10% of the width of the river, as the case may be. Regulating authority while regulating the zone of river bed mining shall ensure that the objective to minimize the effects of riverbank erosion and consequential channel migration are achieved to the extent possible. In general, the area for removal of minerals shall not exceed 60% of the mine lease area, and any deviation of relaxation in this regard shall be adequately supported by the scientific report.

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5. **Keso – 15 Sand Ghat in the river bed of Keso River of M/s Jharkhand State Mineral Development Corporation Ltd. (JSMDC Ltd.), Mouza : Ambadih & Dasaro Khurd, Block : Jainagar & Markacho, Distt. : Koderma, Jharkhand (3.21 Ha).**

(Proposal no.: SIA/JH/MIN/ 518322 /2025)

The PA vide letter no. 400, dated 25.03.2025 requested for withdrawal of the proposal.

Hence, the Committee recommends the project may be delisted.

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6. **Jojoda & Tamdel-II Sand Ghat in the river bed of Koel River of M/s Jharkhand State Mineral Development Corporation Ltd. (JSMDC Ltd.), Mauza : Jojoda & Tamdel-II, Block : Gudri, Thana : Chakradharpur, Distt.: West Singhbhum, Jharkhand (13.90 Ha).**

(Proposal no.: SIA/JH/MIN/529963/2025)

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 25.03.2025.

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

Application for Environmental Clearance (EC) after ToR.

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 115th meeting held on 23 - 27.07.2024 and SEIAA, Jharkhand has approved the ToRs in 115th meeting held on 06th & 07th August, 2024. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/3195/2024/210, dated 13.08.2024. The final EIA / EMP submitted by PP to SEAC on 20.03.2025.

EC Application for: Proposed Capacity- 63,261cum/annum or 1,65,111TPA (Dry Basis).

PROJECT AND LOCATION DETAILS:

S.No.	Parameter	Details	
1	Project Name	JojodaTamdel-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.69.23lakhs	
7	EMP Budget	**Capital**: Rs.89.51 Lakhs	**Recurring**: 13.36lakhs / 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 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	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	KoelRiver (Project Site)
17	Nearest Habitation	Tamdel Village, at 1.02 KM in ENE direction.
18	Nearest Rail Station	GoilkeraRailway station is about 25.5 Km in ESE direction Posita Railway station is about 19.32 Km in S direction
19	Nearest Air Port	Ranchi Airport is about 81.62 Km in N direction.
20	Nearest Forest	See table below
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 III as per seismic zone map of India

Name of Places	Distance (Km)	Direction
Girga P.F	2.65	NNE
Pumapani P.F.	6.5	NW
Morang P.F.	9.6	S
Sadamchapar P.F.	6.8	SE
Chatapahar P.F.	9.9	WSW
Bera R.F.	11.13	ENE

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. JSMDC Ltd. 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	Public Hearing	:	Public Hearing conducted on 27.01.2025.
10	Baseline Study	:	1st December, 2023 to 29th February, 2024.
11	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	:	13.90Ha
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	:	250m AMSL to 249m AMSL
8	Ground Level Elevation	:	153.6 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.

Status of Proposal for Environmental Clearance

S.No.	Project Activity	Date/Duration
1.	Submission of Application – Screening	22/07/2024
2.	SEIAA meeting (for ToR approval) - Scoping	25-07-2024
3.	ToR Letter issued by SEIAA, Jharkhand	21/08/2024
4.	Baseline monitoring & data collection	Dec 2023-Feb 2024
5.	Public Hearing conducted on – Public Consultation	27/01/2025
6.	Final EIA/EMP SEAC meeting- Appraisal	25/03/2025

PRODUCTIONDETAILS

Year	Total Area(Ha)	Thickness(m)	Average Replenishment Rate	Volume(cum) 60%	Tonnage factor As per Approved DSR	Quantity in ton 60%
1st	10.65	0.99	60%	63,261	2.61	1,65,111

LAND USE

GM Land	Area in Hectares
Private Land	0.00
Proposed Mining Area (Govt. Bhu-jal Land)	13.90
Company land	00
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	6,52,000
2	Road Maintenance & Monitoring budget	Prepare & Maintenance of approach road (Max. Road length 7 Km, Width 4.0m) @200Rs. /Sq. Meter.	35,00,000	3,50,000
		Monitoring twice a year (Air, Soil, Water & Noise twice a year)	-	1,00,000
3	Plantation Scheme	Green Belt Development along the road (for eac plants including hedges and fences) 9332 Plants @ INR 500/Plant	46,66,000	2,33,300
4	Solid Waste	Bins 10 nos.	5,000	1,000

	Management	Transport of Dry Waste/Wet Waste	-	
5	Commitments made during public hearing		7,50,000	00.0
Total EMP Budget			**89,51,000**	**13,36,300**

Need Based AssesmentCSR/CER

S.No.	Particulars	Budgets
1	Infrastructure development (in any nearby school) i.e., boundary wall, furniture, computers etc. identified school GOVT. Middle School Sode Rania	1,40,000

Minutes of Public Hearing Commitment

Sl. No.	Activities as per Public Hearing	Year of Implementation & Budgets					Total
		1st Year	2nd Year	3rd Year	4th Year	5th Year	
1	Health Check-up/Dental Check-up	1,00,000	1,00,000	1,00,000	1,00,000	1,00,000	5,00000
2	For water facility for the villagers (Repairing of non-functional hand pumps in the villages.)	50,000	50,000	50,000	50,000	50,000	2,50,000
	Total	1,50,000	1,50,000	1,50,000	1,50,000	1,50,000	7,50,000

Environment Monitoring Plan (post operation)

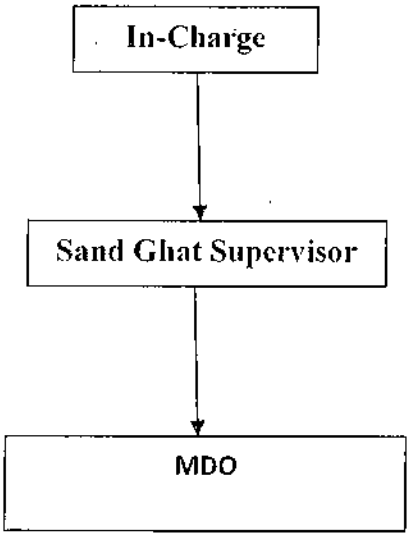
Monitoring Parameters and Frequency of Monitoring

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.



Organization Structure

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.

OPERATION OF DIESEL EQUIPMENT'S –They generate Noxious gases. It will be ensured that all transport vehicles would be repaired & maintainedregularly.

LOADING OF PRODUCT ON TIPPERS –Water will be sprinkled on blasted Sand mass before they are loaded to trucks fortransport.

MOVEMENT OF TIPPERS ON ROAD –Movement of tippers on road generate dust. For mitigation of this pollution following measures will betaken

- . Regular water sprinkling on Haul road by using watertankers.
- Regular repair of Haulroad

- All Trucks carrying Sand outside lease area will have PUCcertificate.
- Transport tippers/traders moving on public road will be covered with tarpaulin.

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DICUSSED 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 haulageroad
- Appropriate navigational signs informing sensitive area like school andhabitation
- Regular maintenance of thevehicles.

DUST GENERATION

- No drilling involved
- Dust mass would be supplied toworkers
- Regular sprinkling of water onroad

NOISE GENERATION

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stockyard. 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 timeonly.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher isnoise.
- Regular repair and maintenance oftippers/tractors.
- Plantation on both sides of haulageroad.
- Tippers having PUC certified will be allowed to be used for sandtransportation.

HEALTH HAZARDS

During digging and handling of sand i.e. loading, transportation and unloading of sand, workers 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 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 ofdust.
- All transportation within the mine lease area should be carried out directly under the supervision and control ofmanagement.
- 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/spottingoperating.
- Only trained drivers will behired.

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 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 Jojoda & Tamdel-II Sand Ghat in the river bed of Koel River of M/s Jharkhand State Mineral Development Corporation Ltd. (JSMDC Ltd.), Mauza : Jojoda & Tamdel-II, Block : Gudri, Thana : Chakradharpur, Distt.: West Singhbhum, Jharkhand (13.90 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"Ek Ped Ma Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. The Environmental Clearance granted for lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.

IV. Replenishment study shall be conducted during pre-monsoon and post monsoon every year and study report have to be submitted to SEIAA / SEAC, Jharkhand. The production shall be restricted to 60% of the replenished quantity or the proposed quantity in the mine plan, which ever is less.

V. Suitable plant species of not less than 2 M height to be planted in area equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

VI. Dedicated water tanker to be provided for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VII. Pre-employment Occupational health checkup for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to submitted along with 6 monthly compliance.

VIII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted within 6 monthly compliance report with Geo-Tagged photographs.

IX. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted within 6 monthly compliance report.

X. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

XI. Project Authority will ensure that personal protective equipments such as protective clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel's.

XII. River Sand Mining shall not be done in rainy Season (mid June to mid October of each calendar year).

XIII. Dept. of Mines & Geology, Govt. of Jharkhand shall keep a strict vigil in the compliance of relevant provisions of applicable Jharkhand Minerals (Prevention of illegal mining, Transportation and Storage) Rule 2017 and its amendment especially scientific execution of mining plan (as approved by they themselves) and report violations if any is found as well as action taken for the same.

XIV. Project Proponent shall submit (to the SEIAA, Jharkhand, Regional Office of MoEF&CC at Ranchi, Jharkhand State Pollution Control Board) six monthly compliance report with evidence of the conditions within a fortnight after the end of every six month till validity period of Environmental Clearance.

XV. The project proponent before starting any activity / preparation of ground, on the leased area shall demarcate his lease hold by RCC pillars erected at the cost of lease holder after certification of the mining officer. On each pillar Geo-Coordinate and fore bearing / back bearing shall be written with permanent paint mark as described in the mining plan. All the pillars should remain intact at same geo-coordinate. Establishment / labeling of Benchmark at each pillars or ground control points.

XVI. Extraction of sand beyond annual production capacity is not permitted.

XVII. The Project Proponent should undertake the sand mining limited to 03 meter (three meter) depth by exclusively manual method.

XVIII. The stacking area of mined-out sand which shall be situated near the mining site within a fenced area from all sides to avoid being spread in the nearby areas by high winds and the height of stacking should not exceed 2 meter. Transportation shall be confined to day time only that is from sunrise to sunset, to avoid inconvenience to local population in any manner.

XIX. Mining activity shall not be done for mine lease where mining can cause danger to site of flood protection works, places of cultural, religious, historical and archaeological importance.

XX. Project Proponent shall submit the annual replenishment report certified by an authorized agency.

XXI. No labour camp shall be allowed in riverbed.

XXII. Provision shall be made for housing labour with all necessary infrastructure and facilities (outside mining Block and river-bed) such as fuel for cooking, toilets / mobile toilets, safe drinking water, First-Aid facilities, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

XXIII. Labour & Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers shall be undertaken periodically to observe any adverse health impact due to exposure to dust and take corrective measures, if needed.

XXIV. The Project Proponent shall make arrangements for safe drinking water, first aid facility along with anti-venom injection, in case of emergency for the workers.

XXV. Sand and gravel may be extracted across the entire active channel during the dry season.

XXVI. Abandoned stream channels on the terrace and inactive floodplains be preferred rather than active channels and their deltas and flood plains. The stream should not be diverted to form the inactive channel.

XXVII. Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.

XXVIII. Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.

XXIX. Sand and gravel shall not be extracted up to a distance of 1 kilo meter (1 km.) from major bridges and highways on both sides, of five times (5x) of the span (x) of a bridge / public civil structure (including water intake points) on up-stream side and

ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.

XXX. Sand and gravel could be extracted from the downstream of the sand bar at river bends.

XXXI. Mining depth should be restricted to 3 meters and distance from the band should be $1/4^{th}$ of river width and should not be less than 7.5 meters.

XXXII. A buffer distance / unmined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed / prescribed by the regulatory authority shall be maintained.

XXXIII. River bed sand mining shall be restricted within the central $3/4^{th}$ width of the river/rivulet of 7.5 meters (inward) from river banks but up to 10% of the width of the river, as the case may be. Regulating authority while regulating the zone of river bed mining shall ensure that the objective to minimize the effects of riverbank erosion and consequential channel migration are achieved to the extent possible. In general, the area for removal of minerals shall not exceed 60% of the mine lease area, and any deviation of relaxation in this regard shall be adequately supported by the scientific report.

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7. **Anandpur Sand Ghat in the river bed of Koel River of M/s Jharkhand State Mineral Development Corporation Ltd. (JSMDC Ltd.), Mauza : Anandpur, Anchal : Anandpur, Thana : Manoharpur, Distt.: West Singhbhum, Jharkhand (12.1 Ha).**

(Proposal no.: SIA/JH/MIN/530085/2025)

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 25.03.2025.

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

Application for Environmental Clearance (EC) after ToR.

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 115^{th} meeting held on 23 - 27.07.2024 and SEIAA, Jharkhand has approved the ToRs in 115^{th} meeting held on 06^{th} & 07^{th} August, 2024. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/3199/2024/205, dated 13.08.2024. The final EIA / EMP submitted by PP to SEAC on 20.03.2025.

EC 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 31.28 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	
10	Mine Life	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.	
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.

			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, 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. 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. 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	Public Hearing	:	Public Hearing conducted on 30.02.2025.
10	Baseline Study	:	1st December, 2023 to 29th February, 2024.
11	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	Volume(cum) 60%	Tonnage factor As per Approved DSR	Quantity in ton 60%
1st	8.13	0.98	60%	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
	Commitments made during public hearings		7,50,000	-
Total EMP Budget			31,28,000	5,08,600

NEED BASED ASSESMENT CSR/CER

S.No.	Particulars	Budgets
1	Infrastructure development (in any nearby school) i.e., boundary wall, furniture, computers etc. identified High school Rajanandpur - High school	1,10,000

Minutes of Public Hearing Commitment

Sl. No.	Activities as per Public Hearing	Year of Implementation & Budgets					Total
		1st Year	2nd Year	3rd Year	4th Year	5th Year	
1	Health Check-up/Dental Check-up	1,00,000	1,00,000	1,00,000	1,00,000	1,00,000	5,00000
2	For water facility for the villagers (Repairing of non-functional hand pumps in the villages.)	50,000	50,000	50,000	50,000	50,000	2,50,000
	Total	1,50,000	1,50,000	1,50,000	1,50,000	1,50,000	7,50,000

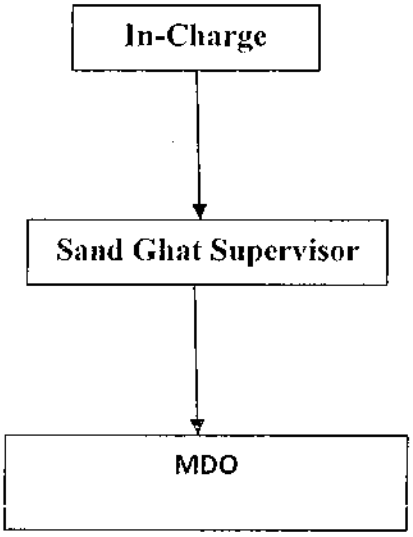
Environment Monitoring Plan (post operation)

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.



Organization Structure

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 excavated 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 DICUSSED BELOW:

Road accidents

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

Preventive Measures;

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

Dust generation

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

Noise Generation

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

Preventive measures

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

Health Hazards

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

Measures

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

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

Accident at Site

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

Preventive measures

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

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

Transportation

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

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

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
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 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 Anandpur Sand Ghat in the river bed of Koel River of M/s Jharkhand State Mineral Development Corporation Ltd. (JSMDC Ltd.), Mauza : Anandpur, Anchal : Anandpur, Thana : Manoharpur, Distt.: West Singhbhum, Jharkhand (12.1 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). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. The Environmental Clearance granted for lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.

IV. Replenishment study shall be conducted during pre-monsoon and post monsoon every year and study report have to be submitted to SEIAA / SEAC, Jharkhand. The production shall be restricted to 60% of the replenished quantity or the proposed quantity in the mine plan, which ever is less.

V. Suitable plant species of not less than 2 M height to be planted in area equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

VI. Dedicated water tanker to be provided for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VII. Pre-employment Occupational health checkup for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to submitted along with 6 monthly compliance.

VIII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted within 6 monthly compliance report with Geo-Tagged photographs.

IX. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted within 6 monthly compliance report.

X. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

XI. Project Authority will ensure that personal protective equipments such as protective clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel's.

XII. River Sand Mining shall not be done in rainy Season (mid June to mid October of each calendar year).

XIII. Dept. of Mines & Geology, Govt. of Jharkhand shall keep a strict vigil in the compliance of relevant provisions of applicable Jharkhand Minerals (Prevention of illegal mining, Transportation and Storage) Rule 2017 and its amendment especially scientific execution of mining plan (as approved by they themselves) and report violations if any is found as well as action taken for the same.

XIV. Project Proponent shall submit (to the SEIAA, Jharkhand, Regional Office of MoEF&CC at Ranchi, Jharkhand State Pollution Control Board) six monthly compliance report

with evidence of the conditions within a fortnight after the end of every six month till validity period of Environmental Clearance.

XV. The project proponent before starting any activity / preparation of ground, on the leased area shall demarcate his lease hold by RCC pillars erected at the cost of lease holder after certification of the mining officer. On each pillar Geo-Coordinate and fore bearing / back bearing shall be written with permanent paint mark as described in the mining plan. All the pillars should remain intact at same geo-coordinate. Establishment / labeling of Benchmark at each pillars or ground control points.

XVI. Extraction of sand beyond annual production capacity is not permitted.

XVII. The Project Proponent should undertake the sand mining limited to 03 meter (three meter) depth by exclusively manual method.

XVIII. The stacking area of mined-out sand which shall be situated near the mining site within a fenced area from all sides to avoid being spread in the nearby areas by high winds and the height of stacking should not exceed 2 meter. Transportation shall be confined to day time only that is from sunrise to sunset, to avoid inconvenience to local population in any manner.

XIX. Mining activity shall not be done for mine lease where mining can cause danger to site of flood protection works, places of cultural, religious, historical and archaeological importance.

XX. Project Proponent shall submit the annual replenishment report certified by an authorized agency.

XXI. No labour camp shall be allowed in riverbed.

XXII. Provision shall be made for housing labour with all necessary infrastructure and facilities (outside mining Block and river-bed) such as fuel for cooking, toilets / mobile toilets, safe drinking water, First-Aid facilities, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

XXIII. Labour & Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers shall be undertaken periodically to observe any adverse health impact due to exposure to dust and take corrective measures, if needed.

XXIV. The Project Proponent shall make arrangements for safe drinking water, first aid facility along with anti-venom injection, in case of emergency for the workers.

XXV. Sand and gravel may be extracted across the entire active channel during the dry season.

XXVI. Abandoned stream channels on the terrace and inactive floodplains be preferred rather than active channels and their deltas and flood plains. The stream should not be diverted to form the inactive channel.

XXVII. Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.

XXVIII. Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.

XXIX. Sand and gravel shall not be extracted up to a distance of 1 kilo meter (1 km.) from major bridges and highways on both sides, of five times (5x) of the span (x) of a bridge / public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.

XXX. Sand and gravel could be extracted from the downstream of the sand bar at river bends.

XXXI. Mining depth should be restricted to 3 meters and distance from the band should be $1/4^{th}$ of river width and should not be less than 7.5 meters.

XXXII. A buffer distance / unmined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed / prescribed by the regulatory authority shall be maintained.

XXXIII. River bed sand mining shall be restricted within the central $3/4^{th}$ width of the river/rivulet of 7.5 meters (inward) from river banks but up to 10% of the width of the river, as the case may be. Regulating authority while regulating the zone of river bed mining shall ensure that the objective to minimize the effects of riverbank erosion and consequential channel migration are achieved to the extent possible. In general, the area for removal of minerals shall not exceed 60% of the mine lease area, and any deviation of relaxation in this regard shall be adequately supported by the scientific report.

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8. **Abhaipur, Dhanapali & Domloi Sand Ghat in the river bed of Koel River of M/s Jharkhand State Mineral Development Corporation Ltd. (JSMDC Ltd.), Mauza : Abhaipur, Dhanapali & Domloi, Anchal : Manoharpur, Distt.: West Singhbhum, Jharkhand (43.00 Ha).**

(Proposal no.: SIA/JH/MIN/530245/2025)

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 25.03.2025.

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

Application for Environmental Clearance (EC) after ToR.

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 115th meeting held on 23 - 27.07.2024 and SEIAA, Jharkhand has approved the ToRs in 115th meeting held on 06th & 07th August, 2024. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/3197/2024/219, dated 13.08.2024. The final FIA / FMP submitted by PP to SEAC on 20.03.2025.

EC Application for - 1,92,913 cum/annum or 5,03,503 TPA (Dry Basis)

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/Annum 964.56Cum/Day	
10	Mine Life	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.	
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	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
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 & Domloi	03	1493 (P), 1495 (P) & 1729 (P)
	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. JSMDC Ltd. 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. 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. 1150, dated 13.07.2024 certified that the proposed project site is outside Eco Sensitive Zone of Dalma Wildlife Sanctuary.
5	DFO Territorial	:	Divisional 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	Public Hearing	:	Public Hearing conducted on 31.01.2025.
10	Baseline Study	:	1st December, 2023 to 29th February, 2024.
11	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	Benches: size & No	:	NA
7	Elevation of Mine	:	203 m AMSL to 202.18m AMSL
8	Ground LevelElevation	:	202.18m AMSL
9	Ultimate WorkingDepth	:	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.

PRODUCTIONDETAILS

Year	Total Area (Ha)	Thickness (m)	Average Replenishment Rate	Volume (cum) 60%	Tonnage factor as per Approved DSR	Quantity in ton as per Approved DSR
1st	39.21	0.82	60%	**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*4 = 1332 Plants (two row plantations along the both side of the road)	Anjan, Sahjan, Tendu, Mango, Jackfruits, 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. / 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	-	
5	Commitments made during public hearing		7,50,000	0.00
Total EMP Budget			**19,51,000**	**3,02,300**

Need Based AssesmentCSR/CER

S.No.	Particulars	Budgets
1	Infrastructure development (in any nearby school) i.e., boundary wall, furniture, computers etc. identified school Govt. Primary school Purna Toli	4,00,000

Minutes of Public Hearing Commitment

Sl. No.	Activities as per Public Hearing	Year of Implementation & Budgets					Total
		1st Year	2nd Year	3rd Year	4th Year	5th Year	
1	Health Check-up/Dental Check-up	1,00,000	1,00,000	1,00,000	1,00,000	1,00,000	5,00000
2	For water facility for the villagers (Repairing of non-functional hand pumps in the villages.)	50,000	50,000	50,000	50,000	50,000	2,50,000
	Total	**1,50,000**	**1,50,000**	**1,50,000**	**1,50,000**	**1,50,000**	**7,50,000**

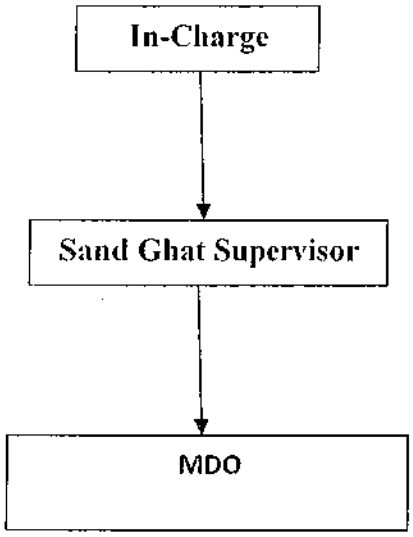
Environment Monitoring Plan (post operation)

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.



Organization Structure

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 excavated 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 DICUSSED BELOW:

Road accidents

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

Preventive Measures;

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

Dust generation

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

Noise Generation

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

Preventive measures

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

Health Hazards

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

Measures

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

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

Accident at Site

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

Preventive measures

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

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

Transportation

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

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

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
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 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 Abhaipur, Dhanapali & Domloi Sand Ghat in the river bed of Koel River of M/s Jharkhand State Mineral Development Corporation Ltd. (JSMDC Ltd.), Mauza : Abhaipur, Dhanapali & Domloi, Anchal : Manoharpur, Distt.: West Singhbhum, Jharkhand (43.00 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). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. The Environmental Clearance granted for lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.

IV. Replenishment study shall be conducted during pre-monsoon and post monsoon every year and study report have to be submitted to SEIAA / SEAC, Jharkhand. The production shall be restricted to 60% of the replenished quantity or the proposed quantity in the mine plan, which ever is less.

V. Suitable plant species of not less than 2 M height to be planted in area equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

VI. Dedicated water tanker to be provided for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VII. Pre-employment Occupational health checkup for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to submitted along with 6 monthly compliance.

VIII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted within 6 monthly compliance report with Geo-Tagged photographs.

IX. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted within 6 monthly compliance report.

X. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

XI. Project Authority will ensure that personal protective equipments such as protective clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel's.

XII. River Sand Mining shall not be done in rainy Season (mid June to mid October of each calendar year).

XIII. Dept. of Mines & Geology, Govt. of Jharkhand shall keep a strict vigil in the compliance of relevant provisions of applicable Jharkhand Minerals (Prevention of illegal mining, Transportation and Storage) Rule 2017 and its amendment especially scientific execution of mining plan (as approved by they themselves) and report violations if any is found as well as action taken for the same.

XIV. Project Proponent shall submit (to the SEIAA, Jharkhand, Regional Office of MoEF&CC at Ranchi, Jharkhand State Pollution Control Board) six monthly compliance report

with evidence of the conditions within a fortnight after the end of every six month till validity period of Environmental Clearance.

XV. The project proponent before starting any activity / preparation of ground, on the leased area shall demarcate his lease hold by RCC pillars erected at the cost of lease holder after certification of the mining officer. On each pillar Geo-Coordinate and fore bearing / back bearing shall be written with permanent paint mark as described in the mining plan. All the pillars should remain intact at same geo-coordinate. Establishment / labeling of Benchmark at each pillars or ground control points.

XVI. Extraction of sand beyond annual production capacity is not permitted.

XVII. The Project Proponent should undertake the sand mining limited to 03 meter (three meter) depth by exclusively manual method.

XVIII. The stacking area of mined-out sand which shall be situated near the mining site within a fenced area from all sides to avoid being spread in the nearby areas by high winds and the height of stacking should not exceed 2 meter. Transportation shall be confined to day time only that is from sunrise to sunset, to avoid inconvenience to local population in any manner.

XIX. Mining activity shall not be done for mine lease where mining can cause danger to site of flood protection works, places of cultural, religious, historical and archaeological importance.

XX. Project Proponent shall submit the annual replenishment report certified by an authorized agency.

XXI. No labour camp shall be allowed in riverbed.

XXII. Provision shall be made for housing labour with all necessary infrastructure and facilities (outside mining Block and river-bed) such as fuel for cooking, toilets / mobile toilets, safe drinking water, First-Aid facilities, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

XXIII. Labour & Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers shall be undertaken periodically to observe any adverse health impact due to exposure to dust and take corrective measures, if needed.

XXIV. The Project Proponent shall make arrangements for safe drinking water, first aid facility along with anti-venom injection, in case of emergency for the workers.

XXV. Sand and gravel may be extracted across the entire active channel during the dry season.

XXVI. Abandoned stream channels on the terrace and inactive floodplains be preferred rather than active channels and their deltas and flood plains. The stream should not be diverted to form the inactive channel.

XXVII. Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.

XXVIII. Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.

XXIX. Sand and gravel shall not be extracted up to a distance of 1 kilo meter (1 km.) from major bridges and highways on both sides, of five times (5x) of the span (x) of a bridge / public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.

XXX. Sand and gravel could be extracted from the downstream of the sand bar at river bends.

XXXI. Mining depth should be restricted to 3 meters and distance from the band should be $1/4^{th}$ of river width and should not be less than 7.5 meters.

XXXII. A buffer distance / unmined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed / prescribed by the regulatory authority shall be maintained.

XXXIII. River bed sand mining shall be restricted within the central $3/4^{th}$ width of the river/rivulet of 7.5 meters (inward) from river banks but up to 10% of the width of the river, as the case may be. Regulating authority while regulating the zone of river bed mining shall ensure that the objective to minimize the effects of riverbank erosion and consequential channel migration are achieved to the extent possible. In general, the area for removal of minerals shall not exceed 60% of the mine lease area, and any deviation of relaxation in this regard shall be adequately supported by the scientific report.

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9. **Keso – 14 Sand Ghat in the river bed of Keso River of M/s Jharkhand State Mineral Development Corporation Ltd. (JSMDC Ltd.), Mouza : Ambadih & Dasaro Khurd, Block : Jainagar & Markacho, Distt. : Koderma, Jharkhand (5.35 Ha).**

(Proposal no.: SIA/JH/MIN/ 518637 /2025)

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 25.03.2025.

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

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

Term of Reference (Tor) Application for: Proposed Capacity-64,200 Cum per Annum/1,00,794 Tonnes per Annum of Sand.

PROJECT AND LOCATION DETAILS:

S.No.	Parameter	Details
1	Project Name	Keso-14 Sand Ghat
2	Proponent:	M/s Jharkhand State Mineral Development Corporation Ltd. (A Govt. of Jharkhand Enterprises) Sri Karun Kumar Chandan (In-Charge Sand)
3	Lessee Address	Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand)
4	Lease Area	5.35Ha.
5	Type of Land	Non-Forest Government Land (Keso River Bed)
6	Project Cost	Rs – 70.24Lakhs
7	EMP Budget	Capital: Rs 18.83 Lakh | Recurring: 4.86 Lakh per year
8	New or Expansion	New
9	Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity	64,200 Cum/Annum
10	Mine Life	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.
11	Man power	169 person
12	Water Requirement	Total water requirement is about 17.685 KLD 7.605 KLD (Drinking & Domestic Uses) + 5.04 KLD Plantation) + 5.04 KLD (Water Sprinkling)
13	Water Source	By Authorised hired tankers
14	DG Set / power	NA
15	Crusher	NA
16	Nearest Water Body	Keso River (Project site)
17	Nearest Habitation	TetraunKoderma, At 0.88 Km In Nw Direction.
18	Nearest Rail Station	Parsabad Railway station is about 2.4 Km in WSW direction. Yadudih Railway Station is about 7.0 km in WNW.
19	Nearest Air Port	Giridih Airport is about 54.6Km in E direction
20	Nearest Forest	**Name of Places** | **Distance (Km)** | **Direction** Khijursota PF | 4.66 | S Bhikhnadih PF | 6.5 | SW Digwar PF | 4.9 | SE
21	Road Highways	Koderma - Jainnagar –Markacho Road is about 0.67 km in NNE direction.
22	Seismic zone	Zone III as per seismic zone map of India

CO-ORDINATES

Pillar No.	Latitude	Longitude	Pillar No.	Latitude	Longitude
1	24°19'15.41"N	85°45'58.02"E	20	24°19'4.81"N	85°45'44.20"E
2	24°19'15.10"N	85°45'58.22"E	21	24°19'6.30"N	85°45'44.10"E
3	24°19'14.80"N	85°45'58.41"E	22	24°19'7.67"N	85°45'44.19"E
4	24°19'14.50"N	85°45'58.62"E	23	24°19'9.24"N	85°45'44.85"E
5	24°19'14.20"N	85°45'58.83"E	24	24°19'10.73"N	85°45'45.94"E
6	24°19'13.91"N	85°45'59.05"E	25	24°19'12.40"N	85°45'47.65"E
7	24°19'13.62"N	85°45'59.27"E	26	24°19'13.54"N	85°45'49.31"E
8	24°19'13.34"N	85°45'59.51"E	27	24°19'14.61"N	85°45'50.39"E
9	24°19'13.06"N	85°45'59.75"E	28	24°19'15.51"N	85°45'51.10"E
10	24°19'12.82"N	85°45'59.96"E	29	24°19'15.64"N	85°45'51.31"E
11	24°19'12.53"N	85°45'59.28"E	30	24°19'15.82"N	85°45'51.98"E
12	24°19'12.59"N	85°45'57.15"E	31	24°19'15.55"N	85°45'53.34"E
13	24°19'12.24"N	85°45'55.51"E	32	24°19'15.55"N	85°45'54.26"E
14	24°19'11.27"N	85°45'52.92"E	33	24°19'15.32"N	85°45'55.24"E
15	24°19'9.24"N	85°45'50.52"E	34	24°19'15.50"N	85°45'56.31"E
16	24°19'8.27"N	85°45'49.30"E	35	24°19'15.88"N	85°45'56.86"E
17	24°19'7.49"N	85°45'47.37"E	36	24°19'15.84"N	85°45'57.77"E
18	24°19'6.73"N	85°45'45.75"E	37	24°19'15.72"N	85°45'57.84"E
19	24°19'5.37"N	85°45'44.45"E			

LAND DETAILS

Mouza	Khata no.	Plot no.
Ambadih & Dasaro Khurd	826 & 583	826, 2263 & 1890

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. JSMDC Ltd. has been nominated as nodal agency for operating sand mines in category II.
2	CO	:	The CO, Jainagar (Koderma) vide letter no. : 314, dated 27.04.2023 and CO, Markacho (Koderma) vide letter no. 213, dated 24.04.2023 have mentioned the plot no. of the project is not recorded as "Jungle - Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Koderma vide memo no. 791/M, dated 08.05.2024 certified that the 01 other Balughat (3.21 Ha) exists within 500 m radius from proposed project site and total area is 9.56 Ha.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. : 1782, dated 13.08.2024 certified that the proposed project site is outside Eco Sensitive Zone of Koderma Wildlife Sanctuary.
5	DFO Forest Distance	:	DFO, Koderma Forest Division vide letter no. 757, dated 19.03.2025 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 Koderma (Sl. No. 14 & 29).
7	Gram Sabha	:	BDO, Markacho vide letter no. 548, dated 08.05.2024 informed that Gram Sabha conducted on 29.04.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Koderma vide letter no. 751/M, dated 03.05.2024.
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	:	5.35Ha.
3	Waste Generation	:	No waste generation
4	Stripping Ratio	:	0:0
5	Working Days	:	200 day
6	Benches: size & No	:	NA

7	Ground Level Elevation	:	Approx 322 Amsl
8	Ultimate Working Depth	:	2.0 Max
9	Water Table	:	NA
10	Topography of Mine	:	Area represents gently sloping land.
11	Explosive Requirement	:	None. No blasting required
12	Diesel/Fuel Requirement	:	Not required for mining.

PRODUCTIONDETAILS

Total area	Area for Extraction (m2)	Depth	Volume in(M3)	Volume in(Ton)	Tonnage factor
3.21 Ha.	32100	2.0 m	64200	100794	1.57

Every year replenishment study (pre-monsoon & Post-Monsoon) will be carried out and 60% of production will be done as per Sustainable Sand Mining guidelines, 2016 & 2020.

LAND USE

GM Land	Area in Hectares
Private Land	0.00
Proposed Mining Area	3.21
Safety Zone	0.59
Unused Area	1.55
Total Area	**5.35**

ENVIRONMENT MANAGEMENT

GREEN BELT DEVELOPMENT

Village	No of plants	Area consider for plantation (length of approach road) KM	Species of plant	Expected Survival Rate (%)
Keso-14 Sand Ghat Total area of 5.35 ha in River- Keso	1680	1.26 KM Approach Road, 1260/3 = 420 Plants 420 *4 = 1680 plants (Two Row Plantation along The both side of the road)	Mango, Jackfruit, Jamun, babul, Gulmohar, Neem, Pipal, Arjun etc.	80%

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

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

Environment Management Budget

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 10.04 KLD @5 KL tanker capacity, Rupees 500- per tanker	30,000	2,00,800
2	Road Maintenance & Monitoring budget	Prepare & Maintenance of approach road (Max. Road length 1.26 Km, Width 4.0m) @200Rs. /Sq. Meter.	10,08,000	1,00,800
		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) 1680 Plants @ INR 500/Plant	8,40,000	84,000
4	Solid Waste Management	Bins 10 nos.	5,000	1,000
		Transport of Dry Waste/Wet Waste	-	
Total EMP Budget			**18,83,000**	**4,86,600**

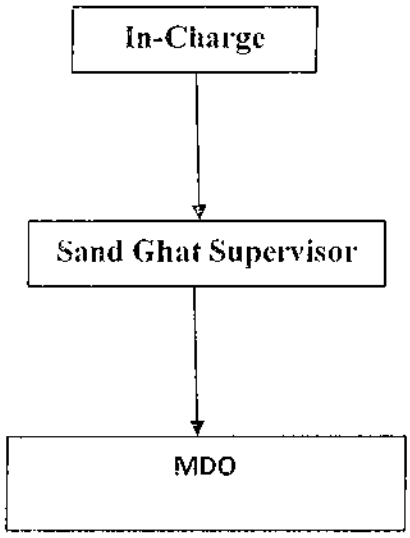
Environment Monitoring Plan (post operation)

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

Solid Waste Management

•No solid waste is generated during the course of mining.



Organization Structure

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 excavated 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 DICUSSED BELOW:

Road accidents

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

Preventive Measures;

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

Dust generation

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

Noise Generation

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

Preventive measures

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

Health Hazards

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

Measures

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

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

Accident at Site

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

Preventive measures

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

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

Transportation

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

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

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
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.
m. Transportation from the river bed to the NH-43 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 24, 25, 26, 27 & 28.03.2025, 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). 10% of the total green belt proposed shall be allocated under this clause.

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.

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10. **Proposed Residential Building "Sulochna Kripa Garden" of M/s Kripa Infraheights Pvt. Ltd., Village : Bargawan, Thana : Namkum, Thana no. : 216, Distt. : Ranchi, Jharkhand.**

(Proposal no.: SIA/JH/INFRA2/ 527249 /2025) (New EC)

Name of the consultant : Rian Enviro Pvt. Ltd., Patna, Bihar.

This is a new project which has been taken for appraisal on 25.03.2025.

Project Sector: 8(a) Building and Construction Projects , Category: B2.

Application for Environment Clearance (EC) as per EIA notification, 2006.

M/s Kripa InfraheightsPvt. Ltd. has **Proposed Residential Building "Sulochna Kripa Garden"** on Plot No.- 115, Khata No.- 121 at Village- Bargawan, Thana- Namkum, Thana No.- 216, District- Ranchi, State- Jharkhand on the **total land area** measuring **5019.69 Sqm.** The proposed **built up area** is**21422.82 Sqm**.

SalientFeatures of the Project

Sr. No.	Particulars	
1.	Latitude	**23°19'12.693"N**
2.	Longitude	**85°22'40.147"E**
3.	**Total Plot area**	**5019.69 Sqm**
4.	Total FAR Achieved	16316.94 Sqm
5.	Residential Non FAR Area (Staircase Lift Balcony, Parking etc.)	5105.88 Sqm
6.	**Total Built-up area**	**21422.82 Sqm**
7.	Built-up Area for EWS & LIG provided	1266.91 Sqm
8.	Total No. of Car Parking Required	156 ECS
9.	Total No. of Car Parking Proposed	161 ECS
10.	Proposed two wheeler parking	163 No.
11.	Proposed Ground Coverage @ 32.19 %	1616.17 Sqm
12.	Greenbelt area Provided	1164.1 Sqm
13.	Road Area	1119 Sqm
14.	Open & Paved Area	1120.42 Sqm
15.	Rain Water Harvesting Pits (with size)	3 Nos. (6.28 Cumec)
16.	STP Capacity	95 KLD
17.	Maximum Height of the Building (m)	Approx. 36.90 m
18.	Power Requirement	1410 KW
19.	Power Backup	2 DGs (250×1 & 500×1) KVA
20.	Total Water Requirement	~96 KLD
21.	Fresh/Domestic Water Requirement	~59 KLD
22.	Reuse of Recycled Water	~37 KLD

23.	Waste Water Generated		~79 KLD
24.	Solid Waste Generated (Operational)		~413 Kg/day
25.	Biodegradable Waste (Operational)		~165 Kg/day
26.	Non-Biodegradable Waste (Operational)		~248 Kg/day
24.	Number of Tower		01
25.	Basement		1
26.	Stories		B+G+10
27.	Total Cost of the project:		**32.27 Crore**
28.	EMP Budget		During Construction: Capital: 43 Lakhs Recurring: 13 Lakhs
			Operational Cost: Capital: 76 Lakhs Recurring: 21 Lakhs
29.	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.
121	115

DetailedAreaStatement

S. No.	Project Detail	Area
1	**Total Plot area**	**5019.69 Sqm**
3	**Total FAR Achieved**	**16316.94 Sqm**
4	Residential Non FAR Area (Staircase Lift Balcony, Parking etc.)	5105.88 Sqm
5	**Total Built-up area**	**21422.82 Sqm**
6	Built-up Area for EWS & LIG provided	1266.91 Sqm
7	Total No. of Car Parking Required	156 ECS
8	Total No. of Car Parking Proposed	161 ECS
9	Proposed two wheeler parking	163 No.
10	**Proposed Ground Coverage @ 32.19 %**	1616.17 Sqm
11	Greenbelt area Provided @ 23.19 %	1164.1 Sqm
12	Road Area	1119 Sqm
13	Open & Paved Area	1120.42 Sqm

Block -wise built-up area details

Floor Plan	Proposed Built Up Area (Sq.mt.)	Proposed FAR Area (Sq.mt.)
Basement	2712.09	17.09
Ground Floor	1799.45	120.7
First Floor	1628.43	1616.17
Second Floor	1728.73	1644.14
Third Floor	1728.73	1644.14
Fourth Floor	1728.73	1644.14
Fifth Floor	1728.73	1644.14
Sixth Floor	1728.73	1644.14
Seventh Floor	1728.73	1644.14
Eighth Floor	1728.73	1644.14
Ninth Floor	1631.77	1547.18
Tenth Floor	1549.97	1506.82
Total	21422.82	16316.94

Details of Building Blocks

Block	3 BHK	2 BHK	1 BHK	Total No. of units	Population	No. of Floors	Height of the Building
Residential	125			125	750	B+G+10	Max 36.90 meter
LIG		19		19	95		
EWS			13	13	52		
Total				**157**	**897**		

Statutory Clearances :

1	Land Docs	:	Development agreement : M/s Kripa Infraheights Pvt. Ltd.
2	DFO Territorial		DFO, Ranchi Forest Division vide letter no. 1462, dated 27.04.2024 certified that the distance of reserved / protected forest is less than 250 meters from project site.
3	DFO Wildlife	:	DFO, Wildlife Division, Hazaribag vide letter no. 310, 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. 720 (ii), dated 12.07.2024 has mentioned the plot no. of the project is not recorded as "Jangle Jhari" in R.S. Khatiyan & Register II.

5	AAI NOC	:	Airport authority of India issued NOC vide NOC ID no. RANC /EAST /B/ 032224/953883, dated 15.04.2024.
6	Building Plan approval	:	Conceptual Plan submitted.
7	Fire Department	:	Fire Advisory has been issued by Fire Department, Jharkhand, Ranchi, vide memo no. 75/Tech./2025, dated 05.01.2025.

Details of Site Surroundings and Connectivity

S. No.	Description		Distance and Direction
1.	Nearest Junction Nearest Railway Stations	Namkum Railway Station Ranchi Junction Railway Station Hatia Railway Station	Approx.3.45 Km towards North Approx. 5.35 Km towards NW Approx. 7.2 Km towards WSW
2.	Nearest Airport	Birsa Munda Airport, Ranchi	Approx. 5.35 km towards WSW
3.	Nearest Village	Barganwa Kali Nagar Namkum	Approx. 0.23 Km towards ENE Approx. 1 Km towards ESE Approx. 1 Km towards North
4.	Nearest Highway/Roads	NH 20 Namkum Main road	Approx. 0.58 Km towards East Approx. 0.50 Km towards West
5.	Nearest School & College	Jharkhand University of Technology Govt. Middle School, Barganwa Govt. Basic Middle School Namkum Doranda College	Approx. 0.55 Km towards SW Approx. 0.78 Km towards ESE Approx. 1.0 Km towards NW Approx. 6.35 Km towards WNW
6.	Nearest Hospital	Maa Kali Wati Hospital Hospital Lane Doranda State Hospital	Approx. 1.98 Km towards ESE Approx. 5.18 Km towards WNW Approx. 6.39 Km towards WNW
7.	Places of worship	Hanuman Mandir Barganwa, Ranchi Kali Mata Mandir Kali Nagar Vishwanath Mandir Chai Bagan Pahari Temple, Ranchi	Approx. 0.17 Km towards West Approx. 0.20 Km towards SSE Approx. 0.30 Km towards WSW Approx. 9.10 Km towards NW
8.	Water Bodies	Subarnarekha River Ranchi Lake	Approx. 2.0 Km towards West Approx. 8.10 Km towards NW
9.	Nearest Town	Ranchi	Approx. 7.47 Km towards WNW

10.	Protected Forest/ Zoo	Biodiversity Park, Ranchi	Approx. 7.88 Km towards SSW

CalculationofPopulation

Block	Total Dwelling Units	Unit Population	Population
Residential Block	157	4/5/6/7	897
Visitors	10% of Residential Population		90
Total Population	.....		**987**

Parking Details

Car Parking Required	
Required Car Parking for use of residential	142 ECS
Required Car Parking for use of Visitors (15 %)	14 ECS
Total Car Parking required	156 ECS
Car Parking provided	
Car Parking for use of residential	146 ECS
Car parking for Visitors provided	15 ECS
Total Car Parking provided	161 ECS
Two Wheeler parking provided	163 NO

Parking Details

Vehicle Type	Reqd.		Prop.	
	No.	Area	No.	Area
Car	-	-	146	1825
Total Car	142	1775	146	1825
Visitor's Car Parking	-	-	15	187.5
Total Visitor Parking	15	187.5	15	187.5
TwoWheeler	-	-	163	326
Total TwoWheeler	156	312	163	326
Other Parking	-	-	-	2149.79
Total	2274.5		4814.29	

Calculation of Green belt

Total Plot Area	5019.69 Sqm
Green belt area provided @ ~17.5 % of Plot Area	878.4 Sqm
Green Cover area provided @ 5.69% of plot Area	285.7 sqm
Total Greenbelt Area provided @ 23.19 %	1164.1 sqm
Total No. of Trees will be Planted @ 1 tree per 80 Sqm. of Plot Area	Say 80 Nos.

Details of Water Requirement

S. No.	Description	No. of units / Area in Sqm	Population	Unit water consumption (lpcd)	Total water required (kld)	Fresh water required (kld)	Flushing (kld)	Total Wastewater (kld) (80% of domestic +100% Total flushing)
1	Main Dwelling Units (Residential)	159	897	100(65+35)	89.7	58.305	31.395	78.039
2	Visitors (10% of the residential population)	..	90	15(10+5)	1.35	0.9	0.45	1.17
	Subtotal I				91	59	31.845	79
	Reuse of treated water							
	Horticulture	...	...		5			0
	Flushing							
Total					96			

Details of Wastewater Generation and STP Capacity

Details	Water (KLD)
Water requirement for domestic purpose	59
Wastewater to be generated from domestic use (@ 80% of domestic water requirement)	47

Water requirement for Flushing Purpose	32
Wastewater to be generated from Flushing (@ 100% of flushing requirement)	32
Total Wastewater generated	79
STP capacity 20% higher than total waste water	**95**

Solid waste Generation details

S. No.	Category of Solid Waste	Waste Generation Rate	Formula	Total Population	Waste Generated	Bio-degradable	Non-biodegradable
1	Main Dwelling Units (Residential)	0.3 to 0.6 kg/cap/day	Total Population *0.45	897	403.65	161.46	242.19
2	Visitors (10% of the residential population)	0.05 to 0.2 kg/cap/day	Total Population *0.1	90	9	3.6	5.4
	Total			**987**	**413**	**165**	**248**

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%	70.5 KVA
2.	LED Based lighting will be done in the dwelling units	9.79 KVA
3.	Usage of energy efficient Lift (VVVF non gear lifts)	21 KVA
4	Total Energy saved	101.29 KVA
5	Total Energy consumption	1410 KW
	Total Energy saving	**7.18 %**

Environmental Management Cost – Construction Phase

Sr. No.	Component	Particulars	Capital Investment (Lakhs)	Recurring Expenditure per Annum (Lakhs)
1.	Air	Anti-Smog Gun	10.0	3.0
2.	Water	Mobile STP, etc.	5.0	2.5
3.	Solid and C&D Waste and its Management	Stack yard and its management	3.0	2.0

Sr. No.	Component	Particulars	Capital Investment (Lakhs)	Recurring Expenditure per Annum (Lakhs)
4.	Environment Monitoring & Management	Environment Monitoring as per monitoring plan ➢ Construction of wind breaking wall ➢ Green Curtains on under construction building	15.0	3.0
5.	Green Belt	Development and maintenance of green belt	10.0	2.5
Total (Rs.)			**43**	**13**

Environmental Management Cost – Operation Phase

Sr. No.	Component	Particulars	Capital Investment (Lakhs)	Recurring Expenditure per Annum (Lakhs)
1.	Air	Stack emission control	5.0	2.00
2.	Water	Sewage Treatment Plant (STP)	40	10.0
3.	Rain Water Harvesting	Installation of RWH System & Annual Cleaning of RWH tank	6	1.00
4.	Solid waste Area and its Management	Purchase of Containers for Storage of Waste (200 Kg/day)	5	1.00
5.	Environment Monitoring & Management	Environment Monitoring as per monitoring plan	0.0	2.0
6.	Green Belt	Development and maintenance of green belt	5	2.0
7.	Others	Energy saving devices, miscellaneous.ie Electrical Vehicle Charging point	10 5	2.0 1
		Total (Rs.)	**76**	**21**

Monitoring Period:

Construction Phase:

S. No.	Type	Locations	Parameters	Period and Frequency
1.	Ambient Air Quality Monitoring	As per requirement	SO_2, NO_2, PM_{10}, $PM_{2.5}$ and CO	Once in a Six month.
2.	Ambient Noise Monitoring	As per requirement	Noise level L_{eq}both during day time and night time	Once in a Six month.

3.	Water Quality Testing (Portability testing)	(i) Any operational bore well (ii) One of the Drinking Water Point	Drinking water parameters as per IS 10500:2005.	Once in a Six month.
4.	Treated Wastewater Quality	Inlet and outlet of the STP	Parameters for assessing compliance with standards for recycling and horticulture use	Once in a Six month.

Operation Phase:

S. No.	Type	Locations	Parameters	Period and Frequency
1.	Ambient Air Quality Monitoring	As per requirement	SO_2, NO_2, PM10, PM2.5 and CO	Once in a Six month.
2.	Ambient Noise Monitoring	As per requirement	Noise level L_{eq}both during day time and night time	Once in a Six month.
3.	Water Quality Testing (Potability testing)	(i)Any operational borewell (ii)One of the Drinking Water Point	Drinking water parameters as per IS 10500:2012.	Once in a Six month.
4.	Treated Wastewater Quality	Inlet and outlet of the STP	Parameters for assessing compliance with standards for recycling and horticulture use	Once in a Six month.

Based on the presentation made and information provided, the Committee decided that the proposal for Proposed Residential Building "Sulochna Kripa Garden" of M/s Kripa Infraheights Pvt. Ltd., Village : Bargawan, Thana : Namkum, Thana no. : 216, Distt. : Ranchi, Jharkhand is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure –IV 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). 10% of the total green belt proposed shall be allocated under this clause.

II. During construction phase use of STP treated water will be preferred to maximum extend possible. If ground water is used it will be done with due permission of CGWA.

III. During operation phase ground water to be drawn for use in the project only after obtaining permission from the Competent Authority.

IV. 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.

V. All construction material to be stored only under covered shed.

VI. PAs to offset (upto 20%) consumption of conventional energy sources by promoting use of solar energy, passive energy utilization, optimum fenestration, shading effect and heat islands.

VII. 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.

VIII. Trees should be developed & maintained not less than 15% of project area.

IX. Organic Waste Converter (OWC) to be installed of sufficient capacity such that all organic waste (bio degradable) generated is composted at source only.

X. Developers/Company to install STP of sufficient capacity such that all the sewer produced is treated and reused.

XI. 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.

XII. Developers/Company to conduct and submit carbon footprint and carbon sequestration study report including mitigation measures as a part of EC compliance.

XIII. 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.

XIV. Sufficient number of EV fast charging points to be installed.

XV. 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.

XVI. ISO 14001 EMS system standard to be followed for implementation of EMPs with MRM in place for feedback to Sr management.

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11. **Bindri Bandarkola Stone Deposit by M/s Radharaman Construction and Marketing Pvt. Ltd., Village : Bindri Bandarkola, Thana no. : 3, Anchal : Borio, Distt. : Sahibganj, Jharkhand (2.792 Ha).**

(Proposal no.: SIA/JH/MIN/ 530364 /2025)

Name of the consultant : Rian Enviro Pvt. Ltd., Patna, Bihar.

This is a new project which has been taken for appraisal on 25.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Boulder Stone:185555.925 Cum Per Annum /501001Tonnes Per Annum

Morum: Not Present
DG Set: 60 KVA
Mobile Crusher: Present

PROJECT and LOCATION Details:

Sl.	Parameter		Details	
1	Project Name	:	Bindri Bandarkola Stone Deposit	
2	Lessee:	:	CEO- Shri Prakash Kumar Singh	
3	Lease Address	:	Mauza- BindriBandarkola, Thana No.-03, Thana- Borio, District- Sahebganj, Jharkhand	
4	Lease Area	:	Ha:2.792 ha	Acres:6.90Acres
5	Type of Land	:	Non Forest – Rayati Land	
6	Project Cost	:	50.0 Lakhs	
7	EMP Budget	:	Capital: 10.67Lakhs	Recurring: 6.32 Lakh / year
8	CSR / CER Budget	:	Rs. 1,00,000	
9	New or Expansion	:	New Project	
10	Mineable Reserves	:	Cu.M.:185555.925Cu. M.	Tonnes:501001Tonnes
11	Mine Life	:	05 years	
12	Man power	:	27	
13	Water Requirement	:	9.056 KLD= 0.27 KLD (Drinking & Domestic Uses) + 3.786 (Plantation) KLD + 5.0 KLD (Dust Suppression).	
14	Water Source	:	From Nearby villages by tankers	
15	DG Set / power	:	60 KVA	
16	Crusher	:	Not Present	
17	Nearest Water Body	:	Ganga River, approx. 7.83 Km towards North.	
18	Nearest Habitation	:	Bara Lohanda,approx. 5.74 km towards North direction.	
19	Nearest Rail Station	:	Sahibganj Railway Station, approx. 8.20 km towards NNW direction.	

20	Nearest Air Port	:	Deoghar Airport, approx. 124.80 km towards SW direction. (Source: Google earth & Aerial Distance)
21	Nearest Forest	:	Protected Forest, approx. 1.55 Km towards East.
22	Road & Highways	:	NH-33, Approx. 7.20 km towards North direction. SH-18, Approx. 1.35 km towards East direction.

CO-ORDINATES

1	Latitude		From 25° 10' 9.685"N	To 25° 10' 16.588" N
2	Longitude		From 87° 39' 30.254"E	To 87° 39' 39.961" E

LAND DETAILS

Khata no.	Plot no.
06 & 11	23 (P) & 25 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 1398/M, dated 17.12.2024.
2	CO	:	The CO, Borio, Sahibganj vide letter no. 248/Ra., dated 09.04.2021 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 1432/M, dated 20.12.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 803, dated 19.04.2021 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide letter no. 552, dated 16.03.2021 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Sahibganj has been certified vide memo no. 473/M, dated 18.03.2025 that this project is mentioned in approved DSR of Sahibganj District as a potential area (Page no. 197).
7	Gram Sabha	:	Gram Sabha conducted on 19.02.2021.

8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 472/M, dated 18.03.2025.
9	Grid certificate	:	DMO, Sahibganj vide memo no. 493/M, dated 18.03.2025 certified that the proposed project site is outside of Grid 1, 3, 4 & 7.
10	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 Method, Semi-Mechanized Mine, Wagon Drilling & Control Blasting will be deploy
2	Quarry Area	:	2.792 ha.
3	Waste Generation	:	5 years–104659 cum in-situ waste &43623 cum Intercalated Waste
4	Stripping Ratio	:	1:00
5	Working Days	:	300
6	Benches: size & No	:	6m x 6m
7	Elevation of Mine	:	236-211 m AMSL
8	Ground Level Elevation		61m AMSL
9	Ultimate Working Depth	:	175 m AMSL
10	Water Table	:	150 m AMSL
11	Topography of Mine	:	Undulating hillocks
12	Explosive Requirement	:	21.26MT/Kg
13	Diesel/Fuel requirement	:	768Litres/day

Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Overburden in Cum	Intercalated waste in Cum	Total Waste in Cum
1st	144461	390044	32000	7603	39603
2nd	154189	416310	0	8115	8115
3rd	166717	450137	11346	8775	20121

4th	177907	480348	17690	9364	27054
5th	185556	501001	0	9766	9766
Total	**828829**	**2237839**	**61036**	**43623 1**	**104659**

Land Use

LAND USE PATTERN			
Land Utilization	**Existing Land Use (Ha)**	**At the end of plan period (Ha)**	**At Conceptual period (Ha)**
Quarry	NIL	2.281 (0.162ha area shall be backfilled, 1.204 ha area shall be left as water reservoir and 0.915 ha left as dead benches).	2.281 (0.162ha area shall be backfilled, 1.204 ha area shall be left as water reservoir and 0.915 ha left as dead benches).
Waste Dump	NIL	Nil (waste dump to be removed and backfilled)	Nil (waste dump to be removed and backfilled)
Road	NIL	0.000	0.000
Crusher	NIL	Nil (shifted to quarry bottom)	Nil (shifted to quarry bottom)
Safety Zone Plantation	NIL	0.512	0.465
Total	**0.000**	**2.792**	**2.792**
Unused Area	**2.792**	**0.000**	**0.000**
Total Lease Area	**2.792**		

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Area in safety Zone (Ha.)	Approach road Area (Ha.)	Total Area (Ha.)	No. of plants
1st Year	0.512	0.277	0.789	1262
2nd Year	Care & Protection			
3rd Year				
4th Year				
5th Year				

- 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

- In this applied lease area, the stone deposit is covered with 2m layer of intermixed soil which considered as over burden. The recovery of stone is about 95%, thus intercalated waste of only 5% shall be generate from this mine. It has been calculated that total 104659 cum in-situ waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 52329 cum (In situ) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e.52329 cum in situ 65411.63cum loose & 55599.88 cum compact waste shall be temporary dumped in up to second year and third year onwards the generated waste and waste materials of past dumping shall be removed and used for backfilling of exhausted part of quarry in southern part it will cover 0.162ha area.

Schedule of Monitoring

S.No.	Description of Parameters	Schedule of Monitoring
1	Air Quality	24 hourly samples twice a week in each season except monsoon
2	Water Quality (Surface & Groundwater)	Once a season for 4 seasons in a year
3	Soil Quality	Once in a year in project area
4	Noise Level	Twice a year for first two years & then once a year
5	Socio-economic Condition	Once in 3 years
6	Plantation Monitoring	Once in a season

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 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.

Undertaking submitted affirming:

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

Quantity of HSD/ Fuel consumption per day

S. No	Machine	Details of fuel (Diesel) requirements	Consumption of Diesel (in liters/day.)
1	Wagon Drill	Number of Machine=1 Diesel consumptionin one shift working. (i.e-10 liters) =1*8*10=80liters	80liters
2	Excavator	Number of Machine=03 Diesel consumptionin one shift working. (i.e-07litre/hr) =3*8*7=168 liters	168liters
3	Tippers	Number of Tippers=06 Diesel consumptionin one shift working. (I.e-4ltr/hr.) =06*10*4=240	240 liters
4	DG Set	Number of DG Set =1(60 KVA) Diesel consumption by one in one shift working.(i.e-16 liter/hr.) =1*10*16=160 liters	160 liters
5	Water Sprinkler	Number of Sprinkler=01 Diesel consumption by Sprinkler in one shift working (i.e-2ltr/hr.) =1*10*2=20 liters.	20 liters
6	Extra	Transport vehicle, super vision vehicle, maintenance vehicle	100 liters
Total			**768**

Environment Management Plan:

S.NO	Particulars	Annual Budget Provisions (Lakh)	
A)Site Facilities		Capital Cost (In Lakh)	Recurring cost (In Lakh)
1	a) Water sprinkling facility with solar pump / diesel pump	1.0	0.4
	b) Cost of Water Rs. 200/Tanker/day (Capacity 3.5 KL x 1 No.) (200X 1 X 300)	-	0.60
2.	Garland Drains and Settling Tanks (10m x 02 m x 03m x	2.5	0.15
3	Road Development and Maintenance (Road length approx. 250m, Width 5.0 mt.)	2.0	0.4

4	Plantation over the periphery of the project (1262 saplings).	1.74	0.5
5	PUC certification of vehicles and maintenance	-	0.10
Sub Total(A)		**7.24**	**2.15**
B)Labor Welfare			
1	Drinking Water Facility and rest shelter (10X20 m) with	1.0	0.10
2	Toilets 2 nos. (Rs 25000 x 2)	0.50	0.05
3	Occupational health checkup in a year for 27 workers (@twice/year) @200*2*27 and onsite first aid set-up	0.10	0.10
4	Provision of PPEs (helmets, safety shoes, safety glasses, gloves etc. (25 x 3000)	0.75	0.05
5	Vocational training on mining methods and safe work practices (@twice/year)@ 250 x 2 x 27)	-	0.08
Sub Total(B)		**2.35**	**0.38**
C)Emergency Rescue Plan			
1	Fire Extinguishers (1 Nos.) @ 50000 / firefighting and, first aid @ 2000 per kit	0.50	0.01
2	Safety signage and warning boards like sirens, red flags, cones etc.	0.50	0.05
Sub Total(C)		**1.0**	**0.06**
D)Solid Waste Management			
1	a) Bins 2 Nos. @ Rs. 1500 each	0.03	0.05
	b) Pit and Composting	0.05	
Sub Total(D)		**0.08**	**0.05**
E)Monitoring Program			
1	a) Ambient Air Quality	-	0.90
	b) Water Quality	-	0.80
	c) Noise Quality	-	0.18
	d) Soil Quality	-	0.80
	e) Biodiversity Survey	-	0.50
	f) Socio- Economy Survey	-	0.50
Sub Total(E)		-	**3.68**
Grand Total(A+B+C+D+E)		**10.67**	**6.32**

Organizational Structure:

Introduction

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and

transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

Our company is committed to:

- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

EMP Cell Objectives

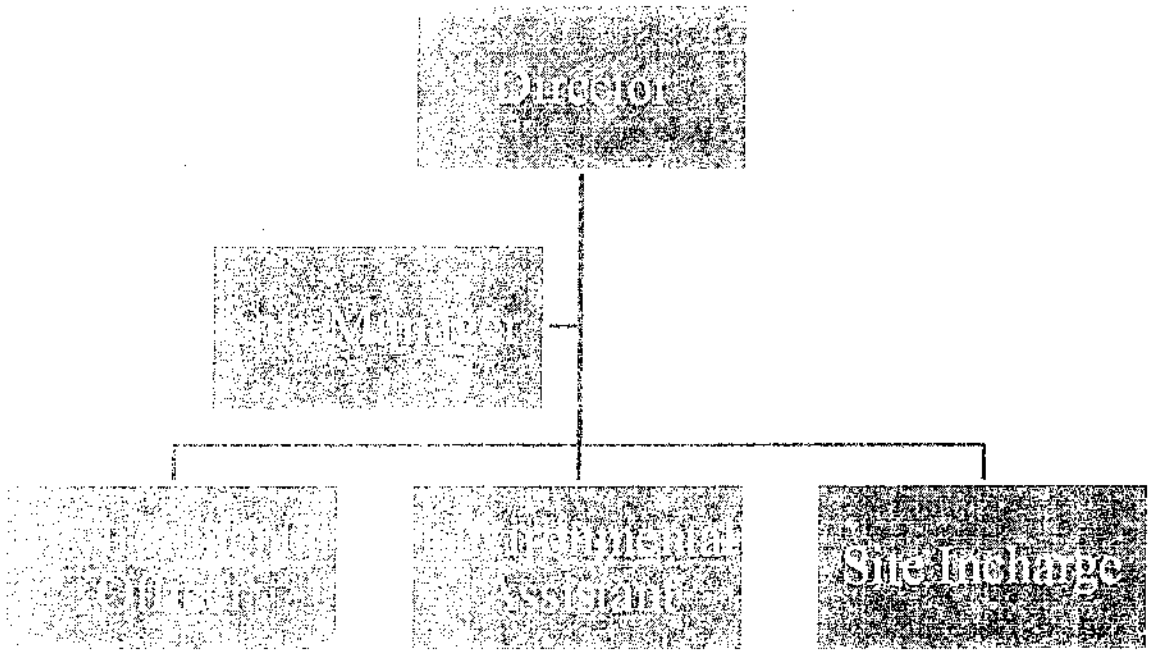
The EMP Cell objectives are:

- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

EMP Cell Structure

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks



EMP Cell structure

Roles and Responsibilities

Environmental Officer (EO)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities

- Provide environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

Environmental Assistant (EA)

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission

4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:
1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:
- EMP manual
- Monitoring records
- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:
1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

- Company Director

- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Bindri Bandarkola Stone Deposit by M/s Radharaman Construction and Marketing Pvt. Ltd., Village : Bindri Bandarkola, Thana no. : 3, Anchal : Borio, Distt. : Sahibganj, Jharkhand (2.792 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). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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12. Jamnijara Stone Mines of M/s Jamnijara Stone Mines With Crusher (Prop. : Shri Rameshwar Mahto), Mouza : Jamnijara, Thana : Bishungarh, Distt. : Hazaribag, Jharkhand (2.79 Ha).

(Proposal no.: SIA/JH/MIN/ 508179 /2024)

During the presentation it was revealed from KML Map that mining has been done beyond the Mining lease boundary in the North and the South direction.

Hence, the Committee has desired clarification from the DC, Hazaribag / DMO, Hazaribag regarding the mining beyond the mine lease area.

On the receipt of the above the project will be taken up for consideration.

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13. **Churchu Stone Mine - I of M/s Ganesh Stone Works (Partners : Shri Suresh Kumar & Shri Vikash Kumar), Mouza : Churchu, Thana no. : 166, Anchal : Sadar, Distt. : Hazaribag, Jharkhand (1.214 Ha).**

(Proposal no.: SIA/JH/MIN/ 507416 /2024)

Name of the consultant : Rian Enviro Pvt. Ltd., Patna, Bihar.

Application for Environmental Clearance (EC) (re-appraisal of Environment Clearance issued by DEIAA, Hazaribag).

The project has been granted EC by DEIAA, Hazaribag vide letter no. EC/DEIAA/2017-18/59, dated 22.08.2017.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Hazaribag which has been listed for appraisal on 25.03.2025 and on the request of PAs vide letter dated 25.03.2025 this has been taken up for consideration on 27.03.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$. All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 159/Khanan, dated 07.02.2025 by DMO, Hazaribag is within the permissible limit of EC.

The compliance report of previous EC has been issued by Member Secretary, JSPCB, Ranchi vide ref. no. 932, dated 27.03.2025.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.

The self certified compliance report has been submitted and also presented before the Committee.

EC Application for: Proposed Capacity- 74904.26 cum/annum or 202241.52 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Churchu Stone Mine-I	
2	Lessee:	:	M/S Ganesh Stone Works Partner- Sri Suresh Kumar & Sri Vikash Kumar	
3	Lessee Address	:	Mauza-Churchu, Thana No.- 166, Thana- Sadar, District- Hazaribagh, State-Jharkhand	
4	Lease Area	:	1.214 HA.	3.00 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 43 Lakhs	
7	EMP Budget	:	Capital: 12.01 Lakhs	Recurring: 7.09 Lakh / year
8	New or Expansion	:	DEIAA to SEIAA (re-appraisal of EC of DEIAA EC)	
9	Mineable Reserves	:	202241.52 TPA	
10	Mine Life	:	Upto the lease period i.e. 05.12.2017 to 04.12.2027.	
11	Man power	:	36	
12	Water Requirement	:	6.875 KLD= 0.36 KLD (Drinking & Domestic Uses) + 5.0 (Plantation) KLD + 1.515 KLD (Dust Suppression).	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	60 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Siwane Nadi, Approx. 0.13 Km towards East direction.	
17	Nearest Habitation	:	Churchu, Approx. 0.70 km towards WNW direction.	
18	Nearest Railway Station	:	Hazaribagh Town Railway Station, approx. 9.46 km towards SW.	
19	Nearest Air Port	:	Birsa Munda Airport Ranchi, Approx, 80.66 km towards SSW.	
20	Nearest Forest	:	Canary PF, Kanhari, Approx. 1.98 Km towards SSW.	
21	Road & Highways	:	NH 20, Hazaribagh Bypass Road, Approx. 2.46 km towards West direction.	

CO-ORDINATES

1	Latitude	From 24°02' 22.27" N	To24°02' 25.39" N
2	Longitude	From 85°24' 36.11" E	To85°24' 40.41" E

LAND DETAILS

Khata no.	Plot no.
149	10065 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	i. The Letter of Intent (LoI) has been issued by DMO, Hazaribag vide memo no. 2233/Khanan, dated 09.12.2016. ii. Lease deed : 05.12.2017 to 04.12.2027.
2	CO	:	The CO, Sadar, Hazaribag vide letter no. 649, dated 02.04.2016 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan.
3	DMO	:	DMO, Hazaribag vide memo no. 1314/Khanan, dated 14.11.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 395, dated 08.03.2025 certified that the proposed project site is outside Eco Sensitive Zone of Hazaribag Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Hazaribag East Forest Division vide letter no. 1301, dated 08.04.2016 certified that the distance of forest land is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Hazaribag District (Sl. no. 09, Page no. 72).
7	Gram Sabha	:	Gram Sabha conducted on 02.05.2016.
8	Scheme / Mine Plan Approval	:	i. Mine plan approved by Assistant Mining Officer, Hazaribag vide memo no. 984, Dated 01.06.2016. ii. Mining scheme approved by Additional Director, Geology, Hazaribag vide letter no. G/2022-23-232, dated 07.09.2022.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Hazaribag vide letter no. EC/DEIAA/2017-18/59, dated 22.08.2017.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by Member Secretary, JSPCB, Ranchi vide ref. no. 932, dated 27.03.2025.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2052902 /2018/83, dated 23.01.2018.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : i. JSPCB/RO/HZB/CTO-9865420 /2021/40, dated 13.02.2021.

			ii. JSPCB/RO/HZB/CTO-15260390/2023/15, dated 26.01.2023.
13	Production Report	:	Production report issued by DMO, Hazaribag vide memo no. 159/Khanan, dated 07.02.2025.
14	Qualified Person	:	Shri Surendra Sai vide letter dated 25.03.2025 affirmed that the mining scheme has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi-Mechanized Method	
2	Quarry Area	:	1.845 ha.	Life of Mine – Upto the lease period i.e. 05.12.2017 to 04.12.2027.
3	Waste Generation	:	0 cum	
4	Stripping Ratio	:	1:0.01	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m,	
7	Elevation of Mine	:	Highest elevation: 560 AMSL Lowest elevation: 530 AMSL	
8	Ultimate Working Depth	:	30 m AMSL	
9	Water Table	:	512 AMSL	
10	Topography of Mine	:	Undulating hillocks	
11	Explosive Requirement	:	2.25 Kg slurry explosive per day	
12	Diesel/Fuel requirement	:	516 Litres/day	

Production Details

Year	Production target as projected in Environment Clearance in tonnes	Actual production in tonnes
1st	40435.94	Nil
2nd	40458.00	25648
3rd	40476.98	33308
4th	40486.47	10880
5th	40384.13	Nil
Total	202241.52	69836

Land Use

Existing Land Use pattern

LAND USE PATTERN			
Land Utilization	Existing Land Use (Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)
Excavation	0.90	0.90	0.90 Ha. Area shall be left as rain water harvesting purpose.
Safety Barrier Plantation	0.00	0.314	0.314 Ha for plantation
Road	0.001	Comes under mining area.	Comes under mining area.
Balance	0.313	Nil	Nil
Total	**1.214**	**1.214**	**1.214**

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Location	No. of plants	Area to be covered (Ha)	Expected survival rate %
6th	Within safety barrier	101	0.0628	60-70%
7th		101	0.0628	
8th		101	0.0628	
9th		101	0.0628	
10th		101	0.0628	
Total		505	0.314	

- 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

S.NO	Particulars	Annual Budget	
A)Site Facilities		Capital Cost (In Lakh)	Recurring cost (In Lakh)

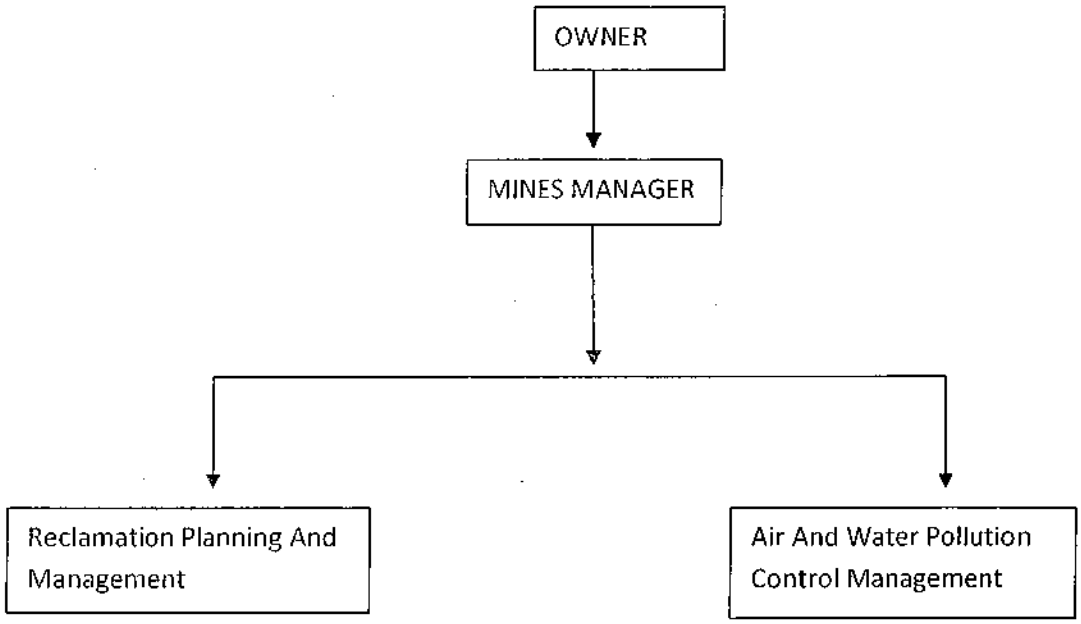
	a) Cost of Water Rs. 500/Tanker/day (Capacity 5.0 KL x 1 No.) (500X 1 X 300)	-	1.5
2.	Garland Drains and Settling Tanks (10m x 02 m x 03m x 2No.)	2.75	0.15
3	Road Development and Maintenance (Road length approx. 200m, Width 5.0 m.)	2.0	0.4
4.	Plantation over the periphery of the project (2000 saplings). 1625*40= 0.65 Lakh Tree Guard: 1625*100=1.62 Lakhs	2.27	0.2
5	PUC certification of vehicles and maintenance	-	0.10
Sub Total(A)		**7.02**	**2.35**
B)Labor Welfare			
1	Drinking Water Facility and rest shelter (10X20 m) with solar	1.0	0.10
2	Toilets 3 nos. (Rs 25000 x 3)	0.75	0.05
3	Occupational health checkup in a year for 34 workers (@twice/year) @200*2*34 and onsite first aid set-up	0.2	0.10
4	Provision of PPEs (helmets, safety shoes, safety glasses, gloves etc. (34 x 3000)	1.0	0.5
5	Vocational training on mining methods and safe work practices (@twice/year)@ 250 x 2 x 34)	-	0.2
Sub Total(B)		**2.95**	**0.95**
C)Emergency Rescue Plan			
1	Fire Extinguishers (2 Nos.) @ 50000 / firefighting and, first aid @ 2000 per kit	1.0	0.01
2	Safety signage and warning boards like sirens, red flags, cones etc.	1.0	0.05
Sub Total(C)		**2.0**	**0.06**
D)Solid Waste Management			
1	a) Bins 3 Nos. @ Rs. 1500 each	0.045	0.05
Sub Total(D)		**0.045**	**0.05**
E)Monitoring Program			
1	a) Ambient Air Quality	-	0.90
	b) Water Quality	-	0.80
	c) Noise Quality	-	0.18
	d) Soil Quality	-	0.80
	e) Biodiversity Survey	-	0.50
	f) Socio- Economy Survey	-	0.50
Sub Total(E)		-	**3.68**
Grand Total(A+B+C+D+E)		**12.01**	**7.09**

Environment Monitoring Programme:

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly

2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 stations	6 Monthly

Organization Structure



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 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 is done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

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

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

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

Preventive Measures:

Slope Failure

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

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

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

Control Measures

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

Dust generation during drilling

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

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

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

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned 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 Churchu Stone Mine - I of M/s Ganesh Stone Works (Partners : Shri Suresh Kumar & Shri Vikash Kumar), Mouza : Churchu, Thana no. : 166, Anchal : Sadar, Distt. : Hazaribag, Jharkhand (1.214 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. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.

II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"Ek Ped Ma Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged

photographs.

VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

****

14. Churchu Stone Mine - II by M/s Jai Hanuman Stone Works, Mouza : Churchu, Thana no. : 166, Anchal : Sadar, Distt. : Hazaribag, Jharkhand (1.618 Ha).

(Proposal no.: SIA/JH/MIN/ 507946 /2024)
Name of the consultant : Rian Enviro Pvt. Ltd., Patna, Bihar.

Application for Environmental Clearance (EC) (re-appraisal of Environment Clearance issued by DEIAA, Hazaribag).

The project has been granted EC by DEIAA, Hazaribag vide letter no. EC/DEIAA/2017-18/60, dated 22.08.2017.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Hazaribag which has been listed for appraisal on 25.03.2025 and on the request of PAs vide letter dated 25.03.2025 this has been taken up for consideration on 27.03.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 158/Khanan, dated 07.02.2025 by DMO, Hazaribag is within the permissible limit of EC.

The compliance report of previous EC has been issued by Member Secretary, JSPCB, Ranchi vide ref. no. 930, dated 27.03.2025.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.

The self certified compliance report has been submitted and also presented before the Committee.

EC Application for: Proposed Capacity- 22291.75 Cum Per Annum/ 60187.73 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Churchu Stone Mine-II	
2	Lessee:	:	M/S Jai Hanuman Stone Works Partner- Sri Rakesh Ranjan & Sri Kailash Prasad	
3	Lessee Address	:	Mauza-Churchu, Thana No.- 166, Thana- Sadar, District- Hazaribagh, State-Jharkhand	
4	Lease Area	:	1.618 HA.	Acres: 4.00 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	50 Lakhs	
7	EMP Budget	:	Capital: 10.95 Lakhs	Recurring: 7.00 Lakh / year
8	New or Expansion	:	DEIAA to SEIAA (re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	373078 TPA	
10	Mine Life	:	Up to the lease period i.e. 05.12.2017 to 04.12.2027.	
11	Man power	:	40	
12	Water Requirement	:	6.0 KLD= 0.4 KLD (Drinking & Domestic Uses) + 3.5 (Plantation) KLD + 2.1 KLD (Dust Suppression).	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	60 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Sawana River, Approx. 0.69 Km towards North direction.	

17	Nearest Habitation	:	Churchu, Approx. 0.80 km towards WNW direction.
18	Nearest Railway Station	:	Hazaribagh Town Railway Station, Approx. 9.66 km towards SW.
19	Nearest Air Port	:	Birsa Munda Airport, Ranchi, approx. 80.60 km towards SSW.
20	Nearest Forest	:	Karimati PF, Approx. 1.30 Kms towards the direction West.
21	Road & Highways	:	NH-522 (Bagodar- Hazaribagh Road, Approx. 5.19 km towards South direction. NH-20, Approx. 2.62 km. towards West direction. Hazaribag Bypass, Approx. 2.60 km. towards WSW direction.

CO-ORDINATES

1	Latitude		From 24°02' 25.7" N	To24°02' 30.4" N
2	Longitude		From 85°24' 42.4" E	To85°24'47.0" E

LAND DETAILS

Khata no.	Plot no.
149	10065 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	i. The Letter of Intent (LoI) has been issued by DMO, Hazaribag vide memo no. 2231/Khanan, dated 09.12.2016. ii. Lease deed : 05.12.2017 to 04.12.2027.
2	CO	:	The CO, Sadar, Hazaribag vide letter no. 650, dated 02.04.2016 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan.
3	DMO	:	DMO, Hazaribag vide memo no. 1313/Khanan, dated 14.11.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 394, dated 08.03.2025 certified that the proposed project site is outside Eco Sensitive Zone of Hazaribag Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Hazaribag East Forest Division vide letter no. 1300, dated 08.04.2016 certified that the distance of forest land is more than 250 meter from proposed project site.

6	DSR	:	This project is mentioned in approved DSR of Hazaribag District (Sl. no. 10, Page no. 72).
7	Gram Sabha	:	Gram Sabha conducted on 02.05.2016.
8	Scheme / Mine Plan Approval	:	i. Mine plan approved by Assistant Mining Officer, Hazaribag vide memo no. 983, Dated 01.06.2016. ii. Mining scheme approved by Additional Director, Geology, Hazaribag vide letter no. G/2022-23-233, dated 07.09.2022.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Hazaribag vide letter no. EC/DEIAA/2017-18/60, dated 22.08.2017.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by Member Secretary, JSPCB, Ranchi vide ref. no. 930, dated 27.03.2025.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2052935 /2018/81, dated 23.01.2018.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : i. JSPCB/RO/HZB/CTO-9703248 /2021/30, dated 03.02.2021. ii. JSPCB/RO/HZB/CTO-10012318/2023/30, dated 08.02.2023.
13	Production Report	:	Production report issued by DMO, Hazaribag vide memo no. 158/Khanan, dated 07.02.2025.
14	Qualified Person	:	Shri Surendra Sai vide letter dated 25.03.2025 affirmed that the mining scheme has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi-Mechanized Method	
2	Quarry Area	:	1.618 ha.	Life of Mine – Up to the lease period i.e.05.12.2017 to 04.12.2027.
3	Waste Generation	:	0 cum	
4	Stripping Ratio	:	1:0.01	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m,	
7	Elevation of Mine	:	Highest elevation: 560 AMSL Lowest elevation: 515 AMSL	
8	Ultimate Working Depth	:	45 m AMSL	

9	Topography of Mine	:	Undulating hillocks
10	Explosive Requirement	:	3.5 Kg Slurry Explosives per day
11	Diesel/Fuel requirement	:	516 Litres/day

Production Details

Year	Proposed Production of stone in cum	Proposed Production of stone in tonnes
1st	22007.7	59420.79
2nd	22007.7	59420.79
3rd	22007.7	59420.79
4th	22007.7	59420.79
5th	22291.75	60187.73
Total	**110322.55**	**297870.89**

Land Use

Existing Land Use pattern

Pattern of Utilization	Existing land use (Ha)	At the end of scheme period (Ha)	At conceptual period (Ha)
Excavation	1.19 Ha	1.19 Ha	1.19 Ha area shall be left a rain water harvesting purpose.
Safety Barrier Plantation	00	0.368 Ha	0.368 Ha Planation
Road	0.001	Comes under mining area.	Comes under mining area.
Blocked area Due To Rainfed Nala Safey	0.06	0.06	0.06 Ha Plantation
Balance	0.367 Ha	Nil	Nil
Total	**1.618 Ha**	**1.618 Ha**	**1.618 Ha**

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Area to be covered (Ha.)	Proposed No. of Saplings to be Planted
1st year	0.368 +0.06	590 + 96
2nd Year	-	Maintenance
3rd Year	-	Maintenance
4th Year	-	Maintenance

5th Year	-	Maintenance
Total	0.428	686

- 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

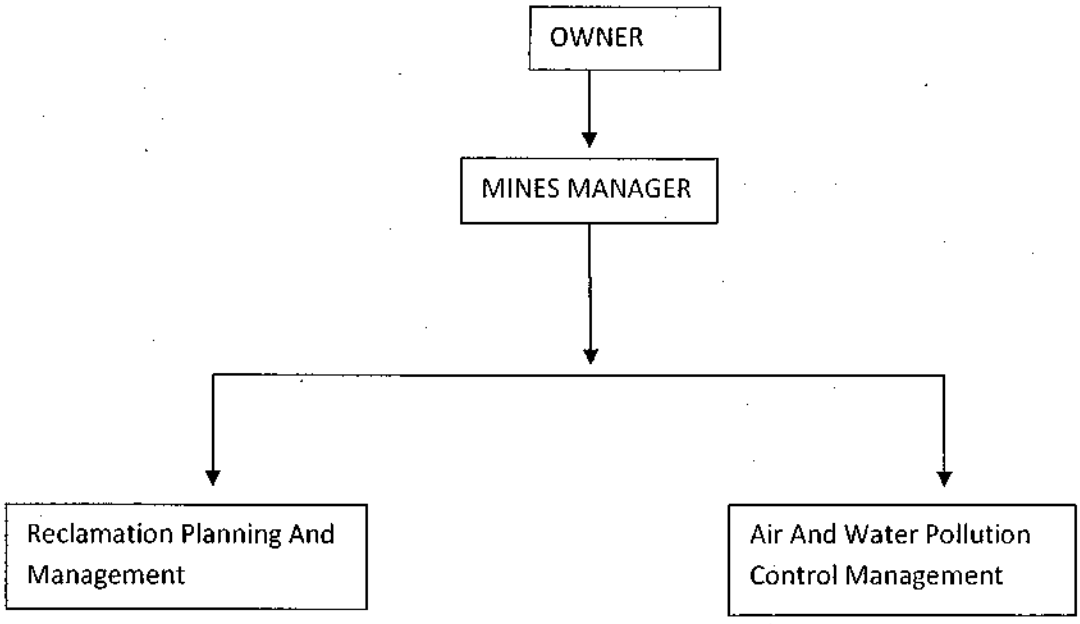
S.NO	Particulars	Annual Budget	
A)Site Facilities		Capital Cost (In Lakh)	Recurring cost (In Lakh)
	a) Cost of Water Rs. 500/Tanker/day (Capacity 5.0 Kl. x 1 No.) (500X 1 X 300)	-	1.5
2.	Garland Drains and Settling Tanks (10m x 02 m x 03m x 2No.)	2.75	0.15
3	Road Development and Maintenance (Road length approx. 350m, Width 5.0 m.)	2.0	0.4
4.	Plantation over the periphery of the project (686 saplings). 686*40= 0.27 Lakh Tree Guard: 686*100=0.7 Lakhs	1.0	0.10
5	PUC certification of vehicles and maintenance	-	0.10
	Sub Total(A)	**5.75**	**2.25**
B)Labor Welfare			
1	Drinking Water Facility and rest shelter (10X20 m) with solar	1.0	0.10
2	Toilets 3 nos. (Rs 25000 x 3)	0.75	0.05
3	Occupational health checkup in a year for 34 workers (@twice/year) @200*2*40 and onsite first aid set-up	0.2	0.10
4	Provision of PPEs (helmets, safety shoes, safety glasses, gloves etc. (40 x 3000)	1.2	0.5
5	Vocational training on mining methods and safe work practices (@twice/year)@ 250 x 2 x 40)	-	0.2
	Sub Total(B)	**3.15**	**0.95**
C)Emergency Rescue Plan			
1	Fire Extinguishers (2 Nos.) @ 50000 / firefighting and, first aid @ 2000 per kit	1.0	0.01
2	Safety signage and warning boards like sirens, red flags, cones etc.	1.0	0.05
	Sub Total(C)	**2.0**	**0.06**
D)Solid Waste Management			
1	a) Bins 3 Nos. @ Rs. 1500 each	0.045	0.05

Sub Total(D)		**0.045**	**0.05**
E)Monitoring Program			
1	a) Ambient Air Quality	-	0.90
	b) Water Quality	-	0.80
	c) Noise Quality	-	0.18
	d) Soil Quality	-	0.80
	e) Biodiversity Survey	-	0.50
	f) Socio- Economy Survey	-	0.50
Sub Total(E)		-	**3.68**
Grand Total(A+B+C+D+E)		**10.95**	**7.0**

Environment Monitoring Programme:

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 stations	6 Monthly

Organization Structure



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 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 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	Probable	Moderate	6

		(Bodily Injury)			
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

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 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 Churchu Stone Mine - II by M/s Jai Hanuman Stone Works, Mouza : Churchu, Thana no. : 166, Anchal : Sadar, Distt. : Hazaribag, Jharkhand (1.618 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. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.

II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"Ek Ped Ma Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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Consideration of proposals

1. **Tengikudar Stone Mine of M/s S.B.M. Minerals (Partners : (i) Shri Shiv Ratan Sangai (ii) Shri Vinod Kumar (iii) Shri Manoj Kumar), Village : Tengikudar, Thana : Jaridih, Distt. : Bokaro, Jharkhand (1.47 Ha).**

(Proposal no.: SIA/JH/MIN/ 530519 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 26.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 50,400Cum. / annum or 1,41,120 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Tengikudar Stone Mine	
2	Lessee:	:	M/s S.B.M. Minerals. Partners: 1. Shri Shiv Ratan Sangai 2. Shri Vinod Kumar 3. Shri Manoj Kumar	
3	Lessee Address	:	M/s S.B.M. Minerals. Partners: 1. Shri Shiv Ratan Sangai, S/O Late Shri Ramprasad Sangai R/o Ranchi Patna Road, Srhiramappartment, Thana – JhumriTilayya, Dist – Koderma 2. Shri Vinod Kumar, S/o Late Triloki Ram, Nagarkhara, Koderma, 3. Shri Manoj Kumar, S/o Shri Ram Nagina Singh, R/o plot no. 9 Cooperative colony, Anand Clinic, Kalkusuma, Dist.- Dhanbad.	
4	Lease Area	:	1.47 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs. 130.19 Lakhs	Recurring Cost: Rs. 21.41 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 9.468Lakhs	Recurring Cost: Rs. 5.923 Lakhs
8	New or Expansion	:	New	

9	Mineable Reserves	:	cum.: 2,30,760cum	Tonnes: 6,46,128 tons
10	Mine Life	:	5 years.	
11	Man power	:	26Person	
12	Water Requirement	:	6.78 KLD (Drinking: 0.435 KLD, Dust Suppression: 1.644 KLD, Plantation: 4.719 KLD	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	Nil 20 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	GobaiNadi at 2.7 km SW direction.	
17	Nearest Habitation	:	Tengikudar Village – 1.02 km in NW Direction	
18	Nearest Rail Station	:	Pundag Railway Station at aerial distance of 12.5 km in E direction.	
19	Nearest Air Port	:	Birsa Munda Airport (Ranchi) is at aerial distance of 68.70 km SW direction.	
20	Nearest Forest	:	DFO Territorial (Bokaro) Forest Division vide letter no.- 2200 Dated- 30.09.2023 certified that the distance of reserved / protected forest is more than 250 m from proposed project site	
21	Road & Highways	:	A motorable road is well connected to the mine site at a distance of 0.25Km East direction. (Jhalda – Gola) road is at an aerial distance of 11.63 Km SW direction.	

CO-ORDINATES

PointID	Latitude	Longitude
1	23°30'41.550"N	85°57'53.511"E
2	23°30'42.014"N	85°57'54.362"E
3	23°30'42.277"N	85°57'54.383"E
4	23°30'42.177"N	85°57'55.421"E
5	23°30'42.409"N	85°57'56.522"E
6	23°30'42.937"N	85°57'58.190"E
7	23°30'43.207"N	85°57'59.042"E
8	23°30'43.438"N	85°57'57.899"E
9	23°30'44.112"N	85°57'57.644"E
10	23°30'44.068"N	85°57'57.073"E
11	23°30'44.090"N	85°57'56.658"E
12	23°30'43.951"N	85°57'56.574"E
13	23°30'44.120"N	85°57'56.304"E
14	23°30'44.438"N	85°57'56.484"E
15	23°30'44.767"N	85°57'57.106"E
16	23°30'44.851" N	85°57'56.269" E
17	23°30'45.143" N	85°57'55.926" E
18	23°30'45.450" N	85°57'57.172" E
19	23°30'45.712" N	85°57'57.829" E
20	23°30'46.107" N	85°57'57.887" E
21	23°30'46.352" N	85°57'56.961" E

22	23°30'46.642" N	85°57'56.237" E
23	23°30'47.715" N	85°57'56.618" E
24	23°30'48.058" N	85°57'55.506" E
25	23°30'47.993" N	85°57'54.832" E
26	23°30'46.808" N	85°57'54.709" E
27	23°30'45.651" N	85°57'54.679" E
28	23°30'45.553" N	85°57'53.519" E
29	23°30'45.332" N	85°57'53.263" E
30	23°30'44.900" N	85°57'53.619" E
31	23°30'45.060" N	85°57'54.613" E
32	23°30'44.828" N	85°57'55.212" E
33	23°30'44.592" N	85°57'55.209" E
34	23°30'44.443" N	85°57'55.964" E
35	23°30'44.405" N	85°57'55.232" E
36	23°30'44.250" N	85°57'55.050" E
37	23°30'44.316" N	85°57'54.455" E
38	23°30'44.515" N	85°57'53.982" E
39	23°30'44.031" N	85°57'53.411" E
40	23°30'43.030" N	85°57'53.347" E
41	23°30'42.957" N	85°57'53.756" E

LAND DETAILS

Khata no.	Plot no.
10, 15, 17, 26 & 48	506 (P), 508, 509 (P), 511, 513 (P), 515 (P), 516 (P), 517 & 519

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Bokaro vide memo no. 919/Khanan, dated 13.06.2024.
2	CO	:	The CO, Jaridih (Bokaro) vide letter no. 608, dated 22.08.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Bokaro vide memo no. 1159/Khanan, dated 01.08.2024 certified that 01 other LoI (2.64 Acre) exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1259, dated 03.07.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Bokaro Forest Division vide letter no.

			2200, dated 30.09.2023 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 Bokaro District (Sl. no. 11, Page no. 85).
7	Gram Sabha	:	BDO, Jaridih (Bokaro) vide letter no. 1277, dated 18.09.2023 informed that Gram Sabha conducted on 14.09.2023.
8	Mine Plan Approval	:	Approved by Approved by Assistant Director, Geology, District Geological Office, Koderma vide Memo No. 68, dated 12.03.2025.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	0.723 Ha	Life of Mine – 5year
3	Waste Generation	:	25920 cum	
4	Stripping Ratio	:	32:25	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Elevation of Mine	:	385m–377m AMSL	
8	Ground Level Elevation	:	377 AMSL	
9	Ultimate Working Depth	:	26 m / 358 m AMSL	
10	Water Table	:	Post Monsoon –16.74m AMSL Pre Monsoon -20.28m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	64.68 kg Slurry explosives/day	
13	Diesel/Fuel requirement	:	HSD – 343 liters / day (102.9 KL/year)	

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Productic per day cu (O.B.
1st	39840	2.8	111552	133	372	20280	68

2nd	47520	2.8	133056	158	444	0	0
3rd	50400	2.8	141120	168	470	0	0
4th	49800	2.8	139440	166	465	0	0
5th	42840	2.8	119952	143	400	5640	19
Total	**230400**		**645120**	**168 (max)**	**470 (max)**	**25920**	**68 (max)**

Land Use pattern

SL	Pattern of Utilization	Present/Existing land use pattern in (Ha.)	Proposed Land use for current plan period (Ha.)	Land used at the conceptual stage i.e. end of mine life in (Ha.)	Area to be converted in the conceptual period.
1	Quarry	0.000	0.723	0.723	Water body
4	Mining Road	0.000	0.016	0.016	Water body
5	Garland drain	0.000	0.040	0.040	-
7	Green belt	0.000	0.000	0.044	Green Belt
8	Safety zone	0.000	0.647(44%)	0.647	Plantation
10	Unutilized	1.47	0.044	0.000	-
	Total	**1.47**	**1.47**	**1.47**	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone,Dumping Area, Unutilized Area, and Office Area.		0.647 Ha	1035
2	Along Approach Road		0.250km	332
TOTAL				**1367**

- 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 332 X 800 = Rs 2,65,600 (Gabion Plantation along approach road) 1241 X 400 = 4,96,400 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	7,62,000	76,200
3	Fencing	63,000	-
4	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs (3 point) - Rs.27,270 • Ground Water (2 point) - Rs.12,420 • Noise 24 hrs (3 point) - Rs.21,000 • Soil (3 point) -Rs.40,920 **Total -Rs. 1,01,610 (Per Season)** **At least two seasons in a Year -Rs. 1,01,610 x 2 = Rs. 2,03,220**	--	2,03,220
Total		8,25,000	5,79,420

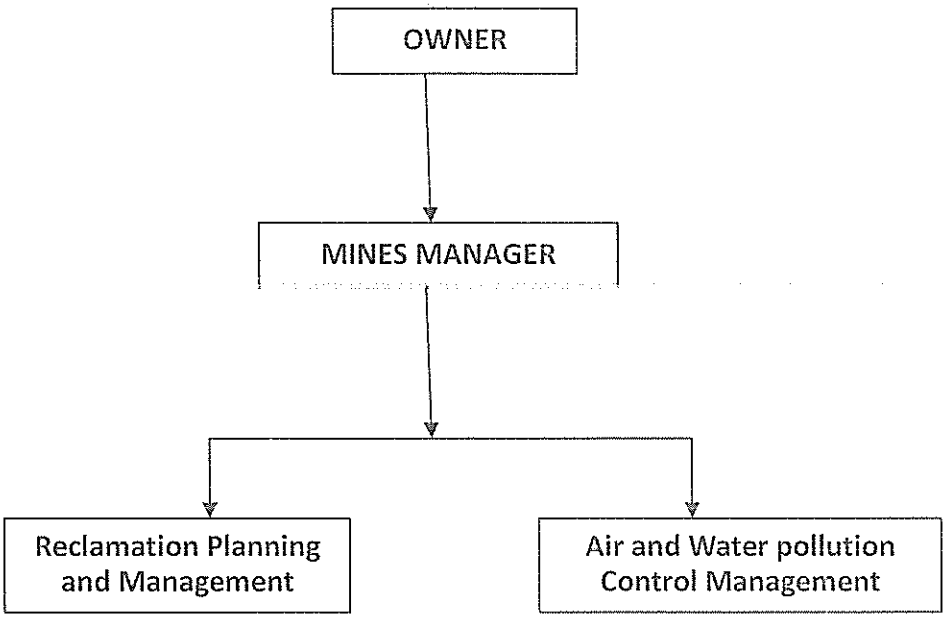
Environment Monitoring Programmed

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 Station	6 Monthly

Solid Waste Management

25920cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Organization Structure



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 generates 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 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 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, injuryor system damage

Risk Assessment Chart (Qualitative Method)

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

C4 (Minor)	*20*	*16*	12	8	4
C5 (Insignificant)	*25*	*20*	*15*	10	5

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone mining operation

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

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

Preventive Measures:

Face Stability

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

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

- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

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

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

Falls from the edge of a bench

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

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

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

Control Measures

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

Dust generation during drilling

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

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

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

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

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

Undertaking submitted affirming:

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

g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling 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 Tengikudar Stone Mine of M/s S.B.M. Minerals (Partners : (i) Shri Shiv Ratan Sangai (ii) Shri Vinod Kumar (iii) Shri Manoj Kumar), Village : Tengikudar, Thana : Jaridih, Distt. : Bokaro, Jharkhand (1.47 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). 10% of the total green belt proposed shall be allocated under this clause.
II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests .

Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

****

2. **Tengikudar Stone Mine of M/s S.B.M. Minerals (Partners : (i) Shri Shiv Ratan Sangai (ii) Shri Vinod Kumar (iii) Shri Manoj Kumar), Village : Tengikudar, Thana : Jaridih, Distt. : Bokaro, Jharkhand (1.068 Ha).**

(Proposal no.: SIA/JH/MIN/ 530374 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 26.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 33847 Cum. / annum or 94772 TPA

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Tengikudar Stone Mine
2	Lessee:	:	M/s S.B.M. Minerals. Partners: 1. Shri Shiv Ratan Sangai 2. Shri Vinod Kumar 3. Shri Manoj Kumar
3	Lessee Address	:	M/s S.B.M. Minerals. Partners: 1. Shri Shiv Ratan Sangai, S/O Late Shri Ramprasad Sangai R/o Ranchi Patna Road, Srhiramappartment, Thana – JhumriTilayya, Dist – Koderma 2. Shri Vinod Kumar, S/o Late Triloki Ram, Nagarkhara, Koderma,

			3. Shri Manoj Kumar, S/o Shri Ram Nagina Singh, R/o plot no. 9 Cooperative colony, Anand Clinic, Kalkusuma, Dist.- Dhanbad.	
4	Lease Area	:	1.068 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs. 172.04 Lakhs	Recurring Cost: Rs. 14.16 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 5.61 Lakhs	Recurring Cost: Rs. 5.63 Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 122950	Tonnes: 344260
10	Mine Life	:	5 years.	
11	Man power	:	26Person	
12	Water Requirement	:	7.355 KLD (Drinking: 0.390 KLD, Dust Suppression: 2.480 KLD, 4.485 KLD for Green Belt Development).	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	Nil 20 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	The Damodar River is the most important river in the district which flows from West to East in the Central part of the district.	
17	Nearest Habitation	:	Chainpur -0. 400 km	
18	Nearest Rail Station	:	The project area is about 12.5 km East direction (areal distance) from nearest railway station Pundag Railway Station	
19	Nearest Air Port	:	Birsa Munda Airpot (Ranchi) is about 68.70 km SW direction (areal distance) away from applied area.	
20	Nearest Forest	:	DFO Territorial (Bokaro) Forest Division vide letter no.- 2200 Dated- 30.09.2023 certified that the distance of reserved / protected forest is more than 250 m from proposed project site	
21	Road & Highways	:	A motorable road is well connected to applied lease area from Village Road 0.58 km South East direction this road after 6.5 km NW direction is well connected to (Khairachatar Main Road), from the mine site.	

CO-ORDINATES

PILLAR NO	LATITUDE	LONGITUDE
P1	23°30' 49.187" N	85°57' 53.016" E
P2	23°30' 48.858" N	85°57' 53.696" E
P3	23°30' 48.765" N	85°57' 54.868" E
P4	23°30' 48.626" N	85°57' 55.973" E
P5	23°30' 49.259" N	85°57' 55.803" E
P6	23°30' 49.553" N	85°57' 55.762" E
P7	23°30' 50.612" N	85°57' 56.440" E

P8	23°30' 50.989" N	85°57' 56.516" E
P9	23°30' 50.704" N	85°57' 58.224" E
P10	23°30' 50.602" N	85°57' 58.941" E
P11	23°30' 51.575" N	85°57' 59.270" E
P12	23°30' 51.816" N	85°57' 58.526" E
P13	23°30' 52.121" N	85°57' 57.096" E
P14	23°30' 52.656" N	85°57' 56.352" E
P15	23°30' 52.694" N	85°57' 55.824" E
P16	23°30' 52.119" N	85°57' 54.881" E
P17	23°30' 51.575" N	85°57' 54.383" E
P18	23°30' 51.011" N	85°57' 54.526" E
P19	23°30' 50.736" N	85°57' 54.228" E
P20	23°30' 50.326" N	85°57' 53.297" E

LAND DETAILS

Khata no.	Plot no.
10	437 & 440
07	435
26	439
15	436

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Bokaro vide memo no. 943/Khanan, dated 18.06.2024.
2	CO	:	The CO, Jaridih (Bokaro) vide letter no. 607, dated 22.08.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Bokaro vide memo no. 1186/Khanan, dated 05.08.2024 certified that 01 other LoI (3.64 Acre) exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 2252, dated 30.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Bokaro Forest Division vide letter no. 2201, dated 30.09.2023 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 Bokaro District (Sl. no. 12, Page no. 86).
7	Gram Sabha	:	BDO, Jaridih (Bokaro) vide letter no. 1276, dated 18.09.2023 informed that Gram Sabha conducted on 14.09.2023.
8	Mine Plan Approval	:	Approved by Assistant Director, Geology, District Geological Office, Koderma vide Memo No. 67, dated 12.03.2025.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	0.723 Ha	Life of Mine – 5year
3	Waste Generation	:	22322cum	
4	Stripping Ratio	:	07:05	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Elevation of Mine	:	377m–369m AMSL	
8	Ground Level Elevation	:	369 AMSL	
9	Ultimate Working Depth	:	26 m / 355m AMSL	
10	Water Table	:	Post Monsoon –120.70m AMSL Pre Monsoon -17.34m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	33.75 kg slurry explosives/day	
13	Diesel/Fuel requirement	:	HSD – 301.02 liters / day (90.03 KL/year)	

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.
1st	24374	2.8	68247	81	227	15932	53
2nd	33847	2.8	94772	113	316	6390	21
3rd	17568	2.8	49190	59	164	0	0

4th	26637	2.8	74584	89	249	0	0
5th	19383	2.8	54272	65	181	0	0
Total	**121809**	**2.8**	**341065**	**113 (Max.)**	**316 (Max.)**	**22322**	**53 (Max.)**

Land Use pattern

Si. No.	Pattern of Utilization	Present/Existing land use pattern in (acres)	Proposed Land use for current plan period (acres)
1	Mining Activities	0.00	1.47
2	Offices/ Store etc.	0.00	0.01
3	Dumping	0.00	0.11
4	Mining Road	0.00	0.01
5	Garland drain	0.00	0.02
6	Settling Tank	0.00	0.02
7	Safety Zone	0,00	0.90
8	Stone Stock yards	0.00	0.00
10	Unutilized	2.64	0.10
Total		**2.64**	**2.64**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone,Dumping Area, Unutilized Area, and Office Area.		0.092 Ha	147
2	Along Approach Road		0.620km	722
TOTAL				**2,090**

- 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: No. of Trees to Be Planted in Greenbelt/ Plantation area that includes Offices/ Stores/ Dumping/ Greenbelt = 0.092 x 1600 = 147 Trees & Safety Zone area = 0.364 Ha x 1600 = 576 Trees. Total trees = 723 X 400 = 2,89,200. Approach Road at a Distance interval of 3m Approach Road: 620m at Both side plantation on the village road (where the approach road is joining): 193 x 4 = 772 Trees X 400 = 3,08,800.	5,98,000	59,800
3	Fencing	100000	
4	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs. (3 point) - Rs.27,270 • Ground Water (2 point) - Rs.12,420 • Noise 24 hrs. (3 point) - Rs.21,000 • Soil (3 point) - Rs.40,920 **Total - Rs. 1,01,610 (Per Season)** **At least two seasons in a Year - Rs. 1,01,610 x 2 = Rs. 2,03,220** **Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022**	--	2,03,220
Total		**6,98,000**	**5,63,020**

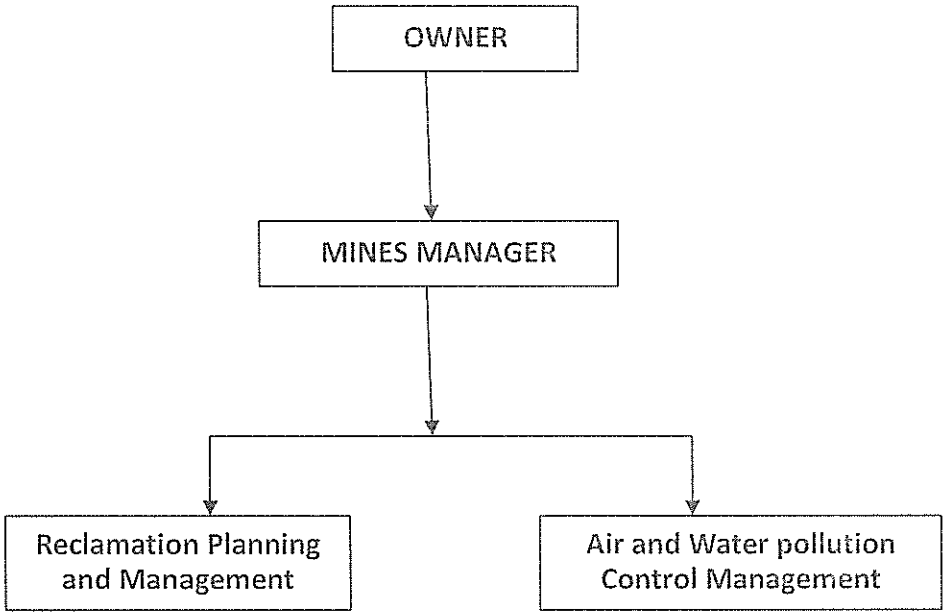
Environment Monitoring Programmed

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 Station	6 Monthly

Solid Waste Management

25920cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Organization Structure



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 generates 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 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 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, injuryor system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1

C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone mining operation

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

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

Preventive Measures:

Face Stability

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

- Overall slope angles of benches will be maintained at 45°

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

Drilling Operations

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

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

Falls from the edge of a bench

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

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

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

Control Measures

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

Dust generation during drilling

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

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

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

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

Undertaking submitted affirming:

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

g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling 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 Tengikudar Stone Mine of M/s S.B.M. Minerals (Partners : (i) Shri Shiv Ratan Sangai (ii) Shri Vinod Kumar (iii) Shri Manoj Kumar), Village : Tengikudar, Thana : Jaridih, Distt. : Bokaro, Jharkhand (1.068 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). 10% of the total green belt proposed shall be allocated under this clause.
II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests .

Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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3. **Gopalpur Stone Mine of M/s Pushprekha Stone (Partners : (i) Shri Aditya Nath Roy (ii) Shri Vivek Rungta (iii) Shri Bhudev Chandra Mahata), Village : Gopalpur, Thana : Chas, Distt. : Bokaro, Jharkhand (2.41 Ha).**

(Proposal no.: SIA/JH/MIN/ 530225 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 26.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 37350 Cum. (Max.) / 104580 Tons (Max.)

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Gopalpur Stone Mine
2	Lessee:	:	M/s Pushprekha Stone, Partners :- 1) Shri Aditya Nath Roy 2) Shri Vivek Rungta 3) Shri Bhudev Chandra Mah
3	Lessee Address	:	Partner 1) Shri Aditya Nath Roy, S/o Jagdev Roy Partner 2) Shri Vivek Rungta S/o Surendra Kumar Rungta Partner 3) Shri Bhudev Chandra Mahata

			S/o Kishan Lal Mahata R/o Vill + P.O. – Bhojudih, Thana – Chandankiyari Dist – Bokaro, Jharkhand	
4	Lease Area	:	2.41 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs. 146.74Lakhs	Recurring Cost: Rs. 19.99Lakhs
7	EMP Budget	:	Capital Cost: Rs. 6.648Lakhs	Recurring Cost: Rs. 5.697Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 113622cum	Tonnes: 552283tons
10	Mine Life	:	5 years.	
11	Man power	:	25Person	
12	Water Requirement	:	5.523KLD (Drinking: 0.375KLD, Dust Suppression: 0.444KLD, Plantation: 4.704KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	Nil 20 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Ganga River:-1.92 km in NW direction	
17	Nearest Habitation	:	Belut Village – 0.47 Km in SE Direction	
18	Nearest Rail Station	:	Rajhura Railway Station is at areal distance of 26.82 km in SW direction.	
19	Nearest Air Port	:	Birsa Munda Airport (Ranchi) is at areal distance of 164 km SE direction.	
20	Nearest Forest	:	DFO (Dumka), letter no.- 1520 Dated- 05.07.2023 certified that the distance of reserved / protected forest is more than 250 m from proposed project site. 610m From Notified Forest.	
21	Road & Highways	:	Approach Road is 141m starts from NW side of the lease area, after that, this road connects to village road.	

CO-ORDINATES

Point ID	Latitude	Longitude
P1	23° 41' 33.60957789" N	086° 15' 12.21958022" E
P2	23° 41' 34.10484851" N	086° 15' 12.41162392" E
P3	23° 41' 34.67012720" N	086° 15' 12.54337762" E
P4	23° 41' 34.87126665" N	086° 15' 12.06101765" E
P5	23° 41' 35.66945936" N	086° 15' 12.32511396" E
P6	23° 41' 35.53275195" N	086° 15' 12.80458926" E
P7	23° 41' 35.25671084" N	086° 15' 13.23265586" E
P8	23° 41' 34.63059314" N	086° 15' 13.00628847" E
P9	23° 41' 34.13348279" N	086° 15' 14.26389215" E
P10	23° 41' 33.93711472" N	086° 15' 14.92151665" E

P11	23° 41' 33.62292563" N	086° 15' 15.00729376" E
P12	23° 41' 33.49201344" N	086° 15' 15.35040219" E
P13	23° 41' 33.26946265" N	086° 15' 15.73639918" E
P14	23° 41' 33.57056076" N	086° 15' 16.00802669" E
P15	23° 41' 33.41505633" N	086° 15' 16.50885064" E
P16	23° 41' 33.40037490" N	086° 15' 17.45194136" E
P17	23° 41' 33.39750451" N	086° 15' 17.73456308" E
P18	23° 41' 33.20527535" N	086° 15' 17.76357880" E
P19	23° 41' 33.07893081" N	086° 15' 17.70293342" E
P20	23° 41' 33.01323165" N	086° 15' 17.88486956" E
P21	23° 41' 33.02839299" N	086° 15' 18.07691327" E
P22	23° 41' 33.08903837" N	086° 15' 18.14261243" E
P23	23° 41' 33.39405381" N	086° 15' 18.07432279" E
P24	23° 41' 33.90312996" N	086° 15' 17.82718532" E
P25	23° 41' 33.95851355" N	086° 15' 18.11749582" E
P26	23° 41' 34.31998597" N	086° 15' 18.28911837" E
P27	23° 41' 34.74919532" N	086° 15' 18.59719619" E
P28	23° 41' 35.03032629" N	086° 15' 19.07209954" E
P29	23° 41' 35.47837843" N	086° 15' 19.25198718" E
P30	23° 41' 36.11311823" N	086° 15' 19.11767108" E
P31	23° 41' 36.39418955" N	086° 15' 19.22799192" E
P32	23° 41' 36.20536409" N	086° 15' 19.51582238" E
P33	23° 41' 36.03844301" N	086° 15' 20.03869577" E
P34	23° 41' 35.74413465" N	086° 15' 20.37688453" E
P35	23° 41' 35.44543343" N	086° 15' 20.83499837" E
P36	23° 41' 35.06986032" N	086° 15' 20.78462984" E
P37	23° 41' 34.90839980" N	086° 15' 20.63918062" E
P38	23° 41' 34.73657123" N	086° 15' 20.35111506" E
P39	23° 41' 34.48893592" N	086° 15' 20.61896549" E
P40	23° 41' 34.44850567" N	086° 15' 20.70993356" E
P41	23° 41' 34.31710734" N	086° 15' 20.96262265" E
P42	23° 41' 34.12506363" N	086° 15' 21.24058065" E
P43	23° 41' 33.90775102" N	086° 15' 21.49326973" E
P44	23° 41' 33.73086866" N	086° 15' 21.63982940" E
P45	23° 41' 33.58430899" N	086° 15' 21.80660420" E
P46	23° 41' 33.53882495" N	086° 15' 22.00370169" E
P47	23° 41' 33.49433315" N	086° 15' 22.27749736" E
P48	23° 41' 33.24317872" N	086° 15' 22.07066430" E
P49	23° 41' 32.83255895" N	086° 15' 21.75480294" E
P50	23° 41' 32.80886935" N	086° 15' 21.51790692" E
P51	23° 41' 32.35876691" N	086° 15' 21.33628664" E
P52	23° 41' 32.15345703" N	086° 15' 21.25732130" E
P53	23° 41' 31.90866447" N	086° 15' 21.23363169" E
P54	23° 41' 31.57701005" N	086° 15' 21.27311436" E
P55	23° 41' 31.37170016" N	086° 15' 21.38366584" E
P56	23° 41' 31.23745908" N	086° 15' 21.37576931" E

P57	23° 41' 31.09532147" N	086° 15' 21.25732130" E
P58	23° 41' 31.01414620" N	086° 15' 21.50200563" E
P59	23° 41' 30.71670440" N	086° 15' 21.36746578" E
P60	23° 41' 30.56641590" N	086° 15' 21.20380455" E
P61	23° 41' 30.78918412" N	086° 15' 20.61433621" E
P62	23° 41' 30.52781782" N	086° 15' 20.50160662" E
P63	23° 41' 30.11709904" N	086° 15' 20.38408003" E
P64	23° 41' 29.92821221" N	086° 15' 20.82780287" E
P65	23° 41' 29.49552931" N	086° 15' 20.74865231" E
P66	23° 41' 29.26710771" N	086° 15' 20.54477965" E
P67	23° 41' 28.99256238" N	086° 15' 20.41286206" E
P68	23° 41' 29.02331147" N	086° 15' 20.22817742" E
P69	23° 41' 29.17281088" N	086° 15' 19.92185488" E
P70	23° 41' 29.43403120" N	086° 15' 20.02670326" E
P71	23° 41' 29.56800921" N	086° 15' 19.70530402" E
P72	23° 41' 30.05340466" N	086° 15' 19.99792124" E
P73	23° 41' 30.31916394" N	086° 15' 20.08186881" E
P74	23° 41' 30.67058094" N	086° 15' 20.27374895" E
P75	23° 41' 31.21527678" N	086° 15' 20.71267478" E
P76	23° 41' 31.42393026" N	086° 15' 20.10345532" E
P77	23° 41' 31.64136905" N	086° 15' 19.61416095" E
P78	23° 41' 31.78193548" N	086° 15' 19.07929505" E
P79	23° 41' 31.86759314" N	086° 15' 18.63077521" E
P80	23° 41' 31.86133905" N	086° 15' 18.13165209" E
P81	23° 41' 32.05867554" N	086° 15' 18.01915725" E
P82	23° 41' 31.96203617" N	086° 15' 17.77451007" E
P83	23° 41' 31.55674771" N	086° 15' 17.92230600" E
P84	23° 41' 31.06812111" N	086° 15' 17.64259247" E
P85	23° 41' 30.32456315" N	086° 15' 17.63421816" E
P86	23° 41' 30.47774530" N	086° 15' 17.22849247" E
P87	23° 41' 30.67439806" N	086° 15' 16.74203566" E
P88	23° 41' 30.98490241" N	086° 15' 16.11481687" E
P89	23° 41' 30.96213209" N	086° 15' 15.97819495" E
P90	23° 41' 31.26315620" N	086° 15' 15.36436225" E
P91	23° 41' 31.47883905" N	086° 15' 15.39519627" E
P92	23° 41' 31.55443356" N	086° 15' 15.19513589" E
P93	23° 41' 31.70945592" N	086° 15' 15.17693261" E
P94	23° 41' 31.80170264" N	086° 15' 14.86992438" E
P95	23° 41' 31.94885808" N	086° 15' 14.33026147" E
P96	23° 41' 32.15092218" N	086° 15' 13.64189145" E
P97	23° 41' 32.22120533" N	086° 15' 13.27492067" E
P98	23° 41' 32.47894584" N	086° 15' 12.61802037" E
P99	23° 41' 32.70858968" N	086° 15' 12.65359899" E
P100	23° 41' 32.98061896" N	086° 15' 12.75324773" E
P101	23° 41' 33.03850056" N	086° 15' 12.36573559" E
P102	23° 41' 33.54324701" N	086° 15' 12.43689283" E

LAND DETAILS

Khata no.	Plot no.
03, 94, 95 & 125	147 to 153, 156, 157, 190, 196 to 203, 155, 179, 180, 182, 183, 187, 188, 194, 226, 229, 181, 191, 184 to 186, 192, 193, 225 & 227

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Bokaro vide memo no. 1432/Khanan, dated 28.09.2024.
2	CO	:	The CO, Chas (Bokaro) vide letter no. 1292, dated 08.05.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Bokaro vide memo no. 1573/M, dated 25.10.2024 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1555, dated 21.07.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Bokaro Forest Division vide letter no. 1520, dated 05.07.2023 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 Bokaro District (Sl. no. 16, Page no. 87).
7	Gram Sabha	:	BDO, Chas (Bokaro) vide letter no. 1194, dated 09.10.2023 informed that Gram Sabha conducted on 12.06.2023.
8	Mine Plan Approval	:	Approved by Approved by Assistant Director, Geology, District Geological Office, Koderma vide Letter No. 63, dated 07.03.2025.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay vide letter dated 25.03.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OpencastMechanized Method	
2	Quarry Area	:	2.41 Ha	Life of Mine – 5year

3	Waste Generation	:	30266cum	
4	Stripping Ratio	:	44:05	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Elevation of Mine	:	183m–178m AMSL	
8	Ground Level Elevation	:	178 AMSL	
9	Ultimate Working Depth	:	162.7 m AMSL	
10	Water Table	:	Post Monsoon –17.71m AMSL Pre Monsoon – 21.26 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	36.96 kg slurry explosive	
13	Diesel/Fuel requirement	:	HSD – 314.88 liters / day (94.46 KL/year)	

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.
1st	37350	2.8	104580	125	349	13746	46
2nd	24780	2.8	69384	83	231	9072	30
3rd	19980	2.8	55944	67	186	7448	0
4th	18048	2.8	50534	60	168	0	0
5th	13464	2.8	37699	45	126	0	0
Total	113622	2.8	318142	125 (Max.)	349 (Max.)	30266	46 (Max.)

Land Use pattern

SL	Pattern of Utilization	Present/Existing land use pattern in (Ha.)	Proposed Land use for current plan period (Ha.)	Land to be used in remaining period of the life of the mine. (Ha.)	Land used at the conceptual stage i.e. end of mine life in (Ha.)	Area to be converted in the conceptual period.
1	Quarry	0.00	1.404	0.00	1.404	Water body
2	Offices/ Store etc.	0.00	0.00	0.00	0.00	Plantation
3	Dumping	0.00	0.080	0.00	0.080	Plantation -
4	Mining Road	0.00	0.024	0.00	0.024	Water body
5	Garland drain	0.00	0.060	0.00	0.060	-
6	Settling Tank	0.00	0.008		0.008	-
7	Safety zone	0.00	0.837	0.00	0.837	Green Belt
8	Stone Stock yards	0.00	0.000	0.00	0.000	
9	Unutilized	2.41	0.000	0.00	0.000	Plantation
	Total	**2.41**	**2.41**	**0.00**	2.41	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone,Dumping Area, Unutilized Area, and Office Area.		0.921 Ha	1474
2	Along Approach Road		0.111km	188
TOTAL				1568

- 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 94 X 800 = Rs 75,200 (Gabion Plantation along approach road) 1453 X 400 = Rs 5,89,600 (Plantation within lease area), (also includes Fertilizer, Pesticides, Maintenance)	6,64,800	66,480
3	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs (3 point) -Rs.27,270 • Ground Water (2 point) -Rs.12,420 • Noise 24 hrs (3 point) -Rs.21,000 • Soil (3 point) -Rs.40,920 Total -Rs. 1,01,610 (Per Season) At least two seasons in a Year -Rs. 1,01,610 x 2 = Rs. 2,03,220	--	2,03,220
Total		Rs 6,64,800	Rs 5,69,700

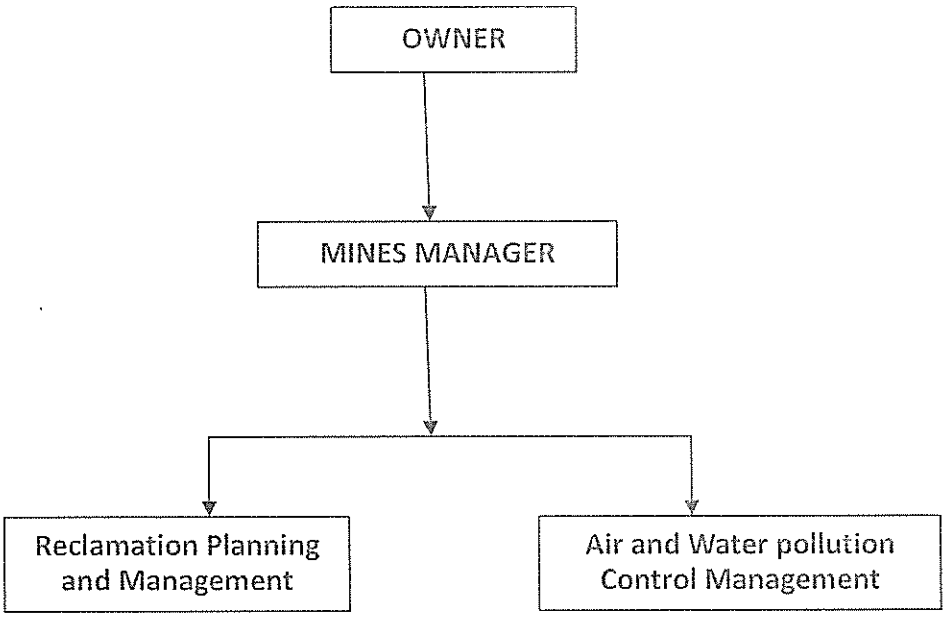
Environment Monitoring Programmed

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 Station	6 Monthly

Solid Waste Management

30266cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Organization Structure



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 generates 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 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 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, injuryor system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)

C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone mining operation

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

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

Preventive Measures:

Face Stability

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

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

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

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

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

- Untrained drivers
- Overturning vehicles

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

Transportation

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

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

Undertaking submitted affirming:

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

f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling 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 Gopalpur Stone Mine of M/s Pushprekha Stone (Partners : (i) Shri Aditya Nath Roy (ii) Shri Vivek Rungta (iii) Shri Bhudev Chandra Mahata), Village : Gopalpur, Thana : Chas, Distt. : Bokaro, Jharkhand (2.41 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). 10% of the total green belt proposed shall be allocated under this clause.
II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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4. **Chainpur Stone Mine of M/s Santhal Enterprises (Prop. : Shri Dilip Kumar Yadav), Village : Chainpur, Thana : Balidih, Distt. : Bokaro, Jharkhand (2.17 Ha).**

(Proposal no.: SIA/JH/MIN/ 530324 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 26.03.2025.

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

Application for Environmental Clearance (EC).

Proposed Capacity- 30210 Cum. (Max.) / 84588Tons (max.).

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Chainpur Stone Mine Project Type –Stone Mine
2	Lessee:	:	M/S Santhal Enterprises Shri Dilip Kumar Yadav (Proponent)
3	Lessee Address	:	M/S Santhal Enterprises Shri Dilip Kumar Yadav, S/o Late Guru Prasad Yadav, Address- Q.No.- 79, Sector- 4F, Bokaro Steel City, District- Bokaro.
4	Lease Area	:	2.17 Ha

5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs 121.44 Lakhs	Recurring Cost: Rs 9.84Lakhs
7	EMP Budget	:	Capital Cost: Rs. 7.04 Lakhs	Recurring Cost: Rs. 5.63 Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	1,68,344 cum	4,54,528.8 Tonnes
10	Mine Life	:	10 years.	
11	Man power	:	28Person	
12	Water Requirement	:	5.416 KLD (Drinking: 0.45 KLD, Dust Suppression: 0.880 KLD, Plantation: 4.086 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	Nil 20 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Amanat River – 3.26 km – N direction (arial distance).	
17	Nearest Habitation	:	Chainpur -0. 400 km	
18	Nearest Rail Station	:	Birsa Munda Airport (Ranchi) is at aerial distance of 80.7 km SW direction	
19	Nearest Air Port	:	Deoghar Airport is at Aerial distance of 124 km SW direction.	
20	Nearest Forest	:	DFO letter no.- 667 Dated: 23/02/2019 certified that the distance of reserved / protected forest is 380 m from proposed project site.	
21	Road & Highways	:	5.67 km and after this the road connects to NH- 320 Bokaro Steel City Railway Station Road.	

CO-ORDINATES

Point Name	Latitude	Longitude
1	23° 35' 48.10394010" N	086° 03' 18.40178816" E
2	23° 35' 48.77750705" N	086° 03' 18.71655188" E
3	23° 35' 49.26445904" N	086° 03' 18.96591648" E
4	23° 35' 49.47140355" N	086° 03' 18.48419815" E
5	23° 35' 49.68304664" N	086° 03' 17.96950212" E
6	23° 35' 49.99374859" N	086° 03' 17.24764438" E
7	23° 35' 50.07339192" N	086° 03' 17.16948941" E
8	23° 35' 50.55747087" N	086° 03' 17.17037049" E
9	23° 35' 51.19500157" N	086° 03' 17.20404040" E
10	23° 35' 51.61941303" N	086° 03' 17.32130659" E

11	23° 35' 51.65251248" N	086° 03' 17.60951995" E
12	23° 35' 51.40964199" N	086° 03' 17.86555773" E
13	23° 35' 51.45630398" N	086° 03' 18.17801444" E
14	23° 35' 51.85756426" N	086° 03' 18.04323655" E
15	23° 35' 52.40653557" N	086° 03' 17.92629211" E
16	23° 35' 52.24945294" N	086° 03' 18.59533258" E
17	23° 35' 52.66352469" N	086° 03' 18.75345013" E
18	23° 35' 53.08649239" N	086° 03' 18.90211466" E
19	23° 35' 53.72418389" N	086° 03' 19.12129781" E
20	23° 35' 54.33148811" N	086° 03' 19.32045539" E
21	23° 35' 54.74962000" N	086° 03' 19.16339450" E
22	23° 35' 55.35177294" N	086° 03' 18.80675587" E
23	23° 35' 55.70813643" N	086° 03' 18.58393644" E
24	23° 35' 56.23042368" N	086° 03' 18.63562877" E
25	23° 35' 56.54694812" N	086° 03' 18.70375498" E
26	23° 35' 56.21446147" N	086° 03' 19.36181247" E
27	23° 35' 55.92966596" N	086° 03' 19.97226021" E
28	23° 35' 55.33842163" N	086° 03' 21.09707314" E
29	23° 35' 55.00276948" N	086° 03' 21.70490476" E
30	23° 35' 54.91485382" N	086° 03' 21.72137614" E
31	23° 35' 54.46117415" N	086° 03' 21.54831035" E
32	23° 35' 53.97029610" N	086° 03' 21.26046283" E
33	23° 35' 53.84818091" N	086° 03' 20.96106487" E
34	23° 35' 53.72605750" N	086° 03' 20.66380222" E
35	23° 35' 53.01360848" N	086° 03' 20.47197986" E
36	23° 35' 52.40338220" N	086° 03' 20.12925234" E
37	23° 35' 51.71738995" N	086° 03' 21.30033741" E
38	23° 35' 51.03139513" N	086° 03' 22.47141914" E
39	23° 35' 50.77644350" N	086° 03' 22.89462726" E
40	23° 35' 50.57469083" N	086° 03' 22.88141822" E
41	23° 35' 50.23623065" N	086° 03' 22.85234641" E
42	23° 35' 49.69148710" N	086° 03' 22.38194084" E
43	23° 35' 49.29632571" N	086° 03' 21.99714380" E
44	23° 35' 48.86770243" N	086° 03' 21.56016152" E
45	23° 35' 48.47407291" N	086° 03' 21.12281535" E
46	23° 35' 48.23231513" N	086° 03' 20.73069057" E
47	23° 35' 47.81772208" N	086° 03' 20.29866453" E
48	23° 35' 47.30903056" N	086° 03' 19.84926373" E
49	23° 35' 47.54692000" N	086° 03' 19.36435359" E
50	23° 35' 47.86574352" N	086° 03' 18.84376265" E

LAND DETAILS

Khata no.	Plot no.
67	154 & 162
08	159
04	163

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Bokaro vide memo no. 2950/Khanan, dated 26.10.2019.
2	CO	:	The CO, Chas (Bokaro) vide letter no. 149, dated 22.01.2019 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Bokaro vide memo no. 325/Khanan, dated 07.03.2025 certified that 01 LoI (5.24 Acre) exists within 500 m radius from proposed project site and total area is 10.61 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1143, dated 29.06.2020 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Bokaro Forest Division vide letter no. 667, dated 23.02.2019 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 Bokaro District (Sl. no. 01, Page no. 82).
7	Gram Sabha	:	BDO, Chas (Bokaro) vide memo no. 1211, dated 22.10.2024 informed that Gram Sabha conducted on 26.05.2019.
8	Mine Plan Approval	:	Approved by District Mining Officer, Bokaro vide Memo No. 324/M, dated 06.03.2025.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	2.17Ha. (During plan period)	Life of Mine – 10year

3	Waste Generation	:	24996cum. O.B (During plan period)
4	Stripping Ratio	:	12:05
5	Working Days	:	300
6	Benches: size	:	6 m x 6 m
7	Elevation of Mine	:	262 to 256 m AMSL
8	Ground Level Elevation	:	256 m AMSL
9	Ultimate Working Depth	:	38 m& 221.7m AMSL
10	Water Table	:	(During pre-monsoon:- 1539m AMSL) (During post-monsoon 11.711 m AMSL)
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	27.72 kg slurry explosives/day
13	Diesel/Fuel requirement	:	HSD – 273.3 liters / day (81.99 KL/year)

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.)
1st	17892	2.8	50098	60	167	3612	12
2nd	30210	2.8	84588	101	282	10890	36
3rd	29070	2.8	81396	97	271	10494	35
4th	22908	2.8	64142	76	214	0	0
5th	18744	2.8	52483	62	175	0	0
Total	118824	2.8	332707	101 (Max.)	282 (Max.)	24996	36 (Max.)

LAND USE

Existing, Proposed & Conceptual Land Use

SL. No.	Pattern of Utilization	Present/Existing land use pattern in (Ha.)	Land used at the conceptual stage i.e. end of mine life in (Ha.)	Area to be converted in the conceptual period.
1	Mining Activities	0.000	1.214	Water body

2	Offices/ Store etc.	0.000	0.000	Plantation
3	Dumping	0.000	0.000	Plantation
4	Mining Road	0.000	0.000	Water body
5	Garland drain	0.000	0.0411	Included within the Safety Zone
6	Settling Tank	0.000	0.000	-
7	Green belt	0.000	0.000	Green Belt
8	Safety Zone	0.000	0.759	Plantation
9	Stone Stock yards	0.000	0.000	
10	Unutilized	2.17	0.000	
11	Crusher	0.000	0.197	
Total		2.17	2.17	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.159 Ha	148
2	Along Approach Road		0.110 km	1214
TOTAL				1362

- 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
2	Plantation 148 X 800 = Rs 1,18,400 (Gabion Plantation along approach road) 1214 X 400 = 4,85,600 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	6,04,000	60,400

3	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs (3 point) - Rs.27,270 • Ground Water (2 point) - Rs.12,420 • Noise 24 hrs (3 point) - Rs.21,000 • Soil (3 point) -Rs.40,920 **Total -Rs. 1,01,610** **(Per Season)** **At least two seasons in a Year -Rs. 1,01,610 x 2** **= Rs. 2,03,220** **Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022** *Source: CPCB Notification, New Delhi 23 Feb 2022*	--	2,03,220
4	**Fenceing**	100000	
Total		**7,04,000**	5,63,620

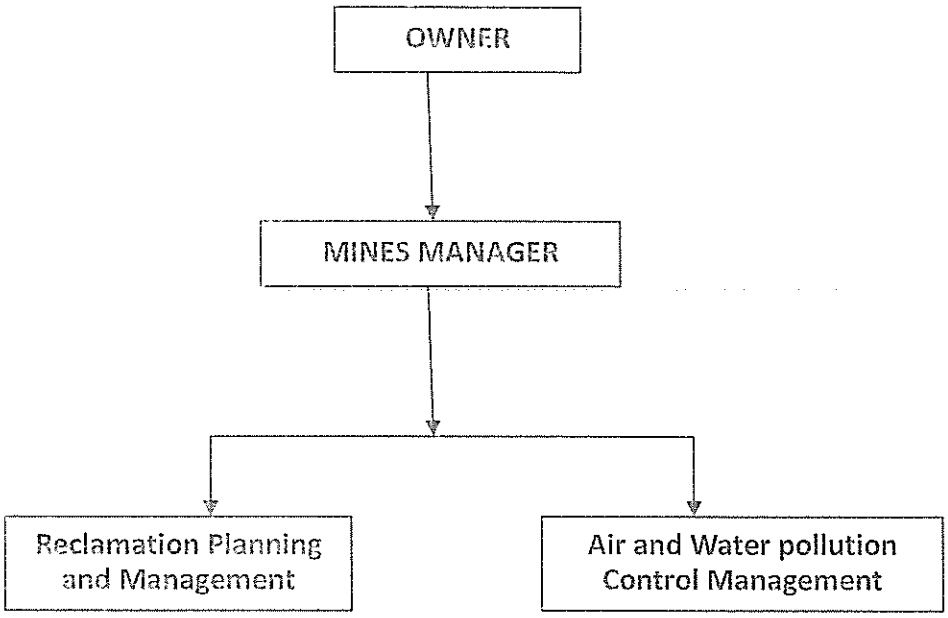
Environment Monitoring Programme

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	One Day Monitoring (within 6 months)
2.	Water	2 stations	One Day Monitoring (within 6 months)
3.	Soil	3 stations	One Day Monitoring (within 6 months)
4.	Noise	3 stations	One Day Monitoring (within 6 months)

Solid Waste Management

24996cum.O.B shall be generated during the plan period which shall be backfilled within the exhausted quarry.

Organization Structure



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 generates 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 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 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, injuryor 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**"

<u>Preventive Measures:</u>

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 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 Chainpur Stone Mine of M/s Santhal Enterprises (Prop. : Shri Dilip Kumar Yadav), Village : Chainpur, Thana : Balidih, Distt. : Bokaro, Jharkhand (2.17 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). 10% of the total green belt proposed shall be allocated under this clause.
II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests .

Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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5. Telo Stone Mine of M/s YAS Minerals (Partners : (i) Shri Yogendra Prasad (ii) Shri Arjun Prasad (iii) Shri Suresh Prasad), Village : Telo, Thana : Chandrapura, Distt. : Bokaro, Jharkhand (1.78 Ha).

(Proposal no.: SIA/JH/MIN/ 530226 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 26.03.2025.

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

Application for Environmental Clearance (EC).

EC application for : Proposed Capacity- 39744 Cum. (Max.) / 111283 Tons

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Telo Stone Mine Project Type – Stone Mine
2	Lessee:	:	M/S YAS Minerals Partners 1. Shri Yogendra Prasad 2. Shri Arjun Prasad 3. Shri Suresh Prasad
3	Lessee Address	:	M/S YAS Minerals Partners Shri Yogendra Prasad S/o Shri Uma CharanMahto, Vill + P.O. – Telo, Tola - Madap,

			Thana – Chandrapura, District- Bokaro 2. Shri Arjun Prasad S/o Late Gulab Chandra Kumar, Vill + P.O - Telo, Tola- Lalbandh, Thana- Chandrapura, District- Bokaro 3. Shri Suresh Prasad S/o Late Jagdish Mahto, Vill + P.O- Telo, Mirchaitanr, Thana- Chandrapura, District- Bokaro
4	Lease Area	:	1.78 Ha
5	Type of Land	:	Non Forest Raiyati Land
6	Project Cost		Capital Cost – Rs. 173.14Lakhs / Recurring Cost – Rs. 17.09 Lakhs
7	EMP Budget	:	Capital: Rs. 7.612 Lakhs / Recurring: Rs. 5.793 Lakhs
8	New or Expansion	:	New
9	Mineable Reserves	:	Cum: 250920 Cum / Tonnes: 702576 Tons
10	Mine Life	:	05 years.
11	Man power	:	30Person
12	Water Requirement	:	6.159 KLD (Drinking: 0.450 KLD, Dust Suppression: 0.600 KLD, Plantation: 5.109 KLD
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	Nil 20 KVA D.G. Set proposed
15	Crusher	:	No crusher
16	Nearest Water Body	:	Damodar River at 2.0 km N direction.
17	Nearest Habitation	:	JirikdangaVillage at 0.5km
18	Nearest Rail Station	:	Chandrapura Railway Station at aerial distance of 6.77 km in S direction.
19	Nearest Air Port	:	Birsa Munda Airport (Ranchi) is at aerial distance of 97 km SW direction.
20	Nearest Forest	:	DFO Territorial (Bokaro) Forest Division vide letter no.- 2175 Dated- 16/10/2024 certified that the distance of reserved / protected forest is more than 250 m from proposed project site..
21	Road & Highways	:	The distance of Approach Road is connected to the Mine Site at a distance of 150m NE direction. (Dumri-Bermo-Jaina) Road is at aerial distance of 7.30 Km West Direction.

CO-ORDINATES

Point ID	Latitude	Longitude
P1	23° 48' 57.51294644" N	086° 06' 29.34450119" E

P2	23° 48' 57.05788388" N	086° 06' 29.41226034" E
P3	23° 48' 56.98987463" N	086° 06' 28.53431112" E
P4	23° 48' 56.91817995" N	086° 06' 27.60878589" E
P5	23° 48' 56.85361234" N	086° 06' 26.77526585" E
P6	23° 48' 56.53901096" N	086° 06' 26.65463426" E
P7	23° 48' 56.68180868" N	086° 06' 26.49081910" E
P8	23° 48' 56.97526621" N	086° 06' 26.27782091" E
P9	23° 48' 57.16555753" N	086° 06' 26.20945977" E
P10	23° 48' 57.31012813" N	086° 06' 26.30422092" E
P11	23° 48' 57.41201640" N	086° 06' 26.23592665" E
P12	23° 48' 57.30340163" N	086° 06' 26.01002880" E
P13	23° 48' 57.65744453" N	086° 06' 25.71416085" E
P14	23° 48' 58.10769540" N	086° 06' 25.42085694" E
P15	23° 48' 58.40657095" N	086° 06' 25.43891811" E
P16	23° 48' 58.76101876" N	086° 06' 25.48652629" E
P17	23° 48' 58.85263324" N	086° 06' 25.60144503" E
P18	23° 48' 58.99560940" N	086° 06' 25.68204710" E
P19	23° 48' 59.17554115" N	086° 06' 25.71964467" E
P20	23° 48' 59.53299030" N	086° 06' 25.80829947" E
P21	23° 48' 59.64262795" N	086° 06' 25.27639082" E
P22	23° 49' 00.16935318" N	086° 06' 25.60705508" E
P23	23° 49' 00.74299560" N	086° 06' 25.97756519" E
P24	23° 49' 01.22862227" N	086° 06' 26.35169757" E
P25	23° 49' 01.56444355" N	086° 06' 26.68351622" E
P26	23° 49' 01.88344351" N	086° 06' 26.94763152" E
P27	23° 49' 02.06817502" N	086° 06' 27.18567676" E
P28	23° 49' 02.34407052" N	086° 06' 27.36278600" E

P29	23° 49' 02.59966069" N	086° 06' 27.53772105" E
P30	23° 49' 02.37005318" N	086° 06' 28.12472419" E
P31	23° 49' 02.07930354" N	086° 06' 28.75647893" E
P32	23° 49' 01.68166972" N	086° 06' 29.51177094" E
P33	23° 49' 01.34563943" N	086° 06' 30.13243868" E
P34	23° 49' 01.01463370" N	086° 06' 30.68346427" E
P35	23° 49' 00.64841385" N	086° 06' 30.47963188" E
P36	23° 49' 00.21044553" N	086° 06' 30.18918176" E
P37	23° 48' 59.69254765" N	086° 06' 29.92493254" E
P38	23° 48' 59.24162551" N	086° 06' 29.72044643" E
P39	23° 48' 58.61930344" N	086° 06' 29.53587911" E
P40	23° 48' 58.05963400" N	086° 06' 29.31659239" E

LAND DETAILS

Khata no.	Plot no.
103 & 210	1080, 1082 (P) & 1088

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Bokaro vide memo no. 1753/Khanan, dated 07.12.2024.
2	CO	:	The CO, Chandrapura (Bokaro) vide letter no. 534/Ra, dated 12.07.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Bokaro vide memo no. 374/Khanan, dated 17.03.2025 certified that 01 other mining lease area (2.505 Acre) exists within 500 m radius from proposed project site and total area is 6.865 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 2274, dated 01.11.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.

5	DFO Territorial	:	Divisional Forest Officer, Bokaro Forest Division vide letter no. 2175, dated 16.10.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The project is not specifically mentioned in the approved DSR of Bokaro District in Chapter 13. DMO, Bokaro vide letter no. 439/Khanan, Dated 26.03.2025 requested to consider the said project proposal as part of chapter 13 (LoI Holder list in the District) of approved District Survey Report & further requested that this project may be taken up for consideration for grant of EC. The Committee accepted the request of the DMO, Bokaro.
7	Gram Sabha	:	BDO, Chandrapura (Bokaro) vide letter no. 1161, dated 02.08.2024 informed that Gram Sabha conducted on 02.08.2024.
8	Mine Plan Approval	:	Approved by Assistant Director, Geology, District Geological Office, Koderma vide Memo No. 62, dated 07.03.2025.
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	:	1.78Ha. (During plan period)	Life of Mine – 05year
3	Waste Generation	:	14203 cum. O.B (During plan period)	
4	Stripping Ratio	:	01:01	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Elevation of Mine	:	242 to 234 m AMSL	
8	Ground Level Elevation	:	234 m AMSL	
9	Ultimate Working Depth	:	210 m	
10	Water Table	:	(During pre-monsoon 20.5473m AMSL) (During post-monsoon 14.536 m AMSL)	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	36.96 kg slurry explosive	
13	Diesel/Fuel requirement	:	HSD – 314.88 liters / day (94.464 KL/year)	

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.		
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.	Production in CFT/Year
1st	39744	2.8	111283	132	371	14208	47	1403559.36
2nd	31680	2.8	88704	106	296	0	0	1118779.2
3rd	24480	2.8	68544	82	228	0	0	864511.2
4th	18144	2.8	50803	60	169	0	0	640755.36
5th	20736	2.8	58061	69	194	0	0	732291.84
Total	134784	2.8	377395	132 (Max.)	371 (Max.)	14208	47	4759896.96

LAND USE

Existing, Proposed & Conceptual Land Use

Sl. No.	Pattern of Utilization	Present/Existing land use pattern in (Ha.)	Land used at the conceptual stage i.e. end of mine life in (Ha.)	Area to be converted in the conceptual period.
1	Mining Activities	0.000	1.41	Water body
2	Offices/ Store etc.	0.000	0.000	Plantation
3	Dumping	0.000	0.117	Plantation -
4	Mining Road	0.000	0.000	Water body
5	Garland drain	0.000	0.056	Included within Safety Zone
6	Settling Tank	0.000	0.000	-
7	Green belt	0.000	0.09	Green Belt
8	Safety Zone	0.000	0.822	Plantation
9	Stone Stock yards	0.000	0.000	
10	Unutilized	1.78	0.000	

11	Crusher (Mobile Crusher)	0.000	0.000	
Total		1.78	1.78	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.939 Ha	1503
2	Along Approach Road		0.150km	200
TOTAL				1703

- 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
2	Plantation 200 X 800 = Rs 1,60,000 (Gabion Plantation along approach road) 1503 X 400 = Rs 6,01,200 (Plantation within lease area), (also includes Fertilizer, Pesticides, Maintenance)	7,61,200	76,120
3	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs (3 point) -Rs.27,270 • Ground Water (2 point) - Rs.12,420 • Noise 24 hrs (3 point) -Rs.21,000 • Soil (3 point) -Rs.40,920 **Total -Rs. 1,01,610 (Per Season)** At least two seasons in a Year -Rs. 1,01,610 x 2 = Rs. 2,03,220	--	2,03,220

Total	Rs 7,61,200	Rs 5,79,340

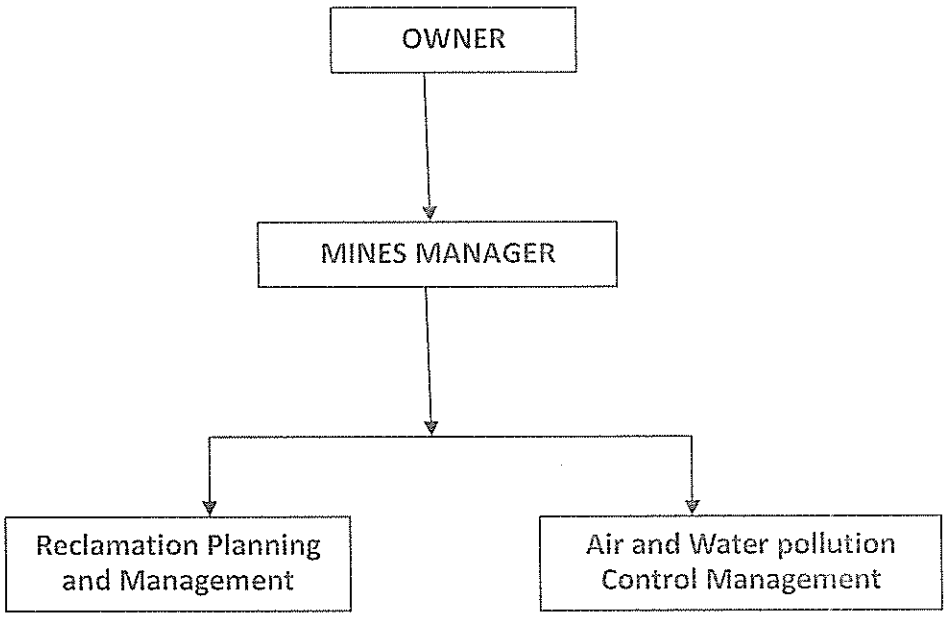
Environment Monitoring Programme

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	One Day Monitoring (within 6 months)
2.	Water	2 stations	One Day Monitoring (within 6 months)
3.	Soil	3 stations	One Day Monitoring (within 6 months)
4.	Noise	3 stations	One Day Monitoring (within 6 months)

Solid Waste Management

14208cum. O.B shall be generated during the plan period which shall be backfilled within the exhausted quarry.

Organization Structure



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 generates 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 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 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, injuryor system damage

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone mining operation

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

6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

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

Preventive Measures:

Face Stability

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

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

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

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.

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

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling 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 Telo Stone Mine of M/s YAS Minerals (Partners : (i) Shri Yogendra Prasad (ii) Shri Arjun Prasad (iii) Shri Suresh Prasad), Village : Telo, Thana : Chandrapura, Distt. : Bokaro, Jharkhand (1.78 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). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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6. Masbera Stone Mine of M/s Balaji Minerals (Prop. : Shri Ujjwal Verma), Village : Masbera, Thana : Taljhari, Thana no. : 17, Distt. : Sahibganj, Jharkhand (2.59 Ha).

(Proposal no.: SIA/JH/MIN/ 530490 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 26.03.2025.

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

Application for Environmental Clearance (EC).

EC application for :Proposed Capacity- 97410 Cum (Max.) / 272748 Tonnes.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Masbera Stone Mine Stone Mine Project Type – Stone Mine	
2	Lessee:	:	M/s Balaji Minerals. Shri Ujjwal Verma, S/O Late Baldeo Prasad Verma	
3	Lessee Address	:	M/s BALAJI MINERALS. Shri Ujjwal Verma, S/O Late Baldeo Prasad Verma, R/O Netaji Subhash Colony, Po- Sahibganj, Ps- Jirwabari, Dist.- Sahibganj, Jharkhand	
4	Lease Area	:	2.59 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost – Rs. 180.84Lakhs	Recurring Cost – Rs. 20.1 Lakhs
7	EMP Budget	:	Capital: Rs. 8.27 Lakhs	Recurring: Rs. 5.75 Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	97410 CUM	272748 TONS
10	Mine Life	:	10 years.	
11	Man power	:	28Person	
12	Water Requirement	:	5.881 KLD (Drinking: 0.420 KLD, Dust Suppression: 1.420 KLD, 4.041 KLD for Green Belt Development).	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	Nil 20 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	River Ganga is Flowing west to east – 10.50 Km in NE direction	

17	Nearest Habitation	:	JirikdangaVillage at 0.5km
18	Nearest Rail Station	:	Taljhari Railway station is at 4.55 km (aerial distance). N-E Direction
19	Nearest Air Port	:	Deoghar Airport at 122 km, SW Direction
20	Nearest Forest	:	DFO Territorial (Sahibganj) Forest Division vide letter no.-1692 Dated- 1692 30/07/2024 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.
21	Road & Highways	:	The distance of Approach Road is 354m, after that, this road connects to village road. The distance of Approach Road is 355m, after that, this road connects to village road. The village road continues for 4.76 km and after this the road connects to MDR (Taljhari Main Road).

CO-ORDINATES

Point Name	Latitude	Longitude
1	25° 03' 46.21307768" N	087° 42' 09.88988374" E
2	25° 03' 45.79260610" N	087° 42' 08.95190501" E
3	25° 03' 46.46630946" N	087° 42' 08.22404095" E
4	25° 03' 47.06259349" N	087° 42' 07.57981660" E
5	25° 03' 47.73638327" N	087° 42' 06.85185251" E
6	25° 03' 48.06158716" N	087° 42' 05.71704209" E
7	25° 03' 48.38840841" N	087° 42' 04.57656769" E
8	25° 03' 48.71086065" N	087° 42' 03.45135008" E
9	25° 03' 48.99153641" N	087° 42' 02.47190611" E
10	25° 03' 50.09153618" N	087° 42' 03.00886700" E
11	25° 03' 50.75746966" N	087° 42' 03.27536153" E
12	25° 03' 52.37979603" N	087° 42' 04.72767209" E
13	25° 03' 53.69230598" N	087° 42' 05.62362398" E
14	25° 03' 53.48267394" N	087° 42' 07.06476706" E
15	25° 03' 52.10729414" N	087° 42' 07.65652197" E

16	25° 03' 50.81220789" N	087° 42' 08.21373123" E
17	25° 03' 49.50798667" N	087° 42' 08.77486491" E
18	25° 03' 48.45224929" N	087° 42' 09.32084789" E
19	25° 03' 47.90091142" N	087° 42' 10.41636133" E
20	25° 03' 47.35093988" N	087° 42' 11.50915651" E
21	25° 03' 46.95549478" N	087° 42' 10.39937424" E

LAND DETAILS

Khata no.	Plot no.
14, 02 & 01	10 (P), 11 (P), 12 (P) & 13 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 109/M, dated 21.01.2025.
2	CO	:	The CO, Taljhari vide letter no. 443/Ra., dated 12.07.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 247/M, dated 11.02.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO – cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1691, dated 30.07.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide letter no. 1692, dated 30.07.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Sahibganj has been certified vide memo no. 501/M, dated 19.03.2025 that this project is mentioned in approved DSR of Sahibganj District as a potential area (Sl. No. 36, Page no. 168).
7	Gram Sabha	:	Gram Sabha conducted on 06.07.2024.

8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 301, dated 17.02.2025.
9	Grid certificate	:	DMO, Sahibganj vide memo no. 316, dated 18.02.2025 certified that the proposed project site is outside of Redzone Grid 1,3,4 & 7.
10	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	0.469Ha. (During plan period)	Life of Mine – 10year
3	Waste Generation	:	26,350 cum. O.B (During plan period)	
4	Stripping Ratio	:	89:50	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Elevation of Mine	:	300 to 250 m AMSL	
8	Ground Level Elevation	:	452 m AMSL	
9	Ultimate Working Depth	:	240 m	
10	Water Table	:	(During pre-monsoon 15.54m AMSL) (During post-monsoon 10 m AMSL)	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	88.704 kg/day slurry explosives	
13	Diesel/Fuel requirement	:	HSD – 342.6 liters / day (102.78 KL/year)	

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Volume of Stone (cum)	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.)
1st	95710	2.8	267988	319	893	14790	49

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2nd	74800	2.8	209440	249	698	4080	14
3rd	86870	2.8	243236	290	811	3740	12
4th	97410	2.8	272748	325	909	3740	12
5th	96900	2.8	271320	323	904	0	0
Total	451690		1264732	325 (Max)	909 (Max)	26350	88

LAND USE

Existing, Proposed & Conceptual Land Use

Si. No.	Pattern of Utilization	Present/Existing land use pattern in (Ha.)	Proposed Land use for current plan period (Ha.)	Land to be used in remaining period of the life of the mine. (Ha.)	Land used at the conceptual stage i.e. end of mine life in (Ha.)	Area to be converted in the conceptual period.
1	Mining Activities	0.000	1.574	0.469	2.043	Water body
2	Offices/ Store etc.	0.000	0.000	0.000	0.000	Plantation
3	Dumping	0.000	0.000	0.000	0.000	Plantation
4	Mining Road	0.000	0.000	0.000	0.000	Water body
5	Garland drain	0.000	0.000	0.000	0.000	-
6	Settling Tank	0.000	0.000	0.000	0.000	-
7	Safety Zone	0.000	0.547	0.000	0.547	Plantation
8	Stone Stock yards	0.000	0.000	0.000	0.000	

9	Unutilized	2.590	0.469	0.000	0.000	Plantation
Total		2.590	2.590	0.469	2.590	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.547 Ha	875
2	Along Approach Road		0.355km	472
TOTAL				1347

- 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
2	Plantation: 472 X 800 = Rs 1,60,000 (Gabion Plantation along approach road) 875 X 400 = 5,85,600 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	7,27,600	72,760
3	Fencing	100000	
4	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs. (3 point) - Rs.27,270 • Ground Water (2 point) - Rs.12,420 • Noise 24 hrs. (3 point) - Rs.21,000 • Soil (3 point) - Rs.40,920 **Total - Rs. 1,01,610 (Per Season)** **At least two seasons in a Year - Rs. 1,01,610 x 2 = Rs. 2,03,220** **Source: Central Pollution Control Board** **Notification, New Delhi, the 23rd February, 2022**	--	2,03,220

Total	8,27,600	5,75,980

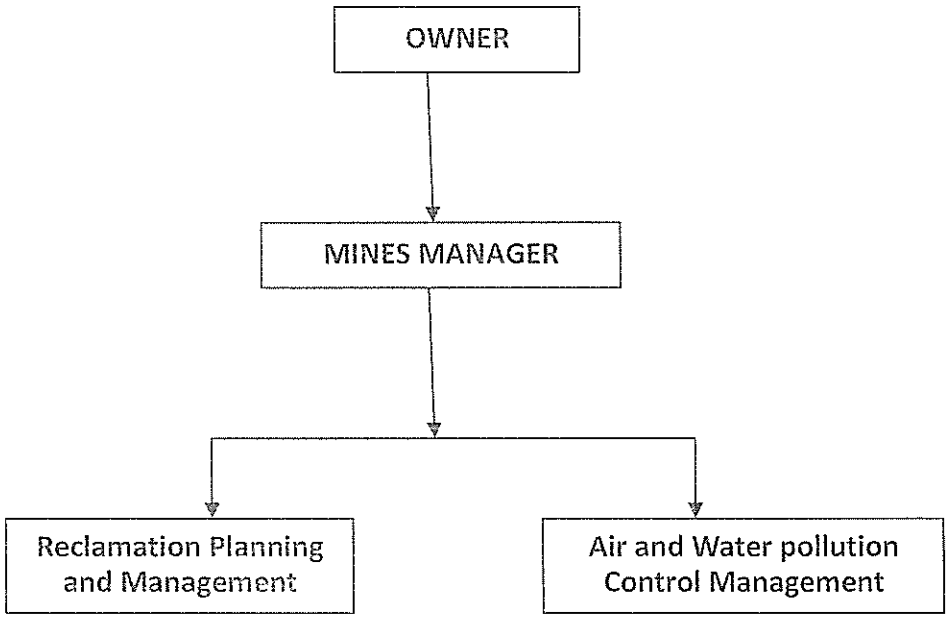
Environment Monitoring Programme

Sl. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	One Day Monitoring (within 6 months)
2.	Water	2 stations	One Day Monitoring (within 6 months)
3.	Soil	3 stations	One Day Monitoring (within 6 months)
4.	Noise	3 stations	One Day Monitoring (within 6 months)

Solid Waste Management

26,350 cum.O.B shall be generated during the plan period which shall be backfilled within the exhausted quarry.

Organization Structure



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 generates 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 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 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, injuryor 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
- 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 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 Masbera Stone Mine of M/s Balaji Minerals (Prop. : Shri Ujjwal Verma), Village : Masbera, Thana : Taljhari, Thana no. : 17, Distt. : Sahibganj, Jharkhand (2.59 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). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

****

7. Dev Pahar Stone Mine of Shri Suresh Singh, Village : Dev Pahar, Thana : Borio, Distt. : Sahibganj, Jharkhand (2.124 Ha).

(Proposal no.: SIA/JH/MIN/ 530283 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 26.03.2025.

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

Application for Environmental Clearance (EC).

EC application for : Proposed Capacity- 51136 Cum (Max.) / 143181 Tons.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Dev Pahar Stone Mine Project Type – Black Stone Mine	
2	Lessee:	:	Shri Suresh Singh	
3	Lease Address	:	Prop: - Shri Suresh Singh Village: Dev Pahar, Thana- Borio, District- Sahibganj, State- Jharkhand.	
4	Lease Area	:	2.124 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs 150.04 Lakhs	Recurring Cost: Rs 14.81 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 12.636 Lakhs	Recurring Cost: Rs. 3.145 Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	349131 Cum	7,78,324 Tons
10	Mine Life	:	05 years.	
11	Man power	:	22Person	
12	Water Requirement	:	7.302 KLD (Drinking: 0.33 KLD, Dust Suppression: 1.4.04 KLD, Plantation: 5.568KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	Nil 20 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest	:	Ganga River 9.93 Km In North Direction .	

	Water Body		
17	Nearest Habitation	:	Tetuliya Village – 0.81 Km in SW Direction
18	Nearest Rail Station	:	Karanpurato Railway Station is at Aerial distance of 7 km in E direction. .
19	Nearest Air Port	:	Deoghar Airport is at Aerial distance of 124 km SW direction.
20	Nearest Forest	:	DFO (Sahibganj), letter no.- 2397 Dated: 28.09.2024 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.
21	Road & Highways	:	The distance of Approach Road is 697m, after that, this road connects to village road. The village road continues for 3.6 km and after this the road connects to SH 18 (Dumka - SahibganjRoad).

CO-ORDINATES

Point Name	Latitude	Longitude
1	25° 09' 03.65070176" N	087° 39' 52.14775076" E
2	25° 09' 04.19219782" N	087° 39' 53.00629644" E
3	25° 09' 04.94348765" N	087° 39' 53.84102418" E
4	25° 09' 06.11469146" N	087° 39' 54.57400776" E
5	25° 09' 05.53351284" N	087° 39' 54.83241052" E
6	25° 09' 06.37076870" N	087° 39' 55.85463205" E
7	25° 09' 06.80800923" N	087° 39' 56.03665109" E
8	25° 09' 05.79373784" N	087° 39' 56.32766519" E
9	25° 09' 04.77946412" N	087° 39' 56.61867929" E
10	25° 09' 03.81970575" N	087° 39' 56.96689550" E
11	25° 09' 02.85994529" N	087° 39' 57.31511172" E
12	25° 09' 02.22839192" N	087° 39' 57.69375459" E
13	25° 09' 01.59683765" N	087° 39' 58.07239747" E

14	25° 09' 00.88074352" N	087° 39' 57.64642423" E
15	25° 09' 00.45231058" N	087° 39' 56.84180812" E
16	25° 09' 01.10108030" N	087° 39' 55.82082466" E
17	25° 09' 00.38498536" N	087° 39' 55.78025578" E
18	25° 08' 59.68113022" N	087° 39' 55.80054022" E
19	25° 08' 59.44243127" N	087° 39' 55.93576981" E
20	25° 08' 59.25881660" N	087° 39' 55.60445730" E
21	25° 08' 59.22821415" N	087° 39' 55.37456698" E
22	25° 08' 59.10580432" N	087° 39' 54.81336415" E
23	25° 08' 59.14864776" N	087° 39' 54.42119831" E
24	25° 08' 58.76305661" N	087° 39' 52.92014977" E
25	25° 08' 59.13640678" N	087° 39' 52.72406685" E
26	25° 08' 59.41794932" N	087° 39' 52.84577349" E
27	25° 08' 59.94431097" N	087° 39' 52.97424161" E
28	25° 09' 00.71549086" N	087° 39' 53.12975565" E
29	25° 09' 01.20512819" N	087° 39' 53.35964597" E
30	25° 09' 01.74372861" N	087° 39' 53.71800440" E
31	25° 09' 02.03310366" N	087° 39' 53.99847059" E
32	25° 09' 02.94578445" N	087° 39' 54.08069018" E
33	25° 09' 03.13772137" N	087° 39' 53.10270973" E
34	25° 09' 02.77734994" N	087° 39' 52.75652196" E
35	25° 09' 02.38025554" N	087° 39' 52.41303878" E
36	25° 09' 02.67403688" N	087° 39' 52.14934106" E
37	25° 09' 03.04126329" N	087° 39' 52.07496478" E
38	25° 09' 03.32229411" N	087° 39' 52.05358769" E

LAND DETAILS

Khata no.	Plot no.
54 & 20	345 (P) & 348 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 163/M, dated 05.02.2025.
2	CO	:	The CO, Borio, Sahibganj vide memo no. 730/Ra., dated 04.10.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 165/M, dated 05.02.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO – cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2376, dated 26.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide letter no. 2397, dated 28.09.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Sahibganj has been certified vide memo no. 498/M, dated 19.03.2025 that this project is mentioned in approved DSR of Sahibganj District as a potential area (Page no. 182).
7	Gram Sabha	:	Gram Sabha conducted on 20.09.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 332, dated 19.02.2025.
9	Grid certificate	:	DMO, Sahibganj vide memo no. 312, dated 18.02.2025 certified that the proposed project site is outside of Redzone Grid 1,3,4 & 7.
10	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

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2	Quarry Area	:	2.124Ha. (During plan period)	Life of Mine – 10year
3	Waste Generation	:	23421 cum. O.B (During plan period)	
4	Stripping Ratio	:	17:10	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Elevation of Mine	:	215 to 185 m AMSL	
8	Ground Level Elevation	:	185 m AMSL	
9	Ultimate Working Depth	:	172 m	
10	Water Table	:	(During pre-monsoon 15.59m AMSL) (During post-monsoon 12.39 m AMSL)	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	49.896 kg Nitro mix explosive	
13	Diesel/Fuel requirement	:	HSD – 287.16 liters / day (86.148 KL/year)	

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum recoverable 95%	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.)
1st	37969	2.8	106313	127	354	13691	46
2nd	48960	2.8	137088	163	457	7208	24
3rd	48688	2.8	136326	162	454	0	0
4th	51136	2.8	143181	170	477	0	0
5th	50703	2.8	141968	169	473	2522	8
Total	237456		664877	170 (Max)	477 (Max)	23421	46

LAND USE

Existing, Proposed & Conceptual Land Use

Type of Land	Present Land use (in Ha)	At the End of plan period (in Ha)	At the End of Mine (in Ha)	Conceptual Period (in Ha)		
				Public Use	Reservoir	Plantation
Quarry	Nil	2.000 (Including Dumped area 0.632 Ha.)	2.36 (Including backfill 0.325 Ha)	-	0.98	1.38 (Dead bench plantation)
Greenbelt within safety barrier	Nil	0.470	0.470			0.47
Road	0.19	0.030	Nil	-	-	-
Dump	Nil	0.070	Nil	-	-	-
Parapet Wall	Nil	0.004	Nil	-	-	-
Garland Drain	Nil	0.006	Nil	-	-	-
Total Area in Use	0.19	2.580	2.83	-	0.98	1.85
Balanced Area unused	2.64	0.250	Nil	-	-	-
Total Applied Area	2.83	2.830	2.83	2.83		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.580 Ha	464
2	Along Approach Road		0.697km	928
TOTAL				1856

- 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
2	Plantation 928 X 800 = Rs 7,42,400 (Gabion Plantation along approach road) 928 X 400 = Rs 3,71,200 (Plantation within lease area), (also includes Fertilizer, Pesticides, Maintenance)	11,13,600	1,11,360
3	Fencing	150000	
4	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs (3 point) -Rs.27,270 • Ground Water (2 point) -Rs.12,420 • Noise 24 hrs (3 point) -Rs.21,000 • Soil (3 point) -Rs.40,920 **Total -Rs. 1,01,610** **(Per Season)** **At least two seasons in a Year -Rs. 1,01,610 x 2** **= Rs. 2,03,220** **Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022**	--	2,03,220
Total		**Rs 12,63,600**	Rs 3,14,580

Environment Monitoring Programme

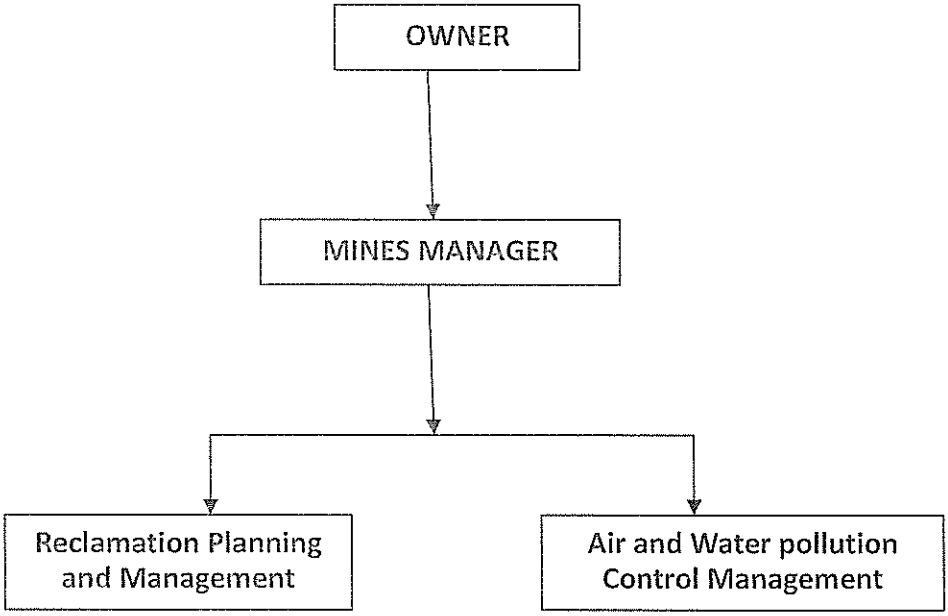
SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	One Day Monitoring (within 6 months)
2.	Water	2 stations	One Day Monitoring

			(within 6 months)
3.	Soil	3 stations	One Day Monitoring (within 6 months)
4.	Noise	3 stations	One Day Monitoring (within 6 months)

Solid Waste Management

23421 cum. O.B shall be generated during the plan period which shall be backfilled within the exhausted quarry.

Organization Structure



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 generates 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 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 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, injuryor 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

Fxplosives 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 Dev Pahar Stone Mine of Shri Suresh Singh, Village : Dev Pahar, Thana : Borio, Distt. : Sahibganj, Jharkhand (2.124 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). 10% of the total green belt proposed shall be allocated under this clause.
II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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8. Bekchuri Stone Mine of M/s Ambika Traders (Prop. : Shri Subrato Paul), Village : Bekchuri, Thana : Taljhari, Distt. : Sahibganj, Jharkhand (2.913 Ha).

(Proposal no.: SIA/JH/MIN/ 526903 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 26.03.2025.

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

Application for Environmental Clearance (EC).

Proposed Capacity- 89538 Cum (Max.) / 250705 Tons.

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Bekchuri Stone Mine Project Type – Stone Mine
2	Lessee:	:	Prop.-ShriSubratoPaul
3	Lessee Address	:	M/S Maa Ambika Traders Prop.- Shri Subrato Paul

			S/o Jitendra Nath Paul R/o Main Road near Bus stand, PO+PS- Barharwa, Dist- Sahebganj (Jharkhand).
4	Lease Area	:	2.913 Ha
5	Type of Land	:	Non Forest Raiyati Land
6	Project Cost		Capital Cost: Rs 101.65 Lakhs | Recurring Cost: Rs 22.8Lakhs
7	EMP Budget	:	Capital Cost: Rs. 8.90 Lakhs | Recurring Cost: Rs. .6.14 Lakhs
8	New or Expansion	:	New
9	Mineable Reserves	:	2093364Tons &747630Cum
10	Mine Life	:	05 years.
11	Man power	:	27Person
12	Water Requirement	:	6.6 KLD (Drinking: 0.405 KLD, Dust Suppression: 1.94 KLD, Plantation: 4.254 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	Nil 20 KVA D.G. Set proposed
15	Crusher	:	No crusher
16	Nearest Water Body	:	River Ganga –8.60 Km in North -West direction
17	Nearest Habitation	:	Bekchuri Village – 0.700 km
18	Nearest Rail Station	:	Kalian Chak Railway stationis at 4.08 km (Aerial distance)in South - East Direction.
19	Nearest Air Port	:	Deoghar , Airport at 118 km in (South – west) .
20	Nearest Forest	:	DFO (Sahibganj), letter no.- 2397 Dated: 28.09.2024 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.
21	Road & Highways	:	The distance of Approach Road is 433 m, after that, this road connects to village road. The village road continues for 5.5 km and after this the road connects to MDR Rajmahal – Tinpahar – Borio Road.

CO-ORDINATES

PointName	Latitude	Longitude
1	25°03'17.43875839"N	087°42'09.68106585"E
2	25°03'18.46203196"N	087°42'08.66448237"E
3	25°03'19.48530366"N	087°42'07.64789421"E

4	25°03'20.48202178"N	087°42'08.58180281"E
5	25°03'21.48554142"N	087°42'09.52209023"E
6	25°03'22.48905927"N	087°42'10.46238193"E
7	25°03'21.62382539"N	087°42'11.72589678"E
8	25°03'20.59312373"N	087°42'13.23103485"E
9	25°03'19.38104428"N	087°42'15.00102296"E
10	25°03'18.47320987"N	087°42'16.32671310"E
11	25°03'17.56537227"N	087°42'17.65239777"E
12	25°03'17.15511809"N	087°42'16.64447415"E
13	25°03'16.74486196"N	087°42'15.63655236"E
14	25°03'16.35393354"N	087°42'14.67612123"E
15	25°03'15.92434387"N	087°42'13.62071425"E
16	25°03'16.45445588"N	087°42'13.05859869"E
17	25°03'16.98456732"N	087°42'12.49648178"E
18	25°03'16.05805145"N	087°42'12.19456146"E
19	25°03'15.13153534"N	087°42'11.89264245"E
20	25°03'16.37227090"N	087°42'10.70334577"E

LAND DETAILS

Khata no.	Plot no.
01	5 (P), 6 (P), 123 (P), 124 (P), 125 (P), 126 (P) & 127 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 1368/M, dated 12.12.2024.
2	CO	:	The CO, Taljhari vide letter no. 454, dated 16.07.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 1379/M, dated 13.12.2024 certified that no other mining lease area exists within 500 meters

			radius from proposed project site.
4	DFO Wild Life	:	DFO – cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1951, dated 23.08.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide letter no. 1952, dated 23.08.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Sahibganj has been certified vide memo no. 404/M, dated 04.03.2025 that this project is mentioned in approved DSR of Sahibganj District as a potential area (Page no. 200).
7	Gram Sabha	:	Gram Sabha conducted on 10.07.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 89, dated 15.01.2025.
9	Grid certificate	:	DMO, Sahibganj vide memo no. 202, dated 07.02.2025 certified that the proposed project site is outside of Redzone Grid 1,3,4 & 7.
10	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	2.124Ha. (During plan period)	Life of Mine – 05 year
3	Waste Generation	:	67080cum. O.B (During plan period)	
4	Stripping Ratio	:	47:20	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Elevation of Mine	:	251 to 182 m AMSL	
8	Ground Level Elevation	:	182 m AMSL	
9	Ultimate Working Depth	:	158 m	
10	Water Table	:	(During pre-monsoon 16.13m AMSL) (During post-monsoon 10.40 m AMSL)	

11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	88.704 kg Nitro mix explosives
13	Diesel/Fuel requirement	:	HSD--343liters/day(102.9 KL/year)

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum recoverable 95%	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.)
1st	89538	2.8	250705	298	836	28600	95
2nd	89291	2.8	250013	298	833	18070	60
3rd	84845	2.8	237565	283	792	4810	16
4th	70642	2.8	197798	235	659	13390	45
5th	68790	2.8	192611	229	642	2210	7
Total	89538		250705	**298 (Max)**	**836 (Max)**	**67080**	**95**

LAND USE

Existing, Proposed & Conceptual Land Use

SL. No.	Pattern of Utilization	Present/Existing land use pattern in (Ha.)	Land used at the conceptual stage i.e. end of mine life in (Ha.)	Existing Land Use (Ha)
1	Mining Activities	-	-	0.000
2	Offices/ Store etc.	-	-	0.000
3	Dumping	-	-	0.000

4	Mining Road	-	-	0.000
5	Garland drain	-	-	0.000
6	Settling Tank	-	-	0.000
7	Green belt	-	-	0.000
8	Safety Zone	-	-	0.000
9	Stone Stock yards	-	-	0.000
10	Unutilized	-	-	2.124
11	Crusher (Mobile Crusher)	-	-	0.000
Total			-	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.524 Ha	838
2	Along Approach Road		0.433km	580
TOTAL				**1418**

- 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

2	Plantation 580 X 800 = Rs 4,64,000 (Gabion Plantation along approach road) 838 X 400 = 3,35,200 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	7,99,200	79920
3	Fencing	90,000	
4	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs (3 point) - Rs.27,270 • Ground Water (2 point) - Rs.12,420 • Noise 24 hrs (3 point) - Rs.21,000 • Soil (3 point) -Rs.40,920 **Total -Rs. 1,01,610** **(Per Season)** **At least two seasons in a Year -Rs. 1,01,610 x 2** **= Rs. 2,03,220** **Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022**	--	2,03,220
Total		**Rs 8,89,200**	**Rs 6,13,140**

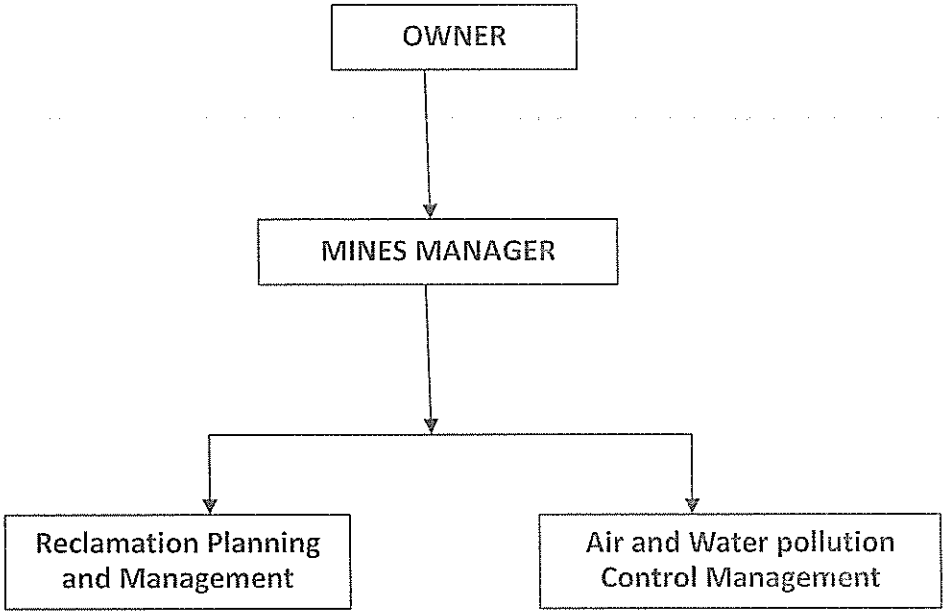
Environment Monitoring Programme

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	One Day Monitoring (within 6 months)
2.	Water	2 stations	One Day Monitoring (within 6 months)
3.	Soil	3 stations	One Day Monitoring (within 6 months)
4.	Noise	3 stations	One Day Monitoring (within 6 months)

Solid Waste Management

67080cum. O.B shall be generated during the plan period which shall be backfilled within the exhausted quarry.

Organization Structure



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 generates 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 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 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, injuryor system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1	5	4	3	2	1

(Catastrophic)					
C2 (Major)	10	8	6	4	2
C3 (Moderate)	*15*	12	9	6	3
C4 (Minor)	*20*	*16*	12	8	4
C5 (Insignificant)	*25*	*20*	*15*	10	5

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone mining operation

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

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

Preventive Measures:

Face Stability

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

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

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

Control Measures

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

Dust generation during drilling

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

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

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

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

Undertaking submitted affirming:

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

g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using 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 Bekchuri Stone Mine of M/s Ambika Traders (Prop. : Shri Subrato Paul), Village : Bekchuri, Thana : Taljhari, Distt. : Sahibganj, Jharkhand (2.913 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). 10% of the total green belt proposed shall be allocated under this clause.
II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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9. **Bekchuri Stone Mine of M/s Dhanbad Wine (Prop. : Shri Shankar Singh), Village : Bekchuri, Thana : Taljhari, Distt. : Sahibganj, Jharkhand (1.549 Ha).**

(Proposal no.: SIA/JH/MIN/ 530497 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 26.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 55,840Cum. / annum or 1,56,352 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Bekchuri Stone Mine	
2	Lessee:	:	M/s Dhanbad Wine Shri Shankar Singh	
3	Lessee Address	:	M/s Dhanbad Wine, Shri Shankar Singh, S/o Shri Naresh Singh, R/o P.O + P.S. – Mihijam, Dist – Jamtara (Jharkhand).	
4	Lease Area	:	1.549 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs. 118.14Lakhs	Recurring Cost: Rs. 19.45Lakhs
7	EMP Budget	:	Capital Cost: Rs. 8.57Lakhs	Recurring Cost: Rs. 5.78Lakhs
8	New or Expansion	:	New	

9	Mineable Reserves	:	cum.: 5,06,560cum	Tonnes: 14,18,368 tons
10	Mine Life	:	05 years.	
11	Man power	:	33Person	
12	Water Requirement	:	5.934KLD (Drinking: 0.495 KLD, Dust Suppression: 0.96KLD, Plantation: 3.759KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	Nil 20 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Ganga River 7.98 km in NW direction	
17	Nearest Habitation	:	Bhatbhaga Village – 2.23 Km in SE Direction	
18	Nearest Rail Station	:	Taljhari Station is at areal distance of 4.69 km in NE direction.	
19	Nearest Air Port	:	Deoghar Airport is at areal distance of 121 km SW direction.	
20	Nearest Forest	:	DFO (Sahibganj), letter no.- 2431 Dated- 01.10.2020 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.	
21	Road & Highways	:	The distance of Approach Road is 240m, after that this road connects to village road. The village road continues for 9.87 km and after this the road connects to MDR Maharajpur - Barharwa Road.	

CO-ORDINATES

Point Name	Longitude	Latitude
1	087° 42' 17.30003552" E	25° 03' 22.61003873" N
2	087° 42' 17.33236701" E	25° 03' 23.31392100" N
3	087° 42' 17.36322987" E	25° 03' 23.98582727" N
4	087° 42' 17.39494103" E	25° 03' 24.67619881" N
5	087° 42' 17.42926983" E	25° 03' 25.42355493" N
6	087° 42' 18.17175150" E	25° 03' 25.23206649" N
7	087° 42' 19.00754094" E	25° 03' 25.01651224" N
8	087° 42' 19.70220841" E	25° 03' 24.83735290" N
9	087° 42' 20.60745826" E	25° 03' 24.60388141" N
10	087° 42' 21.45408986" E	25° 03' 24.38552646" N
11	087° 42' 22.32516791" E	25° 03' 24.16086489" N
12	087° 42' 23.15283998" E	25° 03' 23.94739674" N
13	087° 42' 23.25444123" E	25° 03' 23.40723365" N
14	087° 42' 23.38381047" E	25° 03' 22.71944023" N
15	087° 42' 23.52864048" E	25° 03' 21.94944700" N
16	087° 42' 23.64945141" E	25° 03' 21.30715000" N
17	087° 42' 23.75924365" E	25° 03' 20.72343283" N
18	087° 42' 22.68752843" E	25° 03' 21.03646595" N
19	087° 42' 21.78006019" E	25° 03' 21.30152279" N

20	087° 42' 21.03175001" E	25° 03' 21.52009075" N
21	087° 42' 20.28539471" E	25° 03' 21.73808646" N
22	087° 42' 19.58742144" E	25° 03' 21.94194961" N
23	087° 42' 18.88341975" E	25° 03' 22.14757242" N
24	087° 42' 18.12854975" E	25° 03' 22.36805148" N

LAND DETAILS

Khata no.	Plot no.
01 & 10	2 (P) & 3 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 781/M, dated 17.08.2024.
2	CO	:	The CO, Taljhari vide letter no. 09/2017, dated 12.09.2017 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 515/M, dated 20.03.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO – cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1383, dated 29.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide letter no. 2931, dated 01.10.2020 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 Sahibganj District (Sl. No. 13, Page no. 158).
7	Gram Sabha	:	Gram Sabha conducted on 18.08.2017.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 503/M, dated 19.03.2025.
9	Grid certificate	:	DMO, Sahibganj vide memo no. 502, dated 19.03.2025 certified that the proposed project site is outside of Redzone Grid 1,3,4 & 7.
10	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	:	1.549 Ha	Life of Mine – 5year
3	Waste Generation	:	54080 cum	
4	Stripping Ratio	:	13:08	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Elevation of Mine	:	190m–166m AMSL	
8	Ground Level Elevation	:	166 AMSL	
9	Ultimate Working Depth	:	145 m AMSL	
10	Water Table	:	Post Monsoon –14.95m AMSL Pre Monsoon -19.71m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	53.46 kg/day Nitro mix explosives /day	
13	Diesel/Fuel requirement	:	HSD – 356.46 liters / day (1069.38 KL/year)	

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.)
1st	55840	2.8	156352	186	521	33280	111
2nd	52160	2.8	146048	174	487	0	0
3rd	49920	2.8	139776	166	466	20800	69
4th	49280	2.8	137984	164	460	0	0
5th	51680	2.8	144704	172	482	0	0
Total	**258880**	**2.8**	**724864**	**186 (Max.)**	**521 (Max.)**	**54080**	**111 (Max.)**

Land Use pattern

Sl. No.	Pattern of Utilization	Present/Existing land use pattern in (Ha.)	Proposed Land use for current plan period (Ha.)	Land to be used in remaining period of the life of the mine. (Ha.)	Land used at the conceptual stage i.e. end of mine life in (Ha.)	Area to be converted in the conceptual period.

1	Mining Activities	0.000	1.166	0.000	1.166	Water body
2	Offices/ Store etc.	0.000	0.000	0.000	0.000	Plantation
3	Dumping	0.000	0.050	0.000	0.000	Included in Mining Area
4	Mining Road	0.000	0.000	0.000	0.000	Water body
5	Garland drain	0.000	0.026	0.000	0.026	Included within safety zone
6	Settling Tank	0.000	0.000	0.000	0.000	-
7	Green belt	0.000	0.000	0.000	0.000	Green Belt
8	Safety Zone	0.000	0.383	0.000	0.383	Plantation
9	Stone Stock yards	0.000	0.000	0.000	0.000	
10	Unutilized	1.549	0.000	0.000	0.000	
11	Crusher	0.000	0.000	0.000	0.000	
Total		**1.549**	**1.549**	0.000	**1.549**	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone,Dumping Area, Unutilized Area, and Office Area.		0.383 Ha	640
2	Along Approach Road		0.240km	613
TOTAL				**1253**

- 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 640 X 800 = Rs 5,12,000 (Gabion Plantation along approach road) 613 X 400 = Rs 2,45,200 (Plantation within lease area), (also includes Fertilizer, Pesticides, Maintenance)	7,57,200	75,720
3	Fencing	1,00,000	
4	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs (3 point) -Rs.27,270 • Ground Water (2 point) -Rs.12,420 • Noise 24 hrs (3 point) -Rs.21,000 • Soil (3 point) -Rs.40,920 **Total -Rs. 1,01,610 (Per Season)** **At least two seasons in a Year -Rs. 1,01,610 x 2 = Rs. 2,03,220** **Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022**	--	2,03,220
Total		Rs 8,57,200	**Rs 5,78,940**

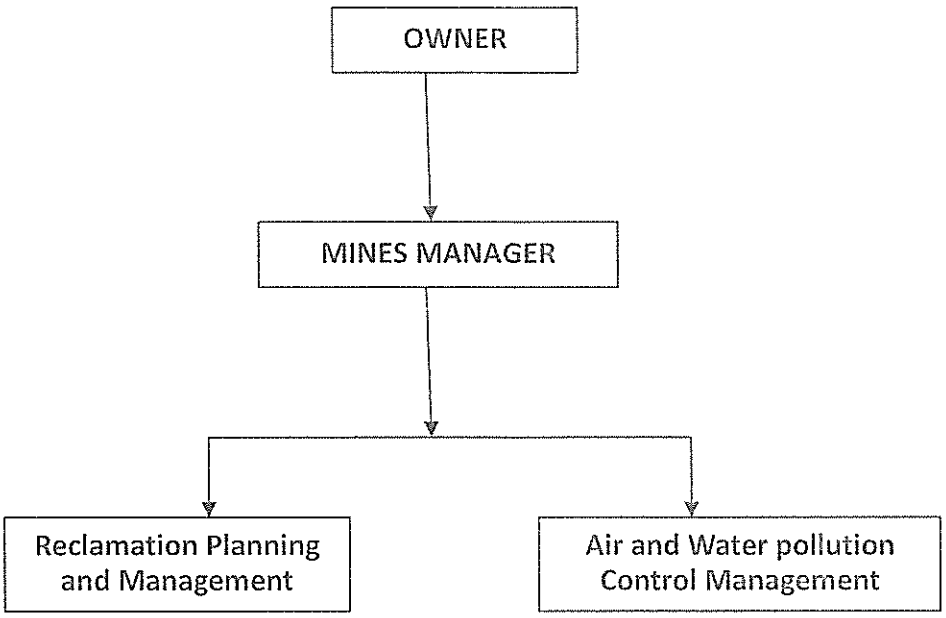
Environment Monitoring Programmed

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 Station	6 Monthly

- Solid Waste Management

54080 cum.O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Organization Structure



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 generates 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 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 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, injuryor system damage

Risk Assessment Chart (Qualitative Method)

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

C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone mining operation

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

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

Preventive Measures:

Face Stability

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

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

- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

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

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

Falls from the edge of a bench

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

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

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

Control Measures

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

Dust generation during drilling

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

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

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

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

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

Undertaking submitted affirming:

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

g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling 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 Bekchuri Stone Mine of M/s Dhanbad Wine (Prop. : Shri Shankar Singh), Village : Bekchuri, Thana : Taljhari, Distt. : Sahibganj, Jharkhand (1.549 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). 10% of the total green belt proposed shall be allocated under this clause.
II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be

maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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10. **Tetaria Stone Deposit of M/s Md. Alam and Brothers (Prop. : Mr. Mahatab Alam), Village : Tetaria, Thana : Taljhari, Distt. : Sahibganj, Jharkhand (2.93 Ha).**

(Proposal no.: SIA/JH/MIN/ 526865 /2025) (New EC)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 26.03.2025.

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

Application for Environmental Clearance (EC).

EC application for : Proposed Capacity- 69,578 cum (Max.) / 2,08,735 Tonnes.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Tetaria Stone Deposit Project Type – Stone Mine	
2	Lessee:	:	MahatabAlam	
3	Lessee Address	:	M/S Md Alam And Brothers Proprietor: MahatabAlam Village & P.O. – Piyarpur, Thana- Radhanagar, Dist.- Sahibganj, Jharkhand 816108	
4	Lease Area	:	2.93 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs.120.45 Lakhs	Recurring Cost: Rs 14.71Lakhs
7	EMP Budget	:	Capital Cost: Rs. 11.24 Lakhs	Recurring Cost: Rs. 6.056Lakhs
8	New or	:	New	

	Expansion		
9	Mineable Reserves	:	6,95,286 cum | 20,85,858 Tonnes
10	Mine Life	:	10 years.
11	Man power	:	33Person
12	Water Requirement	:	8.27 KLD (Drinking: 0.495 KLD, Dust Suppression: 0.960 KLD, Plantation: 6.82 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	Nil 20 KVA D.G. Set proposed
15	Crusher	:	No crusher
16	Nearest Water Body	:	Ganga River – 10.48 Km – NE direction (aerial distance)
17	Nearest Habitation	:	Gilamari Village – 0.5 Km
18	Nearest Rail Station	:	Taljhari Railway Station , at 6.01 Km – NE direction (aerial distance
19	Nearest Air Port	:	Deoghar Airport (Deoghar), 120.21 Km - NW direction (aerial distance).
20	Nearest Forest	:	DFO (Sahibgnaj), letter no.- 1079 Dated- 24.06.2021 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.
21	Road & Highways	:	The distance of apporoach road is 0.24km, after that this road connects to NH-33 at distance 8.72 km from the mine side in South direction.

CO-ORDINATES

Point ID	Latitude	Longitude
1	25°2' 36.454" N	87°42' 4.927" E
2	25°2' 36.003" N	87°42' 7.042" E
3	25°2' 35.509" N	87°42' 9.221" E
4	25°2' 34.066" N	87°42' 9.093" E
5	25°2' 32.369" N	87°42' 8.953" E
6	25°2' 30.543" N	87°42' 8.803" E
7	25°2' 30.653" N	87°42' 6.706" E
8	25°2' 30.766" N	87°42' 4.493" E
9	25°2' 30.853" N	87°42' 2.712" E
10	25°2' 32.682" N	87°42' 2.259" E
11	25°2' 34.059" N	87°42' 1.921" E
12	25°2' 34.913" N	87°42' 2.992" E
13	25°2' 35.839" N	87°42' 4.155" E

LAND DETAILS

Khata no.	Plot no.
05	40 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 817/M, dated 28.08.2024.
2	CO	:	The CO, Taljhari vide letter no. 629/Ra., dated 10.10.2020 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 567/M, dated 26.03.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 100, dated 18.01.2021 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide letter no. 1079, dated 24.06.2021 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Sahibganj District (Sl. No. 17, Page no. 160).
7	Gram Sabha	:	Gram Sabha conducted on 16.08.2019.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 266/M, dated 13.02.2025.
9	Grid certificate	:	DMO, Sahibganj vide memo no. 398, dated 04.03.2025 certified that the proposed project site is outside of Redzone Grid 1,3,4 & 7.
10	Qualified Person	:	Shri P.K. Sen through letter dated 25.03.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	0.75Ha. (During plan period)	Life of Mine – 05year

3	Waste Generation	:	18,288cum. O.B (During plan period)
4	Stripping Ratio	:	49:10
5	Working Days	:	300
6	Benches: size	:	6 m x 6 m
7	Elevation of Mine	:	194 to 160 m AMSL
8	Ground Level Elevation	:	160 m AMSL
9	Ultimate Working Depth	:	104 m
10	Water Table	:	(During pre-monsoon 14.98m AMSL) (During post-monsoon 11.13 m AMSL)
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	126 kg Slurry explosives/day
13	Diesel/Fuel requirement	:	HSD – 259.44 liters / day (77.83 KL/year)

Production Details

Year	Production of Stone / Year			Removal of Gritty Soil		Intercalated Waste
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum Production per day cum (O.B.)
1st	69,578	1.5	2,08,735	12,748	19,122	3662
2nd	69,548	1.5	2,08,543	5340	8010	3660
3rd	69,365	1.5	2,08,093	1768	2652	3650
4th	69,427	1.5	2,08,279	Nil	Nil	3655
5th	69,557	1.5	2,08,671	Nil	Nil	3661
Total	**3,47,475**		**10,42,421**	**19,856**	**29,784**	**18,288**

LAND USE

SL. No.	Pattern	Present Land Use (Ha)
1	Quarry	Nil
2	Greenbelt within Safety	Nil

	Barrier	
3	Road	0.015
4	Dump	Nil
5	Parapet wall	Nil
6	Garland Drain	Nil
7	**Total Area in Use**	**0.015**
8	Balanced Area unused	2.915
Total Applied Area		**2.93**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.47 Ha	320
2	Along Approach Road		0.240km	752
TOTAL				**1072**

- 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
2	Plantation 320 X 800 = Rs 2,56,000 (Gabion Plantation along approach road) 1920 X 400 = 7,68,000 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	10,24,000	1,02,400
3	Fencing	1,00,000	-

4	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs (3 point) -Rs.27,270 • Ground Water (2 point) -Rs.12,420 • Noise 24 hrs (3 point) -Rs.21,000 • Soil (3 point) -Rs.40,920 **Total -Rs. 1,01,610 (Per Season)** **At least two seasons in a Year -Rs. 1,01,610 x 2** **= Rs. 2,03,220** **Source: Central Pollution Control Board** **Notification, New Delhi, the 23rd February, 2022**	--	2,03,220
Total		**11,24,000**	**6,05,620**

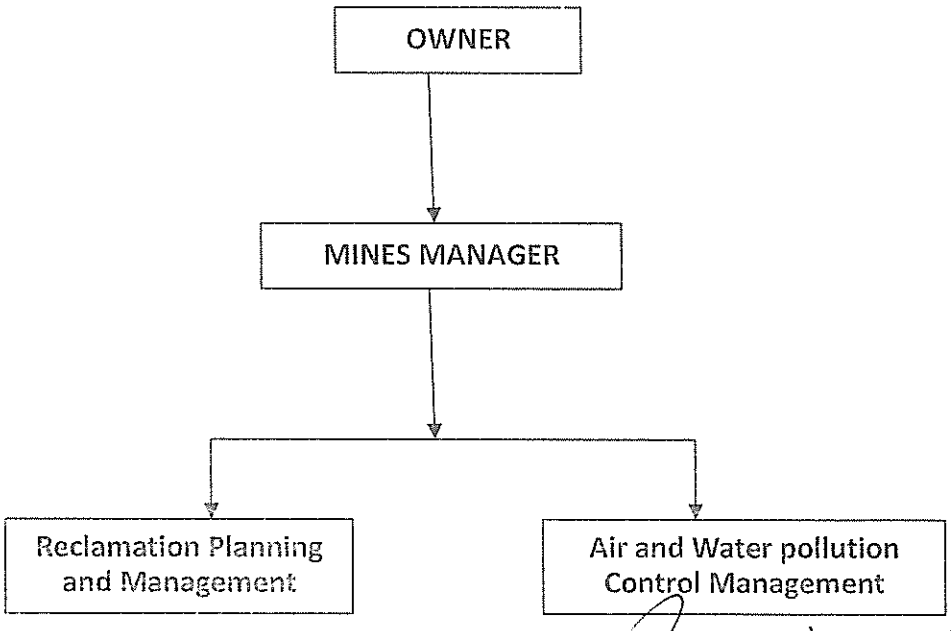
Environment Monitoring Programme

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	One Day Monitoring (within 6 months)
2.	Water	2 stations	One Day Monitoring (within 6 months)
3.	Soil	3 stations	One Day Monitoring (within 6 months)
4.	Noise	3 stations	One Day Monitoring (within 6 months)

Solid Waste Management

18,288 cum. O.B shall be generated during the plan period which shall be backfilled within the exhausted quarry.

Organization Structure



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 generates 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 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 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, injuryor 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	Unwanted	Very	Catastrophic	5

	Explosives	Explosion	Unlikely		
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.

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Tetaria Stone Deposit of M/s Md. Alam and Brothers (Prop. : Mr. Mahatab Alam), Village : Tetaria, Thana : Taljhari, Distt. : Sahibganj, Jharkhand (2.93 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"Ek Ped Ma Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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11. Jirikdanga Stone Deposit of M/s Md. Alam and Brothers (Prop. : Mr. Mahatab Alam), Village : Jirikdanga, Thana : Taljhari, Thana no. : 32, Distt. : Sahibganj, Jharkhand (2.83 Ha).

(Proposal no.: SIA/JH/MIN/ 526868 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 26.03.2025.

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

Application for Environmental Clearance (EC).

EC application for : Proposed Capacity- 61815 Cum (Max.) / 185444 Tonnes.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Jirikdanga Stone Deposit Project Type – Stone Mine	
2	Lessee:	:	M/s Md Alam And Brothers Prop: - Mahatab Alam	
3	Lessee Address	:	M/S Md. Alam & Brothers Prop: - MahatabAlam Vill& P.O- Piyarpur P.S – Radhanagar, Dist- Sahibganj,Jharkhand, Pin Code- 816108.	
4	Lease Area	:	2.83 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost – Rs. 83.50 Lakhs	Recurring Cost – Rs. 12.75 Lakhs
7	EMP Budget	:	Capital: Rs. 7.20 Lakhs	Recurring: Rs. 5.67 Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	Tonnes: 1854395 Tonnes	
10	Mine Life	:	10 years.	
11	Man power	:	32Person	
12	Water Requirement	:	4.736 KLD (Drinking: 0.480 KLD, Dust Suppression: 0.800 KLD, 3.456 KLD for Green Belt Development).	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	Nil 20 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	River Ganga is Flowing west to east – 10.50 Km in NE direction	
17	Nearest	:	JirikdangaVillage at 0.5km	

	Habitation		
18	Nearest Rail Station	:	Taljhari Railway station is at 6.55 km (aerial distance). N-E Direction
19	Nearest Air Port	:	Deoghar Airport at 120.04 km, NW Direction.
20	Nearest Forest	:	DFO Territorial (Sahibganj) Forest Division vide letter no.-2707 Dated- 21/10/2020 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.
21	Road & Highways	:	NH-33 is near about 8.98 km away from applied area.

CO-ORDINATES

Latitude	Longitude
25°2' 33.360" N	87°41' 51.762" E
25°2' 32.930" N	87°41' 53.588" E
25°2' 32.482" N	87°41' 55.476" E
25°2' 31.924" N	87°41' 57.927" E
25°2' 30.049" N	87°41' 57.691" E
25°2' 28.149" N	87°41' 57.452" E
25°2' 27.912" N	87°41' 55.630" E
25°2' 27.575" N	87°41' 53.321" E
25°2'28.292" N	87°41' 51.659" E
25°2'29.022" N	87°41' 49.967" E
25°2' 30.359" N	87°41' 50.531" E
25°2'31.833" N	87°41' 51.135" E

LAND DETAILS

Khata no.	Plot no.
05	123 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 818/M, dated 28.08.2024.
2	CO	:	The CO, Taljhari vide letter no. 263/Ra., dated 29.05.2020 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 566/M, dated 26.03.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 399, dated 17.02.2020 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.

5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide memo no. 2707, dated 21.10.2020 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 Sahibganj District (Sl. No. 15, Page no. 159).
7	Gram Sabha	:	Gram Sabha conducted on 16.08.2019.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 265/M, dated 13.02.2025.
9	Grid certificate	:	DMO, Sahibganj vide memo no. 397, dated 04.03.2025 certified that the proposed project site is outside of Redzone Grid 1,3,4 & 7.
10	Qualified Person	:	Shri P.K. Sen through letter dated 25.03.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	2.00Ha. (During plan period)	Life of Mine – 10year
3	Waste Generation	:	18841cum. O.B (During plan period)	
4	Stripping Ratio	:	09:05	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Elevation of Mine	:	180 to 135 m AMSL	
8	Ground Level Elevation	:	452 m AMSL	
9	Ultimate Working Depth	:	96 m	
10	Water Table	:	(During pre-monsoon 15.55m AMSL) (During post-monsoon 11.46 m AMSL)	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	94.5 kg/day slurry explosives	
13	Diesel/Fuel requirement	:	HSD – 259.44 liters / day (77.832 KL/year)	

Production Details

Years	Production of stone in Tones/Year	Production of Stone in Cum/Year	Intercalated Waste In Cum	Removal of Gritty Soil	
				In Cum	In Tones
1st	185395	61798	3252	10425	15638
2nd	185401	61800	3253	3235	4853
3rd	185444	61815	3254	0305	0458
4th	185401	61800	3253	0000	0000
5th	185444	61815	3254	4876	7314
Total	927085	309028	16266	18841	28263

LAND USE

Existing, Proposed & Conceptual Land Use

Type of Land	Present Land use (in Ha)	At the End of plan period (in Ha)	At the End of Mine (in Ha)	Conceptual Period (in Ha)		
				Public Use	Reservoir	Plantation
Quarry	Nil	2.000 (Including Dumped area 0.632 Ha.)	2.36 (Including backfill 0.325 Ha)	-	0.98	1.38 (Dead bench plantation)
Greenbelt within safety barrier	Nil	0.470	0.470			0.47
Road	0.19	0.030	Nil	-		
Dump	Nil	0.070	Nil	-		
Parapet Wall	Nil	0.004	Nil	-		
Garland Drain	Nil	0.006	Nil	-		

Total Area in Use	0.19	2.580	2.83	-	0.98	1.85
Balanced Area unused	2.64	0.250	Nil	-		
Total Applied Area	2.83	2.830	2.83		2.83	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0. 470 Ha	752
2	Along Approach Road	0.200km	400
TOTAL			1152

- 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

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Total		**7,20,800**	**5,65,300**

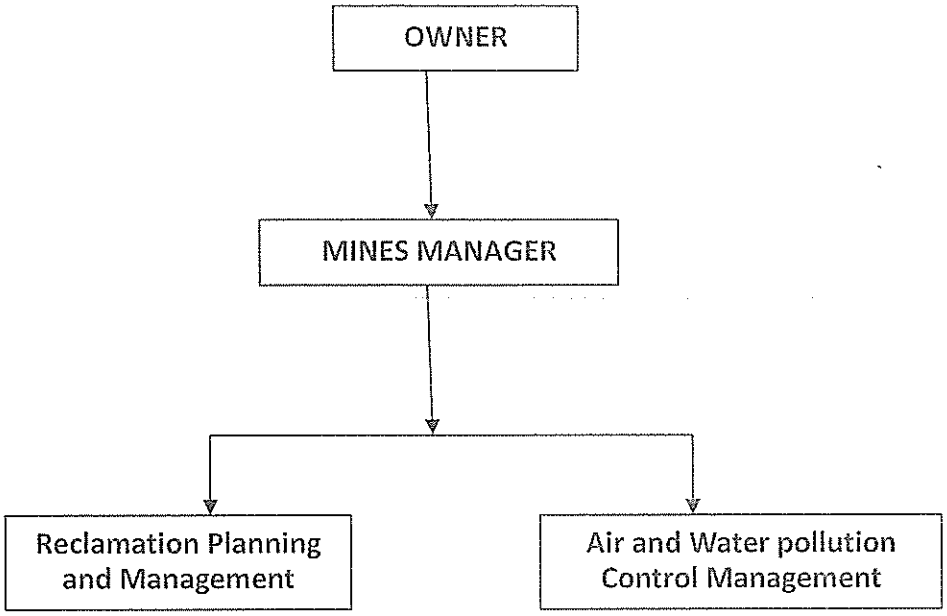
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- Blasting to be done during favorable weather conditions.

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

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

Movement of Trucks on Road -- Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on 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 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, injuryor system damage

Risk Assessment Chart (Qualitative Method)

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

C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone mining operation

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

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

Preventive Measures:

Face Stability

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

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

- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

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

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

Falls from the edge of a bench

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

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

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

Control Measures

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

Dust generation during drilling

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

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

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

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

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

Undertaking submitted affirming:

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

g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling 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 Jirikdanga Stone Deposit of M/s Md. Alam and Brothers (Prop. : Mr. Mahatab Alam), Village : Jirikdanga, Thana : Taljhari, Thana no. : 32, Distt. : Sahibganj, Jharkhand (2.83 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"Ek Ped Ma Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.
II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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12. Balko Stone Deposit of M/s Vidyarthi Stone Works (Prop. : Shri Prashant Kumar Panday), Village : Balko, Thana : Taljhari, Distt. : Sahibganj, Jharkhand (2.430 Ha).

(Proposal no.: SIA/JH/MIN/ 530030 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 26.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 74,480Cum. / annum or 2,01,096 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Balko Stone Deposit	
2	Lessee:	:	M/S Vidyarthi Stone Works, Proprietor: Sri Prashant Kumar Pandey	
3	Lessee Address	:	M/S Vidyarthi Stone Works Sri Prashant Kumar Pandey, Netaji Subhash Colony, Thana-Jirwabari, P.O. + Dist.- Sahibganj, Jharkhand	
4	Lease Area	:	2.430 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs. 114.4 Lakhs	Recurring Cost: Rs. 11.7 Lakhs/Year
7	EMP Budget	:	Capital Cost: Rs. 7.90 Lakhs	Recurring Cost: Rs. 5.77 Lakhs/Year
8	New or Expansion	:	New	

9	Mineable Reserves	:	cum.: 5346988.02	Tonnes: 18,88,271
10	Mine Life	:	5 years.	
11	Man power	:	18Person	
12	Water Requirement	:	4.75 KLD (Drinking: 0.270 KLD, Dust Suppression: 1.068 KLD, Plantation: 3.414 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	Nil 20 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	River Ganga is Flowing west to east – 9 Km in east direction	
17	Nearest Habitation	:	Balko Village – 0.441 km in NW Direction	
18	Nearest Rail Station	:	KaliyanChak Railway Station at aerial distance of 4 km from area.	
19	Nearest Air Port	:	Deoghar Airport, Deoghat is at areal distance of 120.21 km SW direction.	
20	Nearest Forest	:	DFO (Sahibganj), letter no.- 2452 Dated: 01.10.2024 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.	
21	Road & Highways	:	The distance of apporoach road is 0.267 km, after that this road connects to NH-33 Sahibganj-Barhawaroad at distance 8.3 km away from the applied lease area in eastern side.	

CO-ORDINATES

Point ID	Latitude	Longitude
1	25° 2'51.25"N	87°41'57.08"E
2	25° 2'53.68"N	87°41'57.35"E
3	25° 2'53.76"N	87°41'59.31"E
4	25° 2'53.01"N	87°42'2.86"E
5	25° 2'52.70"N	87°42'2.80"E
6	25° 2'50.87"N	87°42'4.05"E
7	25° 2'49.01"N	87°42'5.31"E
8	25° 2'48.38"N	87°42'4.37"E
9	25° 2'48.77"N	87°42'3.86"E
10	25° 2'48.37"N	87°42'1.84"E
11	25° 2'48.29"N	87°42'0.45"E

12	25° 2'48.55"N	87°41'59.59"E
13	25° 2'48.95"N	87°41'58.98"E
14	25° 2'51.07"N	87°42'0.00"E

LAND DETAILS

Khata no.	Plot no.
05	82 (P)
01	83
15	84 (P) & 85 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 1377/M, dated 13.12.2024.
2	CO	:	The CO, Taljhari vide letter no. 577, dated 12.09.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster & Grid certificate	:	DMO, Sahibganj vide memo no. 357/M, dated 20.02.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site and also certified that the proposed project site is outside of Redzone Grid 1,3,4 & 7.
4	DFO Wild Life	:	DFO – cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2453, dated 01.10.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide letter no. 2452, dated 01.10.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Sahibganj has been certified vide memo no. 514/M, dated 20.03.2025 that this project is mentioned in approved DSR of Sahibganj District as a potential area (Page no. 192).
7	Gram Sabha	:	Gram Sabha conducted on 07.09.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Memo No. 358/M, dated 20.02.2025.

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 Mechanized Method	
2	Quarry Area	:	0.966 Ha	Life of Mine – 5year
3	Waste Generation	:	19154 cum	
4	Stripping Ratio	:	24:05	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Elevation of Mine	:	176m AMSL to 128m AMSL	
8	Ground Level Elevation	:	128m AMSL	
9	Ultimate Working Depth	:	109m AMSL	
10	Water Table	:	Post Monsoon –12.34m AMSL Pre Monsoon -15.55m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	14.17 kg Nitro mix explosives /day	
13	Diesel/Fuel requirement	:	HSD – 246 liters / day (73.8 KL/year)	

Production Details

Year	Production of Stone / Year			Removal of Overburden	Intercalated Waste	Total Waste
	Cum	T.F.	Tonnes	Cum	Cum	Cum
1st	71594	2.7	193304	7154	3768	10922
2nd	72246	2.7	195063	4704	3802	8506
3rd	72432	2.7	195566	2352	3812	6164
4th	73177	2.7	197577	784	3851	4635
5th	74480	2.7	201096	0	3920	3920
Total	363929		982605	14994	19154	34148

Land Use pattern

SL. No.	Existing	Hect
1	Quarry	Nil
2	Road	Nil
3	WasteDump	Nil
4	S.Z.Plantation	Nil
5	Total AreainUse	0.000
6	Unusedarea	2.430
TotalAppliedArea		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone,Dumping Area, Unutilized Area, and Office Area.		0.489 Ha	782
2	Along Approach Road		0.267km	356
TOTAL				1138

- 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	CapitalCost inRs.	RecurringCost inRs.peryear
1	WaterfacilityforDustSuppression,watering plants etc. (Rs. 1000 per Tanker)	--	3,00,000
2	Plantation 356X800=Rs2,84,800(GabionPlantation	7,40,000	74,000

	along approach road) 1138 X 400 = 4,55,200 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)		
3	Fencing	50,000	
4	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs (3 point) -Rs.27,270 • Ground Water (2 point) -Rs.12,420 • Noise 24 hrs (3 point) -Rs.21,000 • Soil (3 point) -Rs.40,920 Total -Rs. 1,01,610 (Per Season) At least two seasons in a Year -Rs. 1,01,610 x 2 - Rs. 2,03,220 Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022	--	2,03,220
Total		7,90,000	5,77,220

Environment Monitoring Programmed

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 Station	6 Monthly

Solid Waste Management

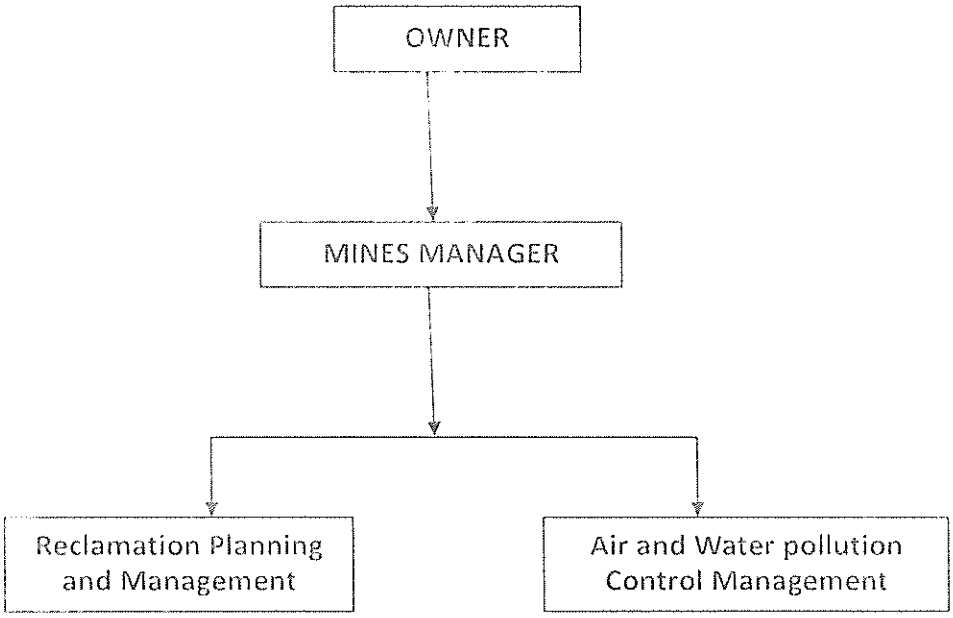
19154 cum.O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

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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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.

Organization Structure



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 generates 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 Gaul 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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		activity or operation.
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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, injuryor system damage

Risk Assessment Chart (Qualitative Method)

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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
- 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.

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 Balko Stone Deposit of M/s Vidyarthi Stone Works (Prop. : Shri Prashant Kumar Panday), Village : Balko, Thana : Taljhari, Distt. : Sahibganj, Jharkhand (2.430 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). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

****

13. Jokmari (Guttibera) Stone Mine of Shri Chaturanand Pandey, Village : Jokmari (Guttibera), Thana : Sakrogarh, Distt. : Sahibganj, Jharkhand (1.457 Ha).

(Proposal no.: SIA/JH/MIN/ 530242 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 26.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 55633Cum. / annum or 155772 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Jokmari (Guttibera) Stone Mine	
2	Lessee:	:	Shri Chaturanand Pandey	
3	Lessee Address	:	Shri Chaturanand Pandey, S/O-Late Vishwanath Pandey, Village –Talbanna,P.O+Ps - Sahibganj,District – Sahibganj , State - Jharkhand	
4	Lease Area	:	1.457 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs. 104.64 Lakhs	Recurring Cost: Rs. 11.9Lakhs
7	EMP Budget	:	Capital Cost: Rs. 12.70Lakhs	Recurring Cost: Rs. 6.30Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 379514	Tonnes: 1062639
10	Mine Life	:	10 years.	
11	Man power	:	20Person	
12	Water Requirement	:	6.9KLD (Drinking: 0.300KLD, Dust Suppression: 1.816KLD, Plantation: 4.728KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	Nil 20 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Ganga River 5.91 km in Eastdirection	
17	Nearest Habitation	:	Mahadevganj Village – 1.42 Km in N Direction	
18	Nearest Rail Station	:	Sahibganj railway station is at aerial distance of 4.38km in East direction.	
19	Nearest Air Port	:	DeogharAirport is at Aerial distance of126km SW direction.	
20	Nearest Forest	:	DFO (Sahibganj), letter no.- 3286 Dated- 14.12.2020 certified that the distance of reserved / protected forest is more than	

			250 m from proposed project site.
21	Road & Highways	:	The distance of Approach Road is 354m, after that, this road connects to village road. The village road continues for0.883 km and after this the road connects to NH 33.

CO-ORDINATES

Point Name	Latitude	Longitude
1	25° 14' 24.92529853" N	087° 35' 32.05535177" E
2	25° 14' 24.51411277" N	087° 35' 32.27891275" E
3	25° 14' 24.23723591" N	087° 35' 32.52645748" E
4	25° 14' 24.09040080" N	087° 35' 32.09797186" E
5	25° 14' 23.80934981" N	087° 35' 31.62216998" E
6	25° 14' 23.68167814" N	087° 35' 31.70710608" E
7	25° 14' 23.03358598" N	087° 35' 31.10103942" E
8	25° 14' 22.54221034" N	087° 35' 30.57599912" E
9	25° 14' 22.49027597" N	087° 35' 29.97842189" E
10	25° 14' 21.85651601" N	087° 35' 29.64523204" E
11	25° 14' 21.29014899" N	087° 35' 29.26020303" E
12	25° 14' 21.60825690" N	087° 35' 28.64510455" E
13	25° 14' 21.84137747" N	087° 35' 28.08872924" E
14	25° 14' 21.83764688" N	087° 35' 27.88960290" E
15	25° 14' 21.78463426" N	087° 35' 27.56081785" E
16	25° 14' 21.21784200" N	087° 35' 27.05532916" E
17	25° 14' 20.93770786" N	087° 35' 26.82460250" E
18	25° 14' 20.70111160" N	087° 35' 26.57497223" E
19	25° 14' 20.11323621" N	087° 35' 26.63186295" E
20	25° 14' 19.74453684" N	087° 35' 26.67547725" E
21	25° 14' 19.38525458" N	087° 35' 26.67374057" E
22	25° 14' 19.34442033" N	087° 35' 26.42406189" E
23	25° 14' 18.98673626" N	087° 35' 25.24947175" E
24	25° 14' 19.92087759" N	087° 35' 24.90841599" E
25	25° 14' 20.80215741" N	087° 35' 24.58665863" E
26	25° 14' 21.90752483" N	087° 35' 24.18308448" E
27	25° 14' 23.01289194" N	087° 35' 23.77950836" E
28	25° 14' 23.52744393" N	087° 35' 25.16838885" E
29	25° 14' 22.47130444" N	087° 35' 25.66762921" E
30	25° 14' 22.39040116" N	087° 35' 26.65282567" E
31	25° 14' 22.30586487" N	087° 35' 27.41400710" E
32	25° 14' 22.63934774" N	087° 35' 27.79890386" E
33	25° 14' 23.20774910" N	087° 35' 28.30938068" E
34	25° 14' 23.76296668" N	087° 35' 28.72024045" E

35	25° 14' 24.06650211" N	087° 35' 29.44006364" E
36	25° 14' 24.38573128" N	087° 35' 30.29793868" E
37	25° 14' 24.71641505" N	087° 35' 31.07355057" E

LAND DETAILS

Khata no.	Plot no.
14	149
51	94 & 421 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 51/M, dated 09.01.2025.
2	CO	:	The CO, Mandro vide memo no. 808/Ra, dated 02.12.2020 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster & Grid certificate	:	DMO, Sahibganj vide memo no. 479/M, dated 18.03.2025 certified that 01 other mining lease area (4.78 Acre) exists within 500 meters radius from proposed project site and also certified that said project falls under grid no. 4 and production is within the over all permissible production limit.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 861, dated 15.05.2021 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide letter no. 3286, dated 14.12.2020 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Sahibganj has been certified vide memo no. 531/M, dated 20.03.2025 that this project is mentioned in approved DSR of Sahibganj District as a potential area (Page no. 185).
7	Gram Sabha	:	Gram Sabha conducted on 07.12.2017.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Memo No. 181/M, dated 06.02.2025.
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	:	1.457 Ha	Life of Mine – 10 year
3	Waste Generation	:	21955 cum	
4	Stripping Ratio	:	11:50	
5	Working Days	:	300	
6	Benches: size	:	5 m x 5 m	
7	Elevation of Mine	:	175 AMSL	
8	Ground Level Elevation	:	175 AMSL	
9	Ultimate Working Depth	:	43 m AMSL	
10	Water Table	:	Post Monsoon –31.24m AMSL Pre Monsoon -34.76m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	50.82 kg/day Nitro mix explosives /day	
13	Diesel/Fuel requirement	:	HSD – 287 liters / day (86.1 KL/year)	

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.
1st	40121	2.8	112340	134	374	9263	31
2nd	43552	2.8	121945	145	406	3611	12
3rd	52948	2.8	148255	176	494	3297	11
4th	55633	2.8	155772	185	519	1884	6
5th	37791	2.8	105815	126	353	3900	13
Total	**230045**		644127	**186 (Max)**	**519 (Max)**	**21955**	**31**

Land Use pattern

Sl. No.	Pattern of Utilization	Present/Existing land use pattern in (Ha.)	Proposed Land use for current plan period (Ha.)	Land to be used in remaining period of the life of the mine. (Ha.)	Land used at the conceptual stage i.e.end of mine life in (Ha.)	Area to be converted in the conceptual period.

1	Mining Activities	0.000	0.414	0.500	0.914	Water body
2	Offices/ Store etc.	0.000	0.000	0.000	0.000	Plantation
3	Dumping	0.000	0.000	0.000	0.000	Plantation
4	Mining Road	0.000	0.000	0.000	0.000	Water body
5	Garland drain	0.000	0.000	0.000	0.000	-
6	Settling Tank	0.000	0.000	0.000	0.000	-
7	Safety Zone	0.000	0.543	0.000	0.543	Plantation
8	Stone Stock yards	0.000	0.000	0.000	0.000	
9	Unutilized	1.4570	0.000	0.000	0.000	Plantation
Total		**1.4570**	**1.4570**	**0.500**	**1.4570**	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone,Dumping Area, Unutilized Area, and Office Area.		0.543 Ha	869
2	Along Approach Road		0.354 KM	708
TOTAL				**1576**

- 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 708 X 800 = Rs 566400 (Gabion Plantation along approach road) 868 X 400 = 694400 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	12,60,800	126080
3	Fencing	1,00,000	
4	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs (3 point) - Rs.27,270 • Ground Water (2 point) - Rs.12,420 • Noise 24 hrs (3 point) -Rs.21,000 • Soil (3 point) -Rs.40,920 **Total -Rs. 1,01,610** **(Per Season)** **At least two seasons in a Year -Rs. 1,01,610 x 2** **= Rs. 2,03,220** **Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022**	--	2,03,220
Total		**12,60,800**	**6,29,300**

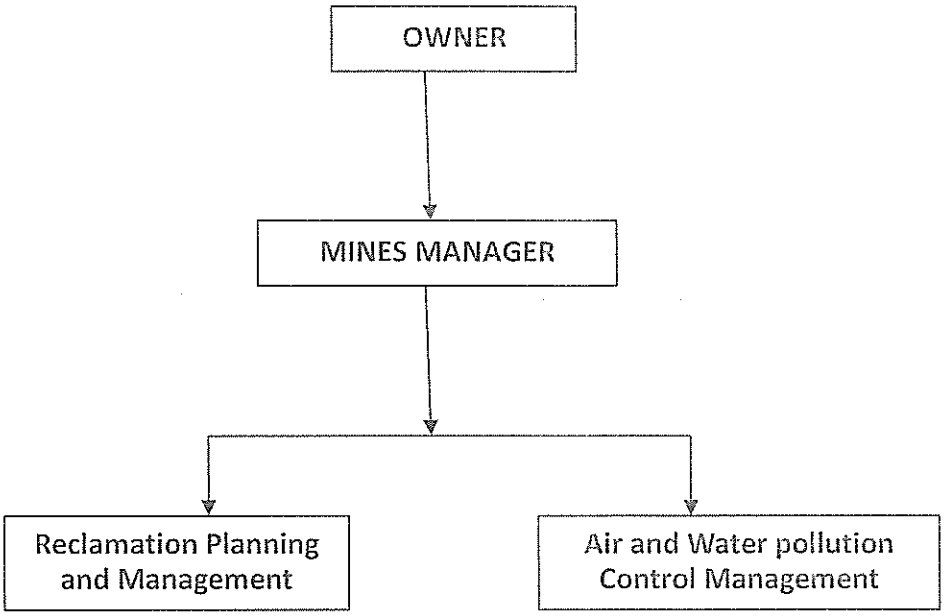
Environment Monitoring Programmed

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 Station	6 Monthly

Solid Waste Management

54080 cum.O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Organization Structure



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 generates 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 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 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, injuryor 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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5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
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The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

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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 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 Jokmari (Guttibera) Stone Mine of Shri Chaturanand Pandey, Village : Jokmari (Guttibera), Thana : Sakrogarh, Distt. : Sahibganj, Jharkhand (1.457 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). 10% of the total green belt proposed shall be allocated under this clause.
II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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14. **Mirapara Stone Mine of M/s Vidyarthi Stone Works (Prop. : Shri Prashant Pandey), Village : Mirapara, Thana : Borio, Distt. : Sahibganj, Jharkhand (2.468 Ha).**

(Proposal no.: SIA/JH/MIN/ 530548 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 26.03.2025.

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

Application for Environmental Clearance (EC).

EC application for : Proposed Capacity- 363214Cum (Max.) / 980676 Tons

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Mirapahar Stone Deposit Stone Mine Project Type – Black Stone Mine	
2	Lessee:	:	M/S Vidyarthi Stone Works Prop: - Prashant Pandey	
3	Lease Address	:	M/S Vidyarthi stone Works PROP: - Prashant Pandey VILL- Mirapara, Thana- Borio, Dist- Sahibganj, Jharkhand	
4	Lease Area	:	2.468 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs.136.84 Lakhs	Recurring Cost: Rs 5.02Lakhs
7	EMP Budget	:	Capital Cost: Rs. 9.190 Lakhs	Recurring Cost: Rs. 5.801 Lakhs
8	New or Expansion	:	New	

9	Mineable Reserves	:	1928354 Tons
10	Mine Life	:	05 years.
11	Man power	:	32Person
12	Water Requirement	:	6.44 KLD (Drinking: 0.300 KLD, Dust Suppression: 1.988 KLD, Plantation: 4.152 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	Nil 20 KVA D.G. Set proposed
15	Crusher	:	No crusher
16	Nearest Water Body	:	River Ganga is Flowing west to east – 5.26 Km in east direction
17	Nearest Habitation	:	Gilamari Village – 0.5 Km
18	Nearest Rail Station	:	Sahibganj Railway Station at areal distance of 11 Km from applied area.
19	Nearest Air Port	:	Deoghar Airport is at areal distance of 123.84 Km SW direction away from applied area.
20	Nearest Forest	:	DFO (Sahibganj), letter no.- 2452 Dated: 01.10.2024 certified that the distance of reserved / protected forest is more than 250 m from proposed project site..
21	Road & Highways	:	The distance of Approach Road is 437 m, after that this road connects to NH-33 at 2.8 Km from the mine site in north direction.

CO-ORDINATES

Latitude	Longitude
25° 12' 23.72597640" N	087° 41' 23.79355080" E
25° 12' 25.20380160" N	087° 41' 23.87136480" E
25° 12' 26.54872920" N	087° 41' 23.98534800" E
25° 12' 26.30619360" N	087° 41' 26.65059000" E
25° 12' 26.21531880" N	087° 41' 29.77949040" E
25° 12' 25.82473320" N	087° 41' 32.55192960" E
25° 12' 24.22570320" N	087° 41' 31.91909280" E
25° 12' 22.27740120" N	087° 41' 31.40927520" E
25° 12' 22.85020800" N	087° 41' 25.10784960" E
25° 12' 23.35792320" N	087° 41' 24.39537000" E

LAND DETAILS

Khata no.	Plot no.
22 & 04	12 (P) & 17 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 228/M, dated 08.02.2025.
2	CO	:	The CO, Borio, Sahibganj vide letter no. 706/Ra, dated 20.09.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster & Grid certificate	:	DMO, Sahibganj vide memo no. 355/M, dated 20.02.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site and also certified that the proposed project site is outside of Redzone Grid 1,3,4 & 7.
4	DFO Wild Life	:	DFO – cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2455, dated 01.10.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide letter no. 2454, dated 01.10.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Sahibganj has been certified vide memo no. 511/M, dated 20.03.2025 that this project is mentioned in approved DSR of Sahibganj District as a potential area (Page no. 181).
7	Gram Sabha	:	Gram Sabha conducted on 23.07.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Memo No. 356/M, dated 20.02.2025.
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 Mechanized Method	
2	Quarry Area	:	0.472Ha. (During plan period)	Life of Mine – 05 year
3	Waste Generation	:	25670 cum. O.B (During plan period)	
4	Stripping Ratio	:	11:10	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	

7	Elevation of Mine	:	180 to 135 m AMSL
8	Ground Level Elevation	:	135m AMSL
9	Ultimate Working Depth	:	120 m
10	Water Table	:	(During pre-monsoon 16.91m AMSL) (During post-monsoon 14.19 m AMSL)
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	42.53 kg/day slurry explosives
13	Diesel/Fuel requirement	:	HSD – 245.58 liters / day (73.67 KL/year)

Production Details

Years	Production of Cum/Year stone in	Production of Stone in Tones/Year	Overburden in Cum	Intercalated Waste In Cum	Total Waste in Cum
1st	71222	192298	23460	3749	**27209**
2nd	71383	192734	2210	3757	**5967**
3rd	72514	195786	0	3817	**3817**
4th	73563	198621	0	3872	**3872**
5th	74532	201237	0	3923	**3923**
Total	**363214**	**980676**	**25670**	**19117**	**44787**

LAND USE

Land Utilization	Existing Land Use (Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry	0	1.365	1.996 (0.210 ha) area shall be backfilled. 0.989 ha area shall be left as water reservoir & 0.798 ha left as dead benches
Waste Dump	0	0.286	0
Road	0	0.010	0
Crusher	0	0.201	0
S.Z. Plantation	0	0.472	0.472

Total	0.00	2.334	2.334
Unused Area	2.468	0.134	0
Total Lease Area	2.468		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.472 Ha	755
2	Along Approach Road		0.437km	584
TOTAL				1339

- 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
2	Plantation 584 X 800 = Rs 4,67,200 (Gabion Plantation along approach road) 755 X 400 = 3,02,000 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	7,69,000	76,920
3	Fencing	150000	
4	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs (3 point) - Rs.27,270 • Ground Water (2 point) - Rs.12,420 • Noise 24 hrs (3 point) - Rs.21,000 • Soil (3 point) -Rs.40,920 **Total -Rs. 1,01,610 (Per Season)** **At least two seasons in a Year -Rs. 1,01,610 x 2**	--	2,03,220

	= Rs. 2,03,220 Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022		
Total		9,19,000	5,80,140

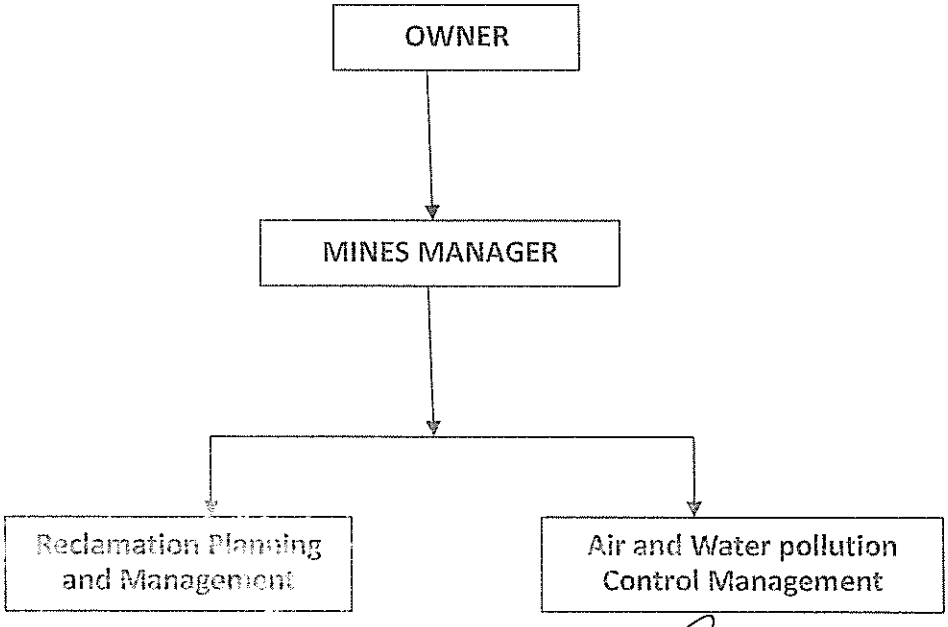
Environment Monitoring Programme

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	One Day Monitoring (within 6 months)
2.	Water	2 stations	One Day Monitoring (within 6 months)
3.	Soil	3 stations	One Day Monitoring (within 6 months)
4.	Noise	3 stations	One Day Monitoring (within 6 months)

Solid Waste Management

25670 cum. O.B shall be generated during the plan period which shall be backfilled within the exhausted quarry.

Organization Structure



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 generates 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 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 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, injuryor 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	Unwanted	Very	Catastrophic	5

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

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

Handling of Explosives

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

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

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

- Proper and safe storage of explosives in approved and Licensed Magazine

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

- Mine road shall be made smooth regularly with a road roller

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

Undertaking submitted affirming:

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

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Mirapara Stone Mine of M/s Vidyarthi Stone Works (Prop. : Shri Prashant Pandey), Village : Mirapara, Thana : Borio, Distt. : Sahibganj, Jharkhand (2.468 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). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

****

15. Siulibana Stone Mine of M/s Karnika Mining Pvt. Ltd., Village : Siulibana, Thana : Shikaripara, Distt. : Dumka, Jharkhand (2.152 Ha).

(Proposal no.: SIA/JH/MIN/ 530491 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 26.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for : Proposed Capacity- 85120cum/annum or 229824TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Siulibana Stone Mine Project Type – Black Stone Mine	
2	Lessee:	:	M/s Karnika Mining Pvt. Ltd Shri Ravi Shankar Kumar & Shri Manick Chand Maheshwari	
3	Lessee Address	:	Village: Siulibana, Thana- Shikaripara, Thana No. –24, District- Dumka, State- Jharkhand.	
4	Lease Area	:	2.152Ha.	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital: 131.285 Lakhs	Recurring: 37.33 Lakhs per year
7	EMP Budget	:	Capital: 6.163Lakhs	Recurring: 4.995Lakhs per year
8	New or Expansion	:	New	
9	Mineable Reserves	:	3,98,269 Cum	10,75,325 Tons
10	Mine Life	:	5 years.	
11	Man power	:	38Person	
12	Water Requirement	:	5.266 KLD (Drinking: 0.57 KLD, Dust Suppression: 1.36 KLD, Plantation: 3.336 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	Nil 20 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Brahmani River – 12.65 km – N direction.	
17	Nearest Habitation	:	Shikharipara – 14 km in the NWdirection.	

18	Nearest Rail Station	:	PakdahaHarinsing Railway Station is at areal distance of 11.35 km N direction.
19	Nearest Air Port	:	Deoghar Airport is at areal distance of 93 km NW direction.
20	Nearest Forest	:	DFO Forest Division,Dumkaletter no.- 1931 Dated: 23/08/2024 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.
21	Road & Highways	:	NH–114A (Dumka-Rampurhat Road) is at areal distance of 8.90 km N direction.

CO-ORDINATES

Point ID	Latitude	Longitude
1	24° 08' 12.40427546" N	087° 34' 19.75318457" E
2	24° 08' 12.05896881" N	087° 34' 20.33544798" E
3	24° 08' 11.68901495" N	087° 34' 20.99577662" E
4	24° 08' 11.35854952" N	087° 34' 21.58599282" E
5	24° 08' 11.28035689" N	087° 34' 21.73809650" E
6	24° 08' 11.06137440" N	087° 34' 21.71679816" E
7	24° 08' 10.87393697" N	087° 34' 21.68932976" E
8	24° 08' 10.63712380" N	087° 34' 21.61345250" E
9	24° 08' 10.24290287" N	087° 34' 21.45243707" E
10	24° 08' 09.96573877" N	087° 34' 21.29243782" E
11	24° 08' 09.43731226" N	087° 34' 21.11717026" E
12	24° 08' 09.10140332" N	087° 34' 20.92622274" E
13	24° 08' 08.78833789" N	087° 34' 20.72889211" E
14	24° 08' 08.63541026" N	087° 34' 20.63335734" E
15	24° 08' 09.01221954" N	087° 34' 19.53877181" E
16	24° 08' 09.42200142" N	087° 34' 18.34840382" E
17	24° 08' 09.80960157" N	087° 34' 17.22247016" E
18	24° 08' 10.20859124" N	087° 34' 16.06345029" E
19	24° 08' 10.10003718" N	087° 34' 16.00807239" E

20	24° 08' 10.22466268" N	087° 34' 15.70620591" E
21	24° 08' 10.54860182" N	087° 34' 15.29576921" E
22	24° 08' 10.78461049" N	087° 34' 14.80563863" E
23	24° 08' 10.85071209" N	087° 34' 14.43299430" E
24	24° 08' 11.17449107" N	087° 34' 13.54852012" E
25	24° 08' 11.42379770" N	087° 34' 12.93377548" E
26	24° 08' 11.61105839" N	087° 34' 12.38291216" E
27	24° 08' 11.79192254" N	087° 34' 11.99099988" E
28	24° 08' 12.29087484" N	087° 34' 12.04417884" E
29	24° 08' 12.41185080" N	087° 34' 11.97138050" E
30	24° 08' 12.65324434" N	087° 34' 11.94777890" E
31	24° 08' 13.04989140" N	087° 34' 12.02097853" E
32	24° 08' 13.37688276" N	087° 34' 12.05769514" E
33	24° 08' 13.34434704" N	087° 34' 12.52480475" E
34	24° 08' 13.20360740" N	087° 34' 12.99588938" E
35	24° 08' 13.12596446" N	087° 34' 13.38036487" E
36	24° 08' 13.16483692" N	087° 34' 13.58340901" E
37	24° 08' 13.29570752" N	087° 34' 13.57204990" E
38	24° 08' 13.32291824" N	087° 34' 13.86880673" E
39	24° 08' 13.47841941" N	087° 34' 13.85046289" E
40	24° 08' 13.47488700" N	087° 34' 14.28206173" E
41	24° 08' 13.39265075" N	087° 34' 14.57321039" E
42	24° 08' 13.23764180" N	087° 34' 14.85746554" E
43	24° 08' 13.12279396" N	087° 34' 15.26018854" E
44	24° 08' 12.95238427" N	087° 34' 15.77680073" E
45	24° 08' 12.80530969" N	087° 34' 16.25713924" E
46	24° 08' 12.67014790" N	087° 34' 16.73375995" E

47	24° 08' 12.57653173" N	087° 34' 17.08877565" E
48	24° 08' 12.48696434" N	087° 34' 17.73283409" E
49	24° 08' 12.25127859" N	087° 34' 18.82805551" E
50	24° 08' 12.12434951" N	087° 34' 19.42199307" E

LAND DETAILS

Khata no.	Plot no.
16	595, 617, 618 & 619

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 436/M, dated 25.02.2025.
2	CO	:	The CO, Shikaripara vide letter no. 96/Ra., dated 08.02.2025 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Dumka vide memo no. 458/M, dated 03.03.2025 certified that 01 other mining lease area (6.34 Acre) exists within 500 meters radius from proposed project site and total area is 11.66 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 103, dated 15.01.2025 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Dumka Forest Division vide letter no. 1931, dated 23.08.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Dumka has been certified vide letter no. 541/M, dated 25.03.2025 that this project is mentioned in approved DSR of Dumka District as a potential area (Page no. 319, Sl. No. 112).
7	Gram Sabha	:	Gram Sabha conducted on 28.08.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Dumka vide Letter No. 520/M, dated 18.03.2025.
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	:	1.542Ha. (During plan period)	Life of Mine – 05year
3	Waste Generation	:	27720 cum. O.B (During plan period)	
4	Stripping Ratio	:	01:01	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Elevation of Mine	:	272 to 251 m AMSL	
8	Ground Level Elevation	:	251 m AMSL	
9	Ultimate Working Depth	:	22 m	
10	Water Table	:	(During pre-monsoon 55m AMSL) (During post-monsoon 65 m AMSL)	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	80.50 kg/day nitro mix explosives	
13	Diesel/Fuel requirement	:	HSD – 426.09 liters / day (127.827 KL/year)	

Production Details

SUMMARY OF YEAR WISE OF PRODUCTION						
Year	Production in Cum/Year	Production in Cum/Day	O.B. in Cum/Year	Top Soil in Cum/Year	Production in Tons/Year	Production in Tons. /Day
1st	78736	262	27720	0	212587	709
2nd	85120	284	0	0	229824	766
3rd	77805	259	0	0	210074	700
4th	80798	269	0	0	218153	727
5th	75810	253	0	0	204687	682

Total	398269	284 (Max.)	27720	0	1075325	766 (Max.)

LAND USE

Existing, Proposed & Conceptual Land Use

SL. No.	Pattern	Present/Existing land use pattern in (Ha.)	Land used at the conceptual stage i.e. end of mine life in (Ha.)	Area to be converted in the conceptual period.
1	Mining Activities	0.404	1.542	Water Body
2	Offices/ Store etc.	0.000	0.000	Plantation
3	Dumping	0.000	0.100	Plantation
4	Mining Road	0.000	0.000	Water Body
5	Garland drain	0.000	0.030	
6.	Green belt	0.000	0.000	
7	Settling Tank	0.000	0.000	
8	Safety Zone	0.000	0.510	Plantation
9	Unutilized	1.748	0.000	
10	Green belt	0.000	0.000	Green Belt
11	Crusher	0.00	0.000	
	TOTAL	2.152	2.152	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.510 Ha	816
2	Along Approach Road		0.220km	296
TOTAL				1112

- 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)	----	2,40,000
2	Plantation 296 X 800 = Rs 2,36,800 (Gabion Plantation along approach road) 816 X 400 = 3,26,400 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	563200	56320
3	Fenceing	53,100	
4	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs (3 point) - Rs.27,270 • Ground Water (2 point) - Rs.12,420 • Noise 24 hrs (3 point) - Rs.21,000 • Soil (3 point) -Rs.40,920 Total -Rs. 1,01,610 (Per Season) At least two seasons in a Year -Rs.1,01,610 x2= Rs. 2,03,220 Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022	----	2,03,220
Total		**6,16,300**	**4,99,540**

Environment Monitoring Programme

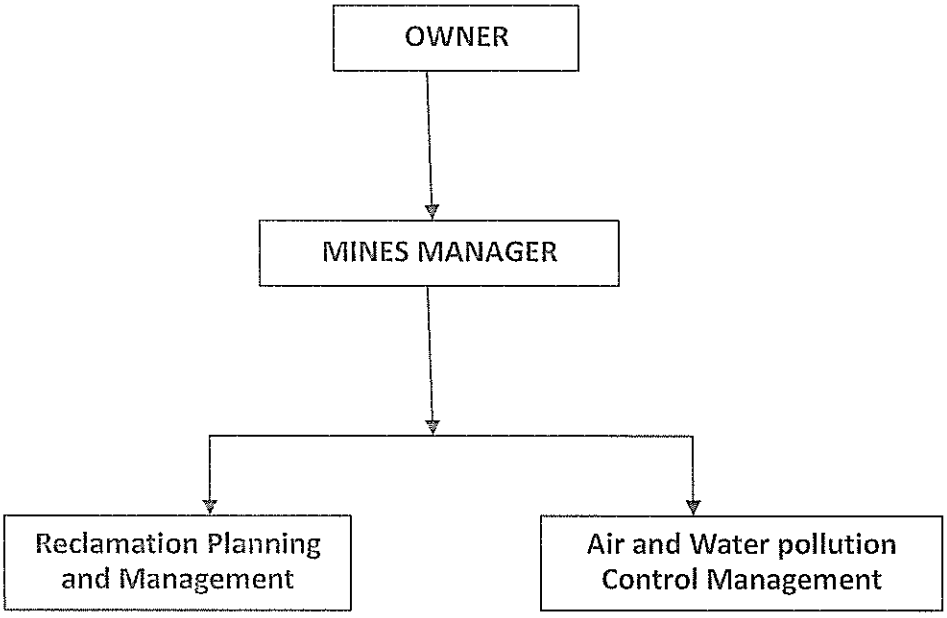
SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	One Day Monitoring (within 6 months)
2.	Water	2 stations	One Day Monitoring (within 6 months)
3.	Soil	3 stations	One Day Monitoring (within 6 months)
4.	Noise	3 stations	One Day Monitoring (within 6

			months)

Solid Waste Management

27720cum. O.B shall be generated during the plan period which shall be backfilled within the exhausted quarry.

Organization Structure



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 generates 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 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 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, injuryor

		system damage

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone mining operation

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

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

Preventive Measures:

Face Stability

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

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

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

Control Measures

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

- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

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

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

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.
The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.
The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.
Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling 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 Siulibana Stone Mine of M/s Karnika Mining Pvt. Ltd., Village : Siulibana, Thana : Shikaripara, Distt. : Dumka, Jharkhand (2.152 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). 10% of the total green belt proposed shall be allocated under this clause.
II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a

time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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16. **Talmi Ujdaha Stone Deposit of M/s Khushimina Stone Works (Prop. : Shri Ratan Kumar Gupta), Village : Talmi Ujdaha, Thana : Borio, Distt. : Sahibganj, Jharkhand (2.37 Ha).**

(Proposal no.: SIA/JH/MIN/ 530084 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

Application for Environmental Clearance (re-appraisal of Environment Clearance issued by DEIAA, Sahibganj).

The project has been granted EC by DEIAA, Sahibganj vide letter no. EC/DEIAA/2016-17/112, dated 17.03.2018.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Sahibganj which has been taken up for consideration on 26.03.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 1230/M, dated 14.11.2024 by DMO, Sahibganj is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide memo no. 2388, dated 30.12.2024.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.

The self certified compliance report has been submitted and also presented before the Committee.

EC Application for: Proposed Capacity- 155960.60 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Tamil Ujdaha Stone Mine	
2	Lessee:	:	Sri Ratan Kumar Gupta	
3	Lessee Address	:	Vill- Kirtaniya, P.O- Ammapali, P.S – Kirtaniya, Dist- Bhagalpur, Bihar	
4	Lease Area	:	2.37 ha.	5.86 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 47.44 Lakhs	
7	EMP Budget	:	Capital: Rs. 8.45 Lakhs	Recurring: 5.77 Lakhs / year
8	New or Expansion	:	DEIAA to SEIAA (re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	1479452tons	
10	Mine Life	:	Upto the lease period i.e. 10.01.2020 to 09.01.2030.	
11	Man power	:	22	
12	Water Requirement	:	6.122 KLD (Drinking: 0.330 KLD, Dust Suppression: 1.400 KLD,	

			Plantation: 4.392 KLD)
13	Water Source	:	Water will be taken from nearby village
14	DG Set / power	:	20 KVA
15	Crusher	:	No Crusher
16	Nearest Water Body	:	River Ganges – 16 Km
17	Nearest Habitation	:	Hathmari 1.72 km
18	Nearest Railway Station	:	Mirzachouki Railway Station is at aerial distance of 14 km
19	Nearest Air Port	:	Deoghar Airport at 110 km.
20	Nearest Forest	:	More than 250m, as per DFO Territorial, Sahibganj, vide letter no.: 1011, dated 25/05/2017
21	Road & Highways	:	Nearest Highway Sahibganj- Mirzachouki is at 14 km.

CO-ORDINATES

Geo-Coordinates of all corner points of Demarcated Block Boundary (GPS Co-ordinates)

S. No.	Latitude	Longitude
01	25°12' 24.02"N	87°30' 45.97"E
02	25°12' 20.60"N	87°30' 44.83"E
03	25°12' 20.03"N	87°30' 44.02"E
04	25°12' 20.04"N	87°30' 43.04"E
05	25°12' 18.95"N	87°30' 41.02"E
06	25°12' 18.95"N	87°30' 39.03"E
07	25°12' 17.95"N	87°30' 37.99"E
08	25°12' 16.93"N	87°30' 36.01"E
09	25°12' 18.31"N	87°30' 36.00"E
10	25°12' 18.72"N	87°30' 37.18"E
11	25°12' 19.16"N	87°30' 37.88"E
12	25°12' 19.90"N	87°30' 38.55"E
13	25°12' 20.35"N	87°30' 39.59"E
14	25°12' 20.14"N	87°30' 39.69"E
15	25°12' 21.11"N	87°30' 41.88"E
16	25°12' 21.43"N	87°30' 41.39"E
17	25°12' 21.77"N	87°30' 41.89"E

18	25°12' 21.43"N	87°30' 42.56"E
19	25°12' 22.98"N	87°30' 43.96"E
20	25°12' 23.79"N	87°30' 42.71"E
21	25°12' 24.10"N	87°30' 42.85"E

LAND DETAILS

Khata no.	Plot no.
09	139(P), 140 (P), 141 & 185 (P)
21	145 (P) & 184 (P)
28	144 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	i. The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 1533/M, dated 12.10.2017. ii. Lease deed 10.01.2020 to 09.01.2030.
2	CO	:	The CO, Mandro vide memo no. 461/Ra., dated 06.10.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 1229/M, dated 14.11.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO –cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1404, dated 28.07.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide memo no. 1011, dated 25.05.2017 certified that the distance of forest land is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Sahibganj District (Sl. No. 07, Page no. 129).
7	Gram Sabha	:	Gram Sabha conducted on 20.06.2017.
8	Scheme / Mine Plan Approval	:	i. Mining plan approved by DDM, Santhal Pargana Circle, Dumka vide memo no. 386/DDM, dated 09.08.2017.

			ii. Mining plan approved by DMO, Sahibganj vide letter no. 840/M, dated 13.09.2022.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Sahibganj vide letter no. EC/DEIAA/2016-17/112, dated 17.03.2018.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide memo no. 2388, dated 30.12.2024.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-7557202 /2020/221, dated 30.05.2020.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/RO/DMK/CTO-18441784 /2024/128, dated 30.04.2024.
13	Production Report	:	Production report issued by DMO, Sahibganj vide memo no. 1230/M, dated 14.11.2024.
14	Grid certificate	:	DMO, Sahibganj vide memo no. 425/M, dated 07.03.2025 certified that the proposed project site is outside of Redzone Grid 1, 3, 4 & 7.
15	Qualified Person	:	Shri Anal Kumar Sinha through e-mail dated 26.03.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Mechanized Method	
2	Quarry Area	:	1.580 Ha	Life of Mine – Upto the lease period i.e. 10.01.2020 to 09.01.2030
3	Waste Generation	:	0 cum	
4	Stripping Ratio	:	1.0.00	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m,	
7	Elevation of Mine	:	241 m AMSL	
8	Ground Level Elevation	:	230 m AMSL	
9	Ultimate Working Depth	:	31 m	
10	Water Table	:	Post Monsoon – 200.67 m AMSL Pre Monsoon – 198.32 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive	:	69 km/day slurry explosives	

	Requirement		
13	Diesel/Fuel requirement	:	HSD –245 liters / day (73.67 KL/year)

Production Details

Years	Production of stone in Tones/Year	Production of O.B in Cum/Year	Total waste in cum	Stripping ratio t/m3
1st	156088	-	-	1.0.00
2nd	156088	-	-	1.0.00
3rd	156074	-	-	1.0.00
4th	155925	-	-	1.0.00
5th	155628	-	-	1.0.00
Total	**779803**	**-**	**-**	**-**

Land Use

Sl. No.	Pattern	Existing land Use (Acre)	At the end of Plan Period (Acre)	At Conceptual Period (Acre)
1	Quarry	0.500	1.500	1.580
2	Road	0.020	0	0
3	Waste Dumping / Rest Shed	0.120	0	0
4	Plantation (Green Belt)	0.790	0.790	0.790
5	Total Area Used	1.430	2.290	2.370
6	Total Unused Area	0.942	0.082	0
	TOTAL	**2.370**	**2.370**	**2.370**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.790 Ha	1264
2	Along Approach Road		0.150 km	200
TOTAL				**1464 Trees**

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

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

Budget for Environmental Management

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1000 per Tanker)	--	3,00,000
2	Plantation 200 X 800 = Rs 1,60,000 (Gabion Plantation along approach road) 1464 X 400 = 5,85,600 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	7,45,600	74,560
3	Fencing	100000	
4	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs. (3 point)-Rs.27,270 • Ground Water (2 point) -Rs.12,420 • Noise 24 hrs (3 point) -Rs.21,000 • Soil (3 point) -Rs.40,920 **Total -Rs. 1,01,610** **(Per Season)** **At least two seasons in a Year -Rs. 1,01,610 x 2 = Rs. 2,03,220** **Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022**	--	2,03,220
Total		**8,45,600**	**5,77,780**

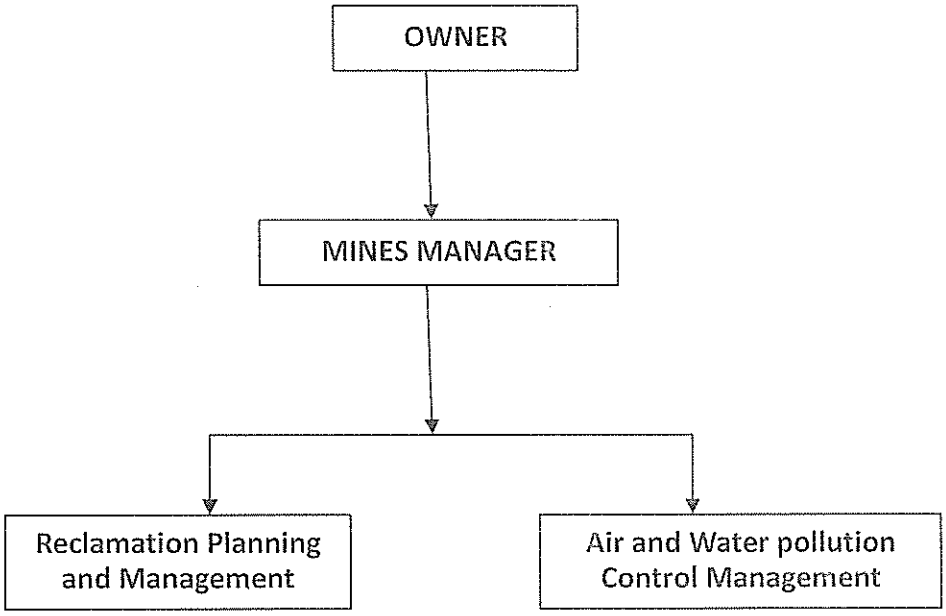
Environment Monitoring Programme:

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 stations	6 Monthly

Solid Waste Management

0 cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Organization Structure



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 generates 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 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 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, injuryor 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**"

<u>Preventive Measures:</u>

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 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 Talmi Ujdaha Stone Deposit of M/s Khushimina Stone Works (Prop. : Shri Ratan Kumar Gupta), Village : Talmi Ujdaha, Thana : Borio, Distt. : Sahibganj, Jharkhand (2.37 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. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.
II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*Ek Ped Ma Ke Naam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.
III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety

zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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17. Bekchuri Stone Mine of M/s Tridev Stone Works (Partner : Shri Prem Singh), Village : Bekchuri, Thana : Taljhari, Distt. : Sahibganj, Jharkhand (4.17 Ha).

(Proposal no.: SIA/JH/MIN/ 513825 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

Application for Environmental Clearance (re-appraisal of Environment Clearance issued by DEIAA, Sahibganj).

The project has been granted EC by DEIAA, Sahibganj vide letter no. EC/DEIAA/2016-17/38, dated 17.03.2017.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Sahibganj which has been taken up for consideration on 26.03.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ · All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 1191/M, dated 30.10.2024 by DMO, Sahibganj is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide memo no. 97, dated 24.01.2025.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.

The self certified compliance report has been submitted and also presented before the Committee.

EC Application for: Proposed Capacity- 282882 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Bekchuri Stone Mine	
2	Lessee:	:	Shri Prem Singh	
3	Lessee Address	:	AT – Ashram Gali, Sakrogarh, P.O.+P.S.+District- Sahibganj, Jharkhand	
4	Lease Area	:	4.17 ha.	10.32 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 82.17 Lakhs	
7	EMP Budget	:	Capital: Rs. 6.676 Lakhs	Recurring: 4.598 Lakhs / year
8	New or Expansion	:	DEIAA to SEIAA (re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	2501172.2tons	
10	Mine Life	:	Upto the lease period i.e. 13.10.2017 to 12.10.2027.	
11	Man power	:	34	
12	Water Requirement	:	4.76 KLD (Drinking: 0.51 KLD, Dust Suppression: 0.456 KLD, Plantation: 3.80 KLD)	
13	Water Source	:	Water will be taken from nearby village	

14	DG Set / power	:	20 KVA
15	Crusher	:	No Cruser
16	Nearest Water Body	:	River Ganges – 8.94 Km in NW direction.
17	Nearest Habitation	:	Bekchuri 0.670 km
18	Nearest Railway Station	:	Kalian Chak at a distance of about 4.39 km located on the south-east side from lease area.
19	Nearest Air Port	:	Deoghar Airport situated near about 121.46 Km toward SW direction
20	Nearest Forest	:	More than 250m, as per DFO Territorial, Sahibganj, vide letter no.: 1658, dated 18/11/2016
21	Road & Highways	:	The SH-18 (Dumka-Sahibganj) road is crossing on the western side at a distance of about 9.0km and from lease area.

CO-ORDINATES

Geo-Coordinates of all corner points of Demarcated Block Boundary (GPS Co-ordinates)

Point ID	Latitude	Longitude
P1	25°03' 11.10"N	87°42' 24.15"E
P2	25°03' 11.20"N	87°42' 16.15"E
P3	25°03' 14,55"N	87°42' 13.10"E
P4	25°03' 16.20"N	87°42' 10.15"E
P5	25°03' 19.25"N	87°42' 08.85"E
P6	25°03' 19.70"N	87°42' 12.65"E
P7	25°03' 16.95"N	87°42' 16.35"E
P8	25°03' 17.75"N	87°42' 22.45"E
P9	25°03' 14.85"N	87°42' 22.15"E
P10	25°03' 13.10"N	87°42' 24.25"E

LAND DETAILS

Khata no.	Plot no.
01, 03 & 07	07, 13 (P), 14 (P) & 15 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	i. The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 221/M, dated 28.01.2017. ii. Lease deed 13.10.2017 to 12.10.2027.
2	CO	:	The CO, Taljhari vide memo no. 783, dated 14.10.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 423/M, dated 07.03.2025 certified

			that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO –cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 668, dated 08.03.2025 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide memo no. 1658, dated 18.11.2016 certified that the distance of forest land is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Sahibganj District (Sl. No. 19, Page no. 130).
7	Gram Sabha	:	Gram Sabha conducted on 14.10.2016 and 20.10.2016 respectively.
8	Scheme / Mine Plan Approval	:	Mining scheme approved by DMO, Sahibganj vide letter no. 232/M, dated 14.03.2022.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Sahibganj vide letter no. EC/DEIAA/2016-17/38, dated 17.03.2017.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide memo no. 97, dated 24.01.2025.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide ref. no. JSPCB/HO/RNC/CTE/2024166 /2018/ 256, dated 22.03.2018.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/HO/RNC/CTO-15051274 /2023/1011, dated 11.06.2023.
13	Production Report	:	Production report issued by DMO, Sahibganj vide memo no. 1191/M, dated 30.10.2024.
14	Grid certificate	:	DMO, Sahibganj vide memo no. 316/M, dated 18.02.2025 certified that the proposed project site is outside of Redzone Grid 1, 3, 4 & 7.
15	Qualified Person	:	Shri Tapan Kumar Chakravarty through e-mail dated 26.03.2025 affirmed that the mining scheme has been prepared by him.

Working Details

1	Mining Method	:	Mechanized Method

2	Quarry Area	:	3.476 Ha	Life of Mine – Upto the lease period i.e. 13.10.2017 to 12.10.2027
3	Waste Generation	:	4650 cum	
4	Stripping Ratio	:	09:50	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m,	
7	Elevation of Mine	:	124 m AMSL	
8	Ground Level Elevation	:	124 m AMSL	
9	Ultimate Working Depth	:	36 m	
10	Water Table	:	Post Monsoon – 71.85 m AMSL Pre Monsoon – 67.41 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	26 km/day	
13	Diesel/Fuel requirement	:	HSD –260 liters / day (78 KL/year)	

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.
1st	104461.48	2.7	282046	348	940	1950	6.5
2nd	104350.00	2.7	281745	347	939	0	0
3rd	104295.56	2.7	281598	347	938	0	0
4th	104771.11	2.7	282882	349	942	2700	9
5th	104665.56	2.7	282597	348	941	0	0
Total	**522543.70**	**2.7**	**1410868.00**	**349 (Max.)**	**942 (Max.)**	4650	9

Land Use

Sl. No.	Pattern	Existing Land Use (Ha)	Proposed Current Plan Period	Proposed Land Use at End of Life of Mine (Ha)

			(Ha)	
1	Quarry	0.381	2.099	3.476 (Entire area shall be left as water reservoir for rain water harvesting)
2	Road	0.004	0.003	0.002
3	Plantation	-	0.697	0.697
4	Balance	3.785	1.371	0.000
	TOTAL	0.385	2.799	4.170

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.697 Ha	1115
2	Along Approach Road		0.114 km	152
TOTAL				1267 Trees

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

Budget for Environmental Management

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1000 per Tanker)	--	3,00,000
2	Plantation 800 X 152 = Rs 1,21,600 (Gabion Plantation along approach road) 400 X 1115 = Rs.4,46,000 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	5,67,600	56,760
3	Fencing	100000	
4	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs. (3 point)-Rs. 27,270 • Ground Water (2 point) -Rs.12,420 • Noise 24 hrs (3 point) -Rs.21,000 • Soil (3 point) -Rs.40,920	--	2,03,220

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
	Total -Rs. 1,01,610 (Per Season) At least two seasons in a Year -Rs. 1,01,610 x 2 = Rs. 2,03,220 Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022		
Total		6,67,600	4,59,980

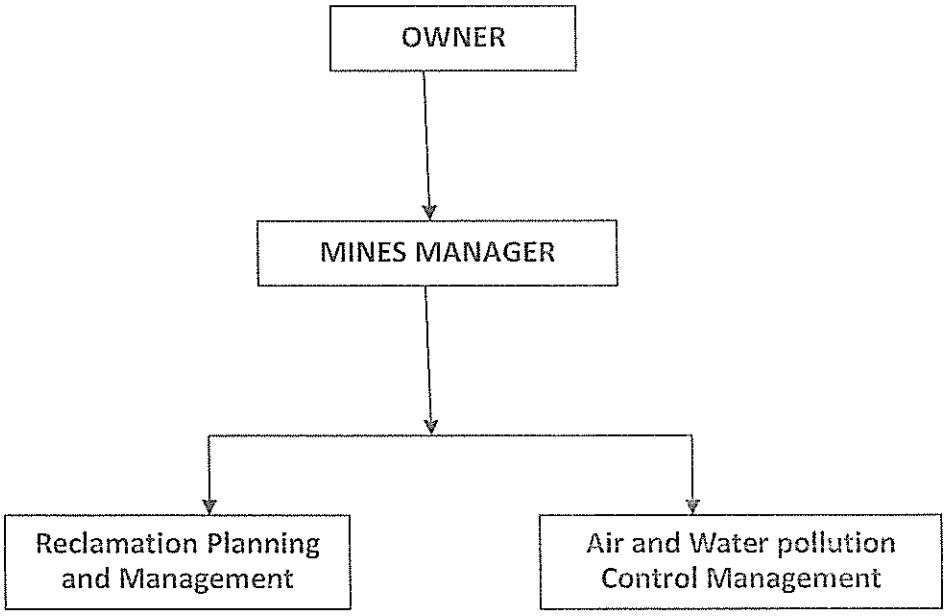
Environment Monitoring Programme:

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 stations	6 Monthly

Solid Waste Management

4650 cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Organization Structure



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 generates 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 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 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, injuryor 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	Unwanted	Very	Catastrophic	5

	Explosives	Explosion	Unlikely		
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 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 Bekchuri Stone Mine of M/s Tridev Stone Works (Partner : Shri Prem Singh), Village : Bekchuri, Thana : Taljhari, Distt. : Sahibganj, Jharkhand

(4.17 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. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.

II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"Ek Ped Ma Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

****

18. Pakaria Stone Mine of M/s Balaji Stone Works (Prop. : Shri Mrinal), Mouza : Pakaria, P.S. : Mirzachowki, Distt. : Sahibganj, Jharkhand (2.02 Ha).

(Proposal no.: SIA/JH/MIN/ 530543 /2025)

During presentation it was revealed that although LoI was granted vide letter no. 208/M, dated 28.01.2017, the lease has not yet been executed.

The EC was granted by then DEIAA, Sahibganj vide letter no. EC/DEIAA/2017-18/275, dated 23.01.2017.

From the documents submitted, there is no clarity as to whether LoI is still valid or not and the reason for non execution of lease.

Hence, the PAs are required to obtained clarification of the above from DC, Sahibganj.

On the receipt of the same the proposal will be taken up for consideration.

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19. Mundali Stone Mine of Shri Manoj Kumar Sah, Mouza : Mundali, P.S. : Mirzachowki, Distt. : Sahibganj, Jharkhand (1.62 Ha).

(Proposal no.: SIA/JH/MIN/ 530547 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

Application for Environmental Clearance (re-appraisal of Environment Clearance issued by DEIAA, Sahibganj).

The project has been granted EC by DEIAA, Sahibganj vide letter no. EC/DEIAA/2016-17/91, dated 13.12.2016.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Sahibganj which has been taken up for consideration on 26.03.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 µg/m^{3}PM 2.5-567 µg/m^3 SO2-18.2 NO2- 19.0 µg/m^3 All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 1174/M, dated 23.10.2024 by DMO, Sahibganj is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide memo no. 1976, dated 25.10.2024.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.

The self certified compliance report has been submitted and also presented before the Committee.

EC Application for: Proposed Capacity- 27945 cum/annum or 83835 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Mundali Stone Mine	
2	Lessee:	:	Shri Manoj Kumar Sah	
3	Lessee Address	:	AT –College Road, P.O.+P.S.- Sahibganj, District- Sahibganj, Jharkhand-816109	
4	Lease Area	:	1.62 ha.	4.00 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 104.735 Lakhs	
7	EMP Budget	:	Capital: Rs. 4.14 Lakhs	Recurring: 5.73 Lakhs / year
8	New or Expansion	:	DEIAA to SEIAA (re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	503151tons	
10	Mine Life	:	Upto the lease period i.e. 04.10.2016 to 03.10.2026.	
11	Man power	:	17	
12	Water Requirement	:	3.89 KLD (Drinking: 0.255 KLD, Dust Suppression: 1.04KLD, Plantation: 2.59 KLD)	
13	Water Source	:	Water will be taken from nearby village	

14	DG Set / power	:	20 KVA
15	Crusher	:	No Crusher
16	Nearest Water Body	:	Ganga River – 15 km
17	Nearest Habitation	:	Mundli Village –862 m
18	Nearest Railway Station	:	Barharwa Railway station is at 24 km (aerial distance).
19	Nearest Air Port	:	Deoghar Airport at 110 km.
20	Nearest Forest	:	More than 250m, as per DFO Territorial, Sahibganj, vide letter no.: 2241, dated 12/12/2015
21	Road & Highways	:	NH-80 is near about 11 km away from applied area

CO-ORDINATES

Geo-Coordinates of all corner points of Demarcated Block Boundary (GPS Co-ordinates)

Latitude	Longitude
25° 14'38.12" N	87°29'46.02" E
To	
25°14'44.17"N	87°29'49.12" E

LAND DETAILS

Khata no.	Plot no.
07	51 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed 04.10.2016 to 03.10.2026.
2	CO	:	The CO, Mandro vide memo no. 463/Ra., dated 06.10.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 1235/M, dated 16.11.2024 certified that 01 other mining lease area (5.50 Acre) exists within 500 meters radius from proposed project site and total area is 9.50 Acre.
4	DFO Wild Life	:	DFO –cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 25, dated 04.01.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide memo no. 2241, dated 12.12.2015 certified that the distance of forest land is more than 250 meter from proposed project site.

6	DSR	:	This project is mentioned in approved DSR of Sahibganj District (Sl. No. 59, Page no. 135).
7	Gram Sabha	:	Gram Sabha conducted on 15.05.2016.
8	Scheme / Mine Plan Approval	:	i. Mine plan approved by DMO, Sahibganj vide memo no. 3894/M, dated 31.10.2015. ii. Mining scheme approved by DMO, Sahibganj vide memo no. 1217/M, dated 07.11.2020.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Sahibganj vide letter no. EC/DEIAA/2016-17/91, dated 13.12.2016.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide memo no. 1976, dated 25.10.2024.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide ref. no. JSPCB/HO/RNC/CTE-2194009/2018/379, dated 17.04.2018.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/RO/DMK/CTO-18597555/2024/108, dated 12.04.2024.
13	Production Report	:	Production report issued by DMO, Sahibganj vide memo no. 1174/M, dated 23.10.2024.
14	Grid certificate	:	DMO, Sahibganj vide memo no. 457/M, dated 17.03.2025 certified that said project falls under grid no. 1 and production is within the over all permissible production limit.
15	Qualified Person	:	Shri P.K. Sen through letter dated 25.03.2025 affirmed that the mining scheme has been prepared by him.

Working Details

1	Mining Method	:	Mechanized Method	
2	Quarry Area	:	1.19 Ha	Life of Mine – Upto the lease period i.e. 04.10.2016 to 03.10.2026.
3	Waste Generation	:	9329 cum	
4	Stripping Ratio	:	06:25	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m,	
7	Elevation of Mine	:	142 m AMSL	
8	Ground Level Elevation	:	142 m AMSL	

9	Ultimate Working Depth	:	24 m
10	Water Table	:	Post Monsoon – 45.37 m AMSL Pre Monsoon – 41.50 m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	39 km/day slurry explosives
13	Diesel/Fuel requirement	:	HSD –160 liters / day (48 KL/year)

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum
1st	27817	3	83451	92.72	278.17	6839
2nd	27854	3	83562	92.85	278.54	1050
3rd	27946	3	83838	93.15	279.46	1440
4th	27945	3	83835	93.15	279.45	0
5th	27882	3	83646	92.94	278.82	0
Total	**1,39,444**		**418332**	**93.15 Max**	**279.46 Max**	**9329**

Land Use

SL	Pattern	Existing Land Use (Ha)	Proposed Land Use (Ha)	Conceptual Land Use (Ha)	Area to be converted in the conceptual period.
1	Quarry	0.13	1.19 (Quarry including Backfilled)	1.19 (Quarry including Backfilled)	Water body
2	Road	0.05	Comes under quarry	Comes under quarry	
3	Plantation	0.00	0.43	0.43	Plantation
4	Unutilized	1.44	0.00	0.00	-
	TOTAL	**1.62**	**1.62**	**1.62**	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.43 Ha	688

2	Along Approach Road		0.260 km	174
TOTAL				**862 Trees**

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

Budget for Environmental Management

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1000 per Tanker)	--	3,00,000
2	Plantation 174 X 800 = Rs 1,39,200 (Gabion Plantation along approach road) 688 X 400 = 2, 75,200 (Plantation within lease area), (also includes Fertilizer, Pesticides, Maintenance)	4,14,400	40,000
3	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs. (3 point)-Rs.27,270 • Ground Water (2 point) -Rs.12,420 • Noise 24 hrs (3 point) -Rs.21,000 • Soil (3 point) -Rs.40,920 **Total -Rs. 1,01,610** **(Per Season)** **At least two seasons in a Year -Rs. 1,01,610 x 2 = Rs. 2,03,220** **Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022**	--	2,03,220
Total		**4,14,400**	**5,73,220**

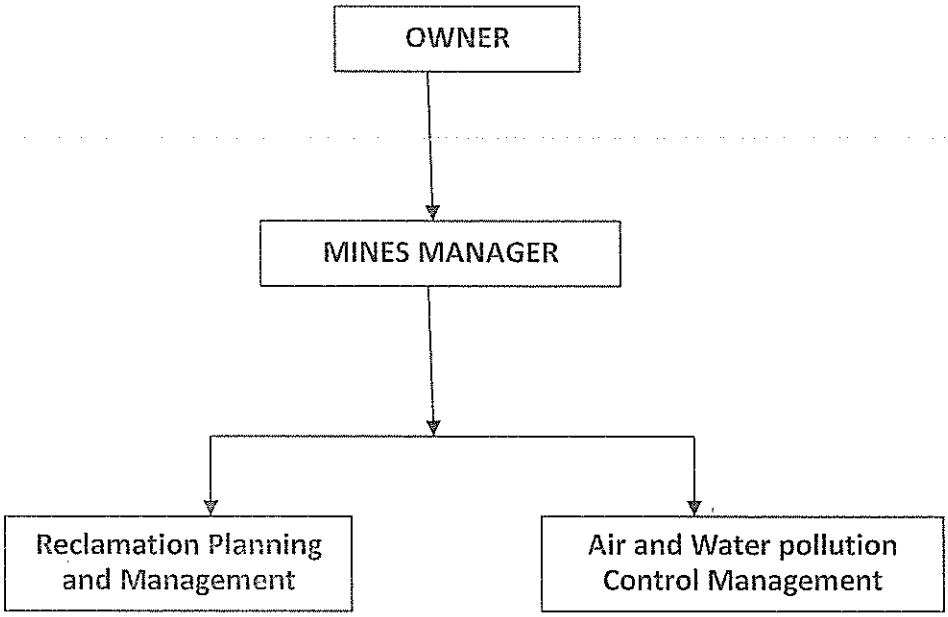
Environment Monitoring Programme:

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 stations	6 Monthly

Solid Waste Management

9329 cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Organization Structure



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 generates 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 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 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, injuryor 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**"

<u>Preventive Measures:</u>

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 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 Mundali Stone Mine of Shri Manoj Kumar Sah, Mouza : Mundali, P.S. : Mirzachowki, Distt. : Sahibganj, Jharkhand (1.62 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. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.
II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"Ek Ped Ma Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.
III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

****

20. **Dunduria Stone Mine of Shri Naveen Kumar Singh, Village : Dunduria, Circle : Gumla, Distt. : Gumla, Jharkhand (1.618 Ha).**

(Proposal no.: SIA/JH/MIN/ 529871 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

Application for Environmental Clearance (re-appraisal of Environment Clearance issued by DEIAA, Sahibganj).

The project has been granted EC by DEIAA, Gumla vide letter no. EC/DEIAA/2017-18/33/2017/29/GML, dated 14.09.2017.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Gumla which has been taken up for consideration on 26.03.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ · All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 355/M, dated 24.03.2025 by DMO, Gumla is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide letter no. 1461, dated 29.11.2024.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.

The self certified compliance report has been submitted and also presented before the Committee.

EC Application for: Proposed Capacity- 27076 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Dunduria Stone Mine	
2	Lessee:	:	Sri Naveen Kumar Singh	
3	Lessee Address	:	R/O- Village- Dunduria, P.O.-Gumla, P.S.- Gumla, District- Gumla, State- Jharkhand	
4	Lease Area	:	1.618 ha.	4.00 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 64.94 Lakhs	
7	EMP Budget	:	Capital: Rs. 8.05 Lakhs	Recurring: 5.73 Lakhs / year
8	New or Expansion	:	DEIAA to SEIAA (re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	503151tons	
10	Mine Life	:	Upto the lease period i.e. 09.12.2017 to 08.12.2027.	
11	Man power	:	20	
12	Water Requirement	:	6.596 KLD (Drinking: 0.300 KLD, Dust Suppression: 2.000 KLD, Plantation: 4.296 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	20 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Khatwa River – 2.5 km	

17	Nearest Habitation	:	Dunduria Village –921 m
18	Nearest Railway Station	:	Lohardaga Railway station is at 45 km (aerial distance).
19	Nearest Air Port	:	Ranchi Airport at 83.93 km.
20	Nearest Forest	:	More than 250m, as per DFO Territorial, Gumla, vide letter no.: 810, dated 30/03/2022
21	Road & Highways	:	Gumla – Garhwa road is near about 1 km away from applied area

CO-ORDINATES

Geo-Coordinates of all corner points of Demarcated Block Boundary

(GPS Co-ordinates)

Point ID	Latitude	Longitude
P1	23º03' 47.69" N	84º33' 06.79" E
P2	23º03' 48.29" N	84º33' 10.44" E
P3	23º03' 46.32" N	84º33' 11.31" E
P4	23º03' 45.34" N	84º31' 11.33" E
P5	23° 03' 45.23" N	84° 33' 11.29" E
P6	23° 03' 42.57" N	84° 33' 11.86" E
P7	23° 03' 42.06" N	84° 33' 07.68" E
P8	23°.03' 43.47" N	84° 33' 07.13" E

LAND DETAILS

Khata no.	Plot no.
117	718 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	i. The Letter of Intent (LoI) has been issued by District Mining Officer, Gumla vide letter no. 106/M, dated 21.01.2017. ii. Lease deed : 09.12.2017 to 08.12.2027.
2	CO	:	The CO, Gumla vide letter no. 19, dated 07.01.2017 has mentioned the plot no. of the project is not recorded as "Jungle - Jhari" in R.S. Khatiyan.
3	DMO	:	DMO, Gumla vide memo no. 354/M, dated 24.03.2025 certified that as per contiguous area there is 01 other mining lease area (4.46 Acre) exists within the vincity of proposed project site and total area is 8.46 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Ranchi vide letter no. 721, dated 28.08.2024 certified that the proposed project site is outside Eco

			Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Gumla Forest Divisioin vide letter no. 810, dated 30.03.2022 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 Gumla District (Sl. No. 08, Page no. 91).
7	Gram Sabha	:	Gram Sabha conducted on 13.01.2017.
8	Scheme / Mine Plan Approval	:	i. Modification of Mine Plan approved by DMO, Gumla vide letter no. 188/M, dated 13.02.2025. ii. Mining scheme approved by Additional Director, Geology, Hazaribag vide letter no. 24/G, dated 31.01.2022. iii. Mine plan approved by AMO, Gumla vide letter no. 882/M, dated 08.03.2017.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Gumla vide letter no. EC/DEIAA/2017-18/33/2017/29/GML, dated 14.09.2017.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide letter no. 1461, dated 29.11.2024.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2082160 /2018/375, dated 13.04.2018.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/RO/RNC/CTO-18319865 /2024/463, dated 21.03.2024.
13	Production Report	:	Production report issued by DMO, Gumla vide memo no. 355/M, dated 24.03.2025
14	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	:	Mechanized Method	
2	Quarry Area	:	0.890 Ha	Life of Mine – Upto the lease period i.e. 09.12.2017 to 08.12.2027.
3	Waste Generation	:	0 cum	
4	Stripping Ratio	:	01:00	

5	Working Days	:	300
6	Benches: size	:	6 m x 6 m,
7	Elevation of Mine	:	663 m AMSL
8	Ground Level Elevation	:	660 m AMSL
9	Ultimate Working Depth	:	33 m
10	Water Table	:	Post Monsoon – 620 m AMSL Pre Monsoon – 617 m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	30 km/day slurry explosives
13	Diesel/Fuel requirement	:	HSD –217.86 liters / day (65.35 KL/year)

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.
1st	10027	2.7	27075	33.42	90.25	0	0
2nd	10013	2.7	27033	33.37	90.11	0	0
3rd	10028	2.7	27076	33.42	90.25	0	0
4th	10028	2.7	27076	33.42	90.25	0	0
5th	9973	2.7	26927	33.24	89.75	0	0
Total	**50069**		**135187**	**33.42 (Max.)**	**90.25 (Max.)**	**0**	**0**

Land Use

SL	Pattern	Existing Land Use (Ha)	At the end of approved modified scheme period (in Ha)	At Ultimate Stage (in Ha)
1	Quarry	0.80	0.890	0.930 (total excavation 0.930 ha. Are shall be left as water reservoir for rain water harvesting)
2	Waste Dump	Nil	Nil	Nil
3	Crusher	0.040	0.040	Nil (Comes under quarry)
4	Main Road	Nil (Comes under quarry)	Nil (Comes under quarry)	Nil (Comes under quarry)

5	Plantation (Green belt)	Nil	0.688 (Within Safety zone)	0.688 (Within Safety zone)
	TOTAL	0.930	1.618	1.618

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.688 Ha	1100
2	Along Approach Road		0.500 km	332
TOTAL				1432 Trees

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

Budget for Environmental Management

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1000 per Tanker)	--	3,00,000
2	Plantation 800 X 332 = Rs 2,65,600 (Gabion Plantation along approach road) 400 X 1100+ = Rs.4,40,000 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	7,05,600	70,560
3	Fencing	100,000	
4	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs. (3 point)-Rs.27,270 • Ground Water (2 point) -Rs.12,420 • Noise 24 hrs (3 point) -Rs.21,000 • Soil (3 point) -Rs.40,920 **Total -Rs. 1,01,610** **(Per Season)** **At least two seasons in a Year -Rs. 1,01,610 x 2 = Rs. 2,03,220** **Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022**	--	2,03,220

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
Total		8,05,600	5,73,780

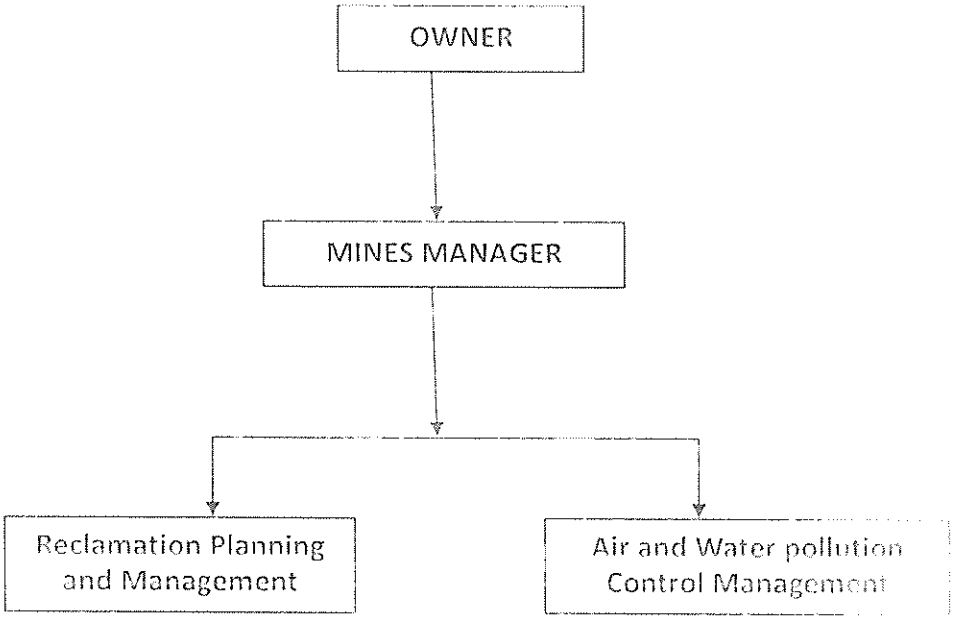
Environment Monitoring Programme:

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 stations	6 Monthly

Solid Waste Management

0 cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Organization Structure



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 generates 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 the 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 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, injuryor 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	Very Unlikely	Minor	20

		to Dust			
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 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 Dunduria Stone Mine of Shri Naveen Kumar Singh, Village : Dunduria, Circle : Gumla, Distt. : Gumla, Jharkhand (1.618 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. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.

II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"Ek Ped Ma Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

****

21. **Chatnia Stone Mine of M/s Mahavir Infra Enterprises (Partners : Shri Brajkishore Tiwari & Shri Bhaskar Bhushan), Village : Chatnia, Block & Thana : Chatra, Distt. : Chatra, Jharkhand (1.38 Ha).**

(Proposal no.: SIA/JH/MIN/ 530090 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 26.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for:Proposed Capacity- 24,090cum/annum or 65,043TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Chatnia Stone Mine Project Type – Stone Mine	
2	Lessee:	:	M/s Mahavir Infra Enterprises Shri Brajkishore Tiwari & Partner	
3	Lessee Address	:	Village – Chatnia, Block Office – Chatra, Thana – Chatra (270), District- Chatra, Jharkhand	
4	Lease Area	:	1.38Ha.	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital: 73.54 Lakhs	Recurring: 8.85 Lakhs per year
7	EMP Budget	:	Capital: 6.20Lakhs	Recurring: 5.35Lakhs per year
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 1,68,344 cum	Tonnes: 4,54,528.8 Tonnes
10	Mine Life	:	12 years.	
11	Man power	:	18Person	
12	Water Requirement	:	5.49KLD (Drinking: 0.27 KLD, Dust Suppression: 1.96 KLD, Plantation: 3.26 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	20 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Amanat River – 47 km – S-W direction (arial distance).	
17	Nearest	:	ChatniaVillage at 0.5km	

	Habitation		
18	Nearest Rail Station	:	Kathautia Railway Station, at 29 km in East direction (arial distance).
19	Nearest Air Port	:	Birsa Munda Airport, Ranchi at 107 km SDirection.
20	Nearest Forest	:	DFO Forest Division letter no.- 318 Dated: 15/02/2024 certified that the distance of reserved / protected forest is more than 380 m from proposed project site.
21	Road & Highways	:	NH-522 at 1.6 km (aerial distance) S direction

CO-ORDINATES

Point	Latitude	Longitude
1	24° 12' 29.633" N	084° 56' 01.771" E
2	24° 12' 30.247" N	084° 56' 01.820" E
3	24° 12' 30.446" N	084° 56' 01.865" E
4	24° 12' 31.046" N	084° 56' 01.940" E
5	24° 12' 31.322" N	084° 56' 02.026" E
6	24° 12' 31.731" N	084° 56' 02.105" E
7	24° 12' 31.961" N	084° 56' 02.202" E
8	24° 12' 32.078" N	084° 56' 02.204" E
9	24° 12' 32.080" N	084° 56' 02.290" E
10	24° 12' 31.964" N	084° 56' 02.516" E
11	24° 12' 31.796" N	084° 56' 02.940" E
12	24° 12' 31.723" N	084° 56' 03.093" E
13	24° 12' 31.679" N	084° 56' 03.218" E
14	24° 12' 31.661" N	084° 56' 03.360" E
15	24° 12' 31.806" N	084° 56' 03.509" E
16	24° 12' 31.552" N	084° 56' 03.623" E
17	24° 12' 31.437" N	084° 56' 04.106" E
18	24° 12' 31.345" N	084° 56' 04.297" E
19	24° 12' 31.263" N	084° 56' 04.800" E
20	24° 12' 31.207" N	084° 56' 05.181" E
21	24° 12' 31.122" N	084° 56' 05.612" E
22	24° 12' 31.007" N	084° 56' 05.960" E
23	24° 12' 30.773" N	084° 56' 06.077" E
24	24° 12' 30.613" N	084° 56' 06.042" E
25	24° 12' 30.638" N	084° 56' 05.800" E
26	24° 12' 30.374" N	084° 56' 05.666" E
27	24° 12' 29.949" N	084° 56' 05.546" E
28	24° 12' 29.458" N	084° 56' 05.365" E
29	24° 12' 29.145" N	084° 56' 05.447" E
30	24° 12' 28.883" N	084° 56' 05.477" E
31	24° 12' 28.696" N	084° 56' 05.462" E

32	24° 12' 28.477" N	084° 56' 05.338" E
33	24° 12' 28.112" N	084° 56' 05.265" E
34	24° 12' 27.874" N	084° 56' 05.215" E
35	24° 12' 27.541" N	084° 56' 05.0795" E
36	24° 12' 27.232" N	084° 56' 05.097" E
37	24° 12' 27.035" N	084° 56' 04.908" E
38	24° 12' 26.882" N	084° 56' 04.740" E
39	24° 12' 26.887" N	084° 56' 04.660" E
40	24° 12' 26.985" N	084° 56' 04.381" E
41	24° 12' 27.035" N	084° 56' 04.151" E
42	24° 12' 27.097" N	084° 56' 03.554" E
43	24° 12' 26.966" N	084° 56' 03.387" E
44	24° 12' 27.058" N	084° 56' 02.981" E
45	24° 12' 27.088" N	084° 56' 02.578" E
46	24° 12' 27.164" N	084° 56' 02.056" E
47	24° 12' 27.371" N	084° 56' 02.127" E
48	24° 12' 27.984" N	084° 56' 01.969" E
49	24° 12' 28.326" N	084° 56' 02.186" E
50	24° 12' 28.567" N	084° 56' 01.578" E
51	24° 12' 29.265" N	084° 56' 01.675" E
52	24° 12' 29.249" N	084° 56' 02.286" E
53	24° 12' 29.594" N	084° 56' 02.311" E
54	24° 12' 29.633" N	084° 56' 02.182" E
55	24° 12' 29.571" N	084° 56' 02.138" E

LAND DETAILS

Khata no.	Plot no.
04, 05 & 06	75, 76 & 34

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Chatra vide letter no. 881/Khanan, dated 14.08.2024.
2	CO	:	The CO, Chatra vide letter no. 1167, dated 22.12.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Chatra vide memo no. 303, dated 05.03.2025 certified that 02 other mining lease area (3.58 Acre & 1.72 Acre) and 01 LoI (2.74 Acre) exists within 500 meters radius from proposed project site and total area is 11.45 Acre.

4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 449, dated 13.03.2024 certified that the proposed project site is outside Eco Sensitive Zone of Lawalong Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Chatra South Forest Division vide letter no. 318, dated 16.02.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is lies within the potential village of approved DSR of Chatra District (Sl. no. 9, Page no. 69).
7	Gram Sabha	:	Gram Sabha conducted on 12.03.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Chatra vide Letter No. 1060/Khanan, dated 26.09.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	0.81Ha. (During plan period)	Life of Mine – 12year
3	Waste Generation	:	30,844cum. O.B (During plan period)	
4	Stripping Ratio	:	1:2.27 or 0.44	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Elevation of Mine	:	452 to 447 m AMSL	
8	Ground Level Elevation	:	452 m AMSL	
9	Ultimate Working Depth	:	33 m	
10	Water Table	:	(During pre-monsoon 105m AMSL) (During post-monsoon 116 m AMSL)	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	16 kg Slurry explosives/day	
13	Diesel/Fuel requirement	:	HSD – 232liters / day (69.60 KL/year)	

Production Details

SUMMARY OF YEARWISE OF PRODUCTION					
Years	Production In Cum/Year	Production In Cum/Day	O.B in Cum/Year	Production In Tons/Year	Prod. In Tons. /Day
1st	8415	28	16720	22721	76
2nd	13585	45	0	36680	122
3rd	24090	80	14124	65043	217
4th	11770	39	0	31779	106
5th	12210	41	0	32967	110
Total	**70070**	**80 (max)**	**30844**	**189189**	**217 (max)**

LAND USE

Existing, Proposed & Conceptual Land Use

SL	Pattern	Existing Land Use (Ha)	Proposed Land Use (Ha)	Conceptual Land Use (Ha)	Area to be converted in the conceptual period.
1	Mining Activities	0.00	0.810	0.810	Water body
2	Dumping	0.00	0.032	0.032	Greenbelt
3	Mining Road	0.00	0.053	0.053	Water body
4	Garland drain	0.00	0.024	0.024	--
5	Settling Tank	0.00	0.004	0.004	--
6	Offices/ Store etc.	0.00	0.004	0.004	Greenbelt
7	Safety Zone	0.00	0.389	0.389	Greenbelt
8	Unutilized	1.38	0.065	0.065	Greenbelt
	TOTAL	**1.38**	**1.38**	**1.38**	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.389 Ha	622
2	Along Approach Road		0.350km	464
TOTAL				**1,086**

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

- EMP BUDGET

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 900 per Tanker)	----	2,70,000
2	Plantation 464 X 800 = Rs 3,71,200 (Gabion Plantation along approach road) 622 X 400 = 2,48,800 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	6,20,000	62,000
3	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs (3 point) - Rs.27,270 • Ground Water (2 point) - Rs.12,420 • Noise 24 hrs (3 point) - Rs.21,000 • Soil (3 point) -Rs.40,920 Total -Rs. 1,01,610 (Per Season) At least two seasons in a Year -Rs.1,01,610 x2 = Rs. 2,03,220 Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022	----	2,03,220
Total		**6,20,000**	**5,35,220**

Environment Monitoring Programme

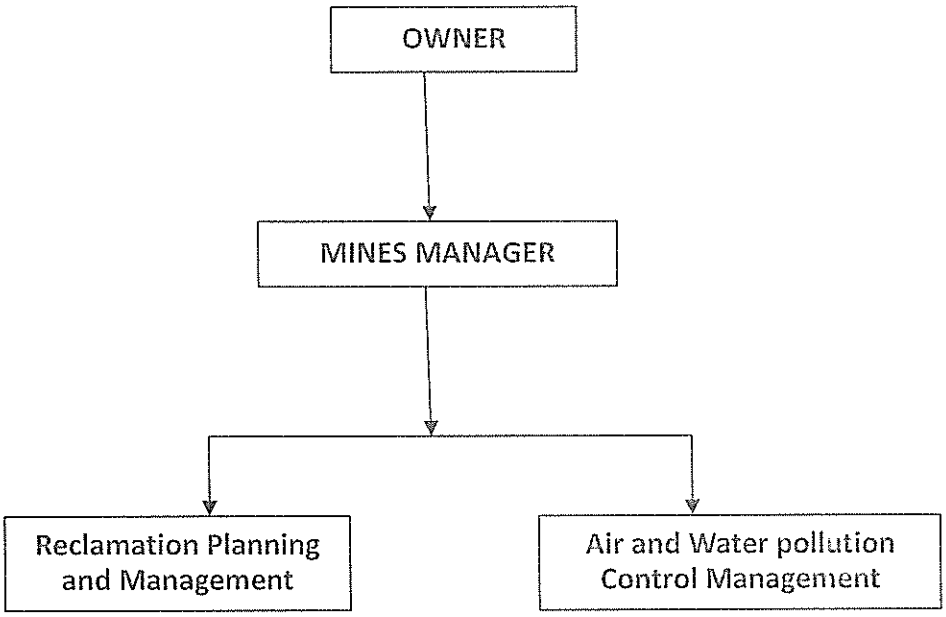
SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	One Day Monitoring (within 6 months)
2.	Water	2 stations	One Day Monitoring (within 6

			months)
3.	Soil	3 stations	One Day Monitoring (within 6 months)
4.	Noise	3 stations	One Day Monitoring (within 6 months)

Solid Waste Management

30,844cum. O.B shall be generated during the plan period which shall be backfilled within the exhausted quarry.

Organization Structure



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 generates 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 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 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, injuryor system damage

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone mining operation

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

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

Preventive Measures:

Face Stability

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

Control Measures

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

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.

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

Handling of Explosives

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

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

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

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

Health Hazards

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

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

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

Accident at Site

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

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

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

Transportation

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

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.

- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling 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 Chatnia Stone Mine of M/s Mahavir Infra Enterprises (Partners : Shri Brajkishore Tiwari & Shri Bhaskar Bhushan), Village : Chatnia, Block & Thana : Chatra, Distt. : Chatra, Jharkhand (1.38 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). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

****

22. Chatnia Stone Mine of M/s Mahavir Infra Enterprises (Partners : Shri Brajkishore Tiwari & Shri Bhaskar Bhushan), Village : Chatnia, Block & Thana : Chatra, Distt. : Chatra, Jharkhand (1.11 Ha).

(Proposal no.: SIA/JH/MIN/ 530153 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 26.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for:Proposed Capacity- 9,512 cum/annum or 25,682TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Chatnia Stone Mine Project Type – Stone Mine	
2	Lessee:	:	M/s Mahavir Infra Enterprises Shri Brajkishore Tiwari & Partner	
3	Lessee Address	:	Village – Chatnia, Block Office – Chatra, Thana – Chatra (270), District- Chatra, Jharkhand	
4	Lease Area	:	1.11 Ha.	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital: 72.99 Lakhs	Recurring: 8.69 Lakhs per year
7	EMP Budget	:	Capital: 6.72Lakhs	Recurring: 5.40Lakhs per year
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 54,450 cum	Tonnes: 1,47,015 Tonnes
10	Mine Life	:	10 years.	
11	Man power	:	20Person	
12	Water Requirement	:	5.86KLD (Drinking: 0.30 KLD, Dust Suppression: 2.12 KLD, Plantation: 3.44 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	20 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Amanat River – 47 km – S-W direction (arial distance).	

17	Nearest Habitation	:	ChatniaVillage at 0.5km
18	Nearest Rail Station	:	Kathautia Railway Station, at 29 km in East direction (arial distance).
19	Nearest Air Port	:	Birsa Munda Airport, Ranchi at 107 km SDirection.
20	Nearest Forest	:	DFO Forest Division letter no.- 347 Dated: 31/01/2023 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.
21	Road & Highways	:	NH-522 at 1.6 km (aerial distance) S direction

CO-ORDINATES

1	Latitude		From N 24°12'33.944"	To N 24°12'39.128"
2	Longitude		From E 84°56'02.881"	To E 84°56'00.390"

LAND DETAILS

Khata no.	Plot no.
01, 02, 03, 04 & 06	28, 26 (P), 19, 21 (P), 18 (P), 24, 20 & 30 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Chatra vide letter no. 709/Khanan, dated 01.07.2023.
2	CO	:	The CO, Chatra vide letter no. 383, dated 15.04.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Chatra vide memo no. 304, dated 05.03.2025 certified that 02 other mining lease area (3.58 Acre & 1.72 Acre) and 01 LoI (3.41 Acre) exists within 500 meters radius from proposed project site and total area is 11.45 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 842, dated 26.04.2023 certified that the proposed project site is outside Eco Sensitive Zone of Lawalong Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Chatra South Forest Division vide letter no. 347, dated 31.01.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.

6	DSR	:	This project is lies within the potential village of approved DSR of Chatra District (Sl. no. 02, Page no. 66).
7	Gram Sabha	:	Gram Sabha conducted on 04.05.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Chatra vide Letter No. 1065/Khanan, dated 26.09.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	0.405Ha. (During plan period)	Life of Mine – 10year
3	Waste Generation	:	5,779cum. O.B (During plan period)	
4	Stripping Ratio	:	1:5.16 or 0.19	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Elevation of Mine	:	453 to 450 m AMSL	
8	Ground Level Elevation	:	453 m AMSL	
9	Ultimate Working Depth	:	26 m	
10	Water Table	:	(During pre-monsoon 105m AMSL) (During post-monsoon 116 m AMSL)	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	8 kg Slurry explosives/day	
13	Diesel/Fuel requirement	:	HSD – 232liters / day (69.60 KL/year)	

Production Details

SUMMARY OF YEARWISE OF PRODUCTION					
Years	Production In Cum/Year	Production In Cum/Day	O.B in Cum/Year	Production In Tons/Year	Prod. In Tons. /Day
1st	5642	19	2294	15233	51
2nd	9512	32	3485	25682	86

3rd	3751	13	0.0	10128	34
4th	6232	21	0.0	16826	56
5th	4655	16	0.0	12569	42
Total	29792	32 Max.	5779	80438	86 Max.

LAND USE

Existing, Proposed & Conceptual Land Use

Sl. No.	Pattern	Existing Land Use (Ha)	Proposed Land Use (Ha)	Conceptual Land Use (Ha)	Area to be converted in the conceptual period.
1	Mining Activities	0.00	0.405	0.616	Water body
2	Dumping	0.00	0.032	0.00	Greenbelt
3	Mining Road	0.00	0.008	0.008	Water body
4	Garland drain	0.00	0.024	0.024	--
5	Settling Tank	0.00	0.012	0.012	--
6	Safety Zone	0.00	0.385	0.385	Greenbelt
7	Unutilized	1.11	0.243	0.065	Greenbelt
	TOTAL	1.11	1.11	1.11	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.385 Ha	616
2	Along Approach Road		0.399km	532
TOTAL				1,148

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

- EMP BUDGET

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 900 per Tanker)	----	2,70,000
2	Plantation 532 X 800 = Rs 4,25,600 (Gabion Plantation along approach road) 616 X 400 = 2,46,400 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	6,72,000	67,200
3	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs (3 point) - Rs.27,270 • Ground Water (2 point) - Rs.12,420 • Noise 24 hrs (3 point) - Rs.21,000 • Soil (3 point) -Rs.40,920 Total -Rs. 1,01,610 (Per Season) At least two seasons in a Year -Rs.1,01,610 x2 = Rs. 2,03,220 Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022	----	2,03,220
Total		**6,72,000**	**5,40,420**

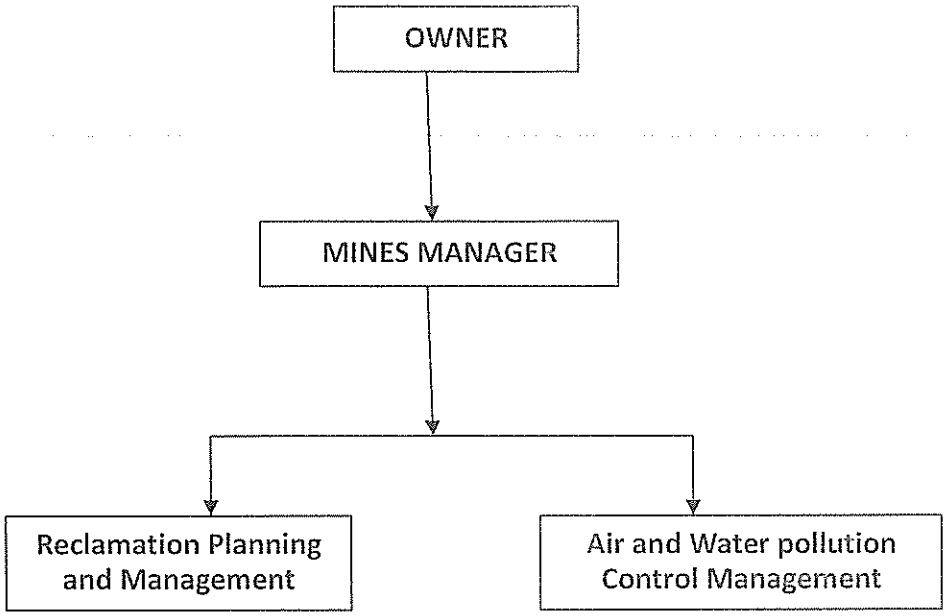
Environment Monitoring Programme

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	One Day Monitoring (within 6 months)
2.	Water	2 stations	One Day Monitoring (within 6 months)
3.	Soil	3 stations	One Day Monitoring (within 6 months)
4.	Noise	3 stations	One Day Monitoring (within 6 months)

Solid Waste Management

5,779 cum. O.B shall be generated during the plan period which shall be backfilled within the exhausted quarry.

Organization Structure



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 generates 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 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 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, injuryor system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1	5	4	3	2	1

(Catastrophic)					
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**"

<u>Preventive Measures:</u>

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

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- Mine road shall be made smooth regularly with a road roller.
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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.

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II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests .

Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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23. Demba Stone Mine of M/s Minakshi Stone Works (Partner : Shri Aditya Prakash), Village : Demba, P.S. : Jirwabadi, Distt. : Sahibganj, Jharkhand (4.04 Ha).

(Proposal no.: SIA/JH/MIN/ 530302 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

Application for Environmental Clearance (re-appraisal of Environment Clearance issued by DEIAA, Sahibganj).

The project has been granted EC by DEIAA, Sahibganj vide letter no. EC/DEIAA/2017-18/231, dated 06.09.2017.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Sahibganj which has been taken up for consideration on 26.03.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$. All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 1275/M, dated 30.11.2024 by DMO, Sahibganj is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide ref. no. 2002, dated 26.09.2023.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.

The self certified compliance report has been submitted and also presented before the Committee.

EC Application for: Proposed Capacity- 242704 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Demba Stone Mine	
2	Lessee:	:	Shri Aditya Prakash	
3	Lessee Address	:	AT – Mahadevganj, P.S.- Mirzachowki, District- Sahibganj, Jharkhand	
4	Lease Area	:	4.04 ha.	10.00 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 131.535 Lakhs	
7	EMP Budget	:	Capital: Rs. 4.752 Lakhs	Recurring: 5.807 Lakhs / year
8	New or Expansion	:	DEIAA to SEIAA (re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	2269863.15tons	
10	Mine Life	:	Upto the lease period i.e. 29.11.2017 to 28.11.2027.	
11	Man power	:	33	
12	Water Requirement	:	6.041 KLD (Drinking: 0.495 KLD, Dust Suppression: 1.52 KLD, Plantation: 4.026 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	20 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	River Ganges – 9.7 Km in NW direction.	
17	Nearest Habitation	:	Sahebganj - 6.5 km	
18	Nearest Railway Station	:	Karamtola Railway Station is at aerial distance of 4 km	
19	Nearest Air Port	:	Birsa Munda Airport is near about 300 km	
20	Nearest Forest	:	More than 250m, as per DFO Territorial, Sahibganj, vide letter no.: 666, dated 28/03/2017	

21	Road & Highways	:	The Mirzachouki-Sahebganj road (NH-33) is passing at a distance of 2.20 km on North side

CO-ORDINATES

Geo-Coordinates of all corner points of Demarcated Block Boundary
(GPS Co-ordinates)

Latitude	Longitude
25° 13'42.61" N	87°34'57.22" E
To	
25°13'52.11"N	87°35'04.46" E

LAND DETAILS

Khata no.	Plot no.
22	57 (P)
37	59
21	62 (P) & 65
30	63 & 66
11	64

STATUTORY CLEARANCES

1	LOI / Lease docs	:	i. The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 1497/M, dated 07.10.2017. ii. Lease deed 29.11.2017 to 28.11.2027.
2	CO	:	The CO, Mandro vide memo no. 432/Ra., dated 22.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster & Grid certificate	:	DMO, Sahibganj vide memo no. 459/M, dated 17.03.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site and also certified that said project falls under grid no. 3 and production is within the over all permissible production limit.
4	DFO Wild Life	:	DFO –cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2130, dated 30.10.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide memo no.

			666, dated 28.03.2017 certified that the distance of forest land is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Sahibganj District (Sl. No. 16, Page no. 130).
7	Gram Sabha	:	Gram Sabha conducted on 29.04.2017.
8	Scheme / Mine Plan Approval	:	i. Mine plan approved by DMO, Sahibganj vide memo no. 346/M, dated 31.07.2017. ii. Mining scheme approved by DMO, Sahibganj vide letter no. 1165/M, dated 27.10.2023.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Sahibganj vide letter no. EC/DEIAA/2017-18/231, dated 06.09.2017.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide ref. no. 2002, dated 26.09.2023.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide ref. no. JSPCB/HO/RNC/CTE-2037668/2018/556, dated 24.05.2018.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/HO/RNC/CTO-16609921/2023/1395, dated 08.08.2023.
13	Production Report	:	Production report issued by DMO, Sahibganj vide memo no. 1275/M, dated 30.11.2024.
14	Qualified Person	:	Shri Tapan Kumar Chakravarty through e-mail dated 26.03.2025 affirmed that the mining scheme has been prepared by him.

Working Details

1	Mining Method	:	Mechanized Method	
2	Quarry Area	:	3.360 Ha	Life of Mine – Upto the lease period i.e. 29.11.2017 to 28.11.2027.
3	Waste Generation	:	0 cum	
4	Stripping Ratio	:	01:00	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m,	
7	Elevation of Mine	:	663 m AMSL	
8	Ground Level Elevation	:	660 m AMSL	

9	Ultimate Working Depth	:	33 m
10	Water Table	:	Post Monsoon – 620 m AMSL Pre Monsoon – 617 m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	30 km/day slurry explosives
13	Diesel/Fuel requirement	:	HSD –217.86 liters / day (65.35 KL/year)

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum
1st	89,373.70	2.7	241309	297.91	804.36	0
2nd	88,757.41	2.7	239645	295.86	798.82	0
3rd	89,890.37	2.7	242704	299.63	809.01	0
4th	89,493.70	2.7	241633	298.31	805.44	1751
5th	88,579.26	2.7	239164	295.26	797.21	1109
Total	**4,46,094.44**	**2.7**	**1204455**	**299.63 Max**	**367.82 Max**	**2860**

Land Use

SL	Pattern	Existing Land Use (Ha)	Proposed Land Use (Ha)	Conceptual Land Use (Ha)	Area to be converted in the conceptual period.
1	Quarry	1.296	3.211	3.360	Water body
2	Road	0.003	Comes under quarry	Comes under quarry	
3	Plantation	0.00	0.680	0.680	Plantation
4	Unutilized	2.741	0.149	0.00	-
	TOTAL	4.04	4.04	4.04	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.68 Ha	1088
2	Along Approach Road		0.380 km	254

TOTAL	1342 Trees

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

Budget for Environmental Management

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1000 per Tanker)	--	3,00,000
2	Plantation 254 X 800 = Rs 2,03,200 (Gabion Plantation along approach road) 1088 X 350 = 3,80,800 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	5,84,000	50,000
4	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs. (3 point)-Rs.27,270 • Ground Water (2 point) -Rs.12,420 • Noise 24 hrs (3 point) -Rs.21,000 • Soil (3 point) -Rs.40,920 **Total -Rs. 1,01,610** **(Per Season)** **At least two seasons in a Year -Rs. 1,01,610 x 2 = Rs. 2,03,220** **Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022**	--	2,03,220
Total		5,84,000	5,83,220

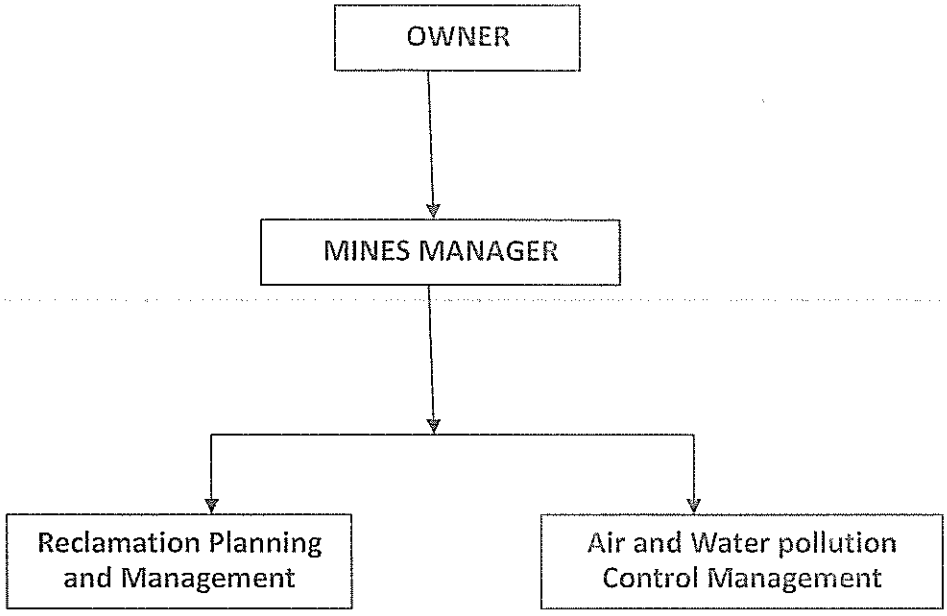
Environment Monitoring Programme:

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 stations	6 Monthly

Solid Waste Management

0 cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Organization Structure



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 generates 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 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 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, injuryor system damage

Risk Assessment Chart (Qualitative Method)

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

C4 (Minor)	*20*	*16*	12	8	4
C5 (Insignificant)	*25*	*20*	*15*	10	5

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone mining operation

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

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

Preventive Measures:

Face Stability

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

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

- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

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

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

Falls from the edge of a bench

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

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

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

Control Measures

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

Dust generation during drilling

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

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

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

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

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

Undertaking submitted affirming:

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

g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling 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 Demba Stone Mine of M/s Minakshi Stone Works (Partner : Shri Aditya Prakash), Village : Demba, P.S. : Jirwabadi, Distt. : Sahibganj, Jharkhand (4.04 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. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.
II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*Ek Ped Ma Ke Naam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.
III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be

done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

****

24. **Bada Bararo Stone Mine of M/s Varun Singh Sisodia Pvt. Ltd. (Partners : Shri Varun Singh & Mrs. Yasomati Kumari), Mouza : Bada Bararo, Panchayat : Bada Amarpur, Block : Boarijor, P.O. + P.S. : Raja Bhita (33), Distt. : Godda, Jharkhand (2.55 Ha).**

(Proposal No. : SIA/JH/MIN/ 527672/2025).

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 26.03.2025.

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

Application for Environmental Clearance (EC) after ToR.

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 107th meeting held on 16 - 20.08.2023 and SEIAA, Jharkhand has approved the ToRs in 108th meeting held on 27th & 28th August, 2023. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2023-24/2899/2023/250, dated 01.09.2023. The final EIA / EMP submitted by PP to SEAC on 21.03.2025.

EC Application for: Proposed Capacity- 80247 cum/annum or 240740 TPA.

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Bada Bararo Stone Mine (Area- 6.31 Acres or 2.55Ha)
2	Lessee:	:	M/s Varun Singh Sisodia Pvt Ltd., (Director: 1. Sri Varun Singh, 2. Mrs. Yasomati Kumari)

3	Lease Address	:	At Mauza: Bada Bararo, Panchayat: Bada Amarpur, P.O. & P.S.: Raja Bhita (33), Distt.: Godda, State: Jharkhand	
4	Lease Area	:	2.55 Ha	Acres- 6.31 Acre
5	Type of Land	:	Non- Forest (Raiyati Barren Land)	
6	Project Cost	:	Rs. 91.85 Lakhs	
7	EMP Budget	:	Capital: Rs. 12.445 Lakhs	Recurring: Rs. 1.54 Lakhs/year
8	New or Expansion	:	New	
9	Mineable Reserves	:	698805.9tonnes, 258817 Cum	
10	Mine Life	:	4.66 years ~ say 5 years	
11	Man power	:	36	
12	Water Requirement	:	17.95 KLD	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	NIL	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Sundar Dam – 2.30 Km – SW(No coastal zone, biospheres, mountain, project site area)	
17	Nearest Habitation	:	Dumaria Village, approx.880 meters towards NW direction.	
18	Nearest Railway Station	:	Godda Railway Station 27 Km in SW direction.	
19	Nearest Air Port	:	Deoghar Airport - 92 Km in SW direction	
20	Nearest Forest	:	Protected Forest Approx. 4.32 km. in NE direction of mine site. Protected Forest Approx. 1.1 km. in North direction of mine site. Protected Forest Approx. 3.62 km. in NW direction of mine site. Reserved Forest Approx. 3.27 km. in West direction of mine site. Protected Forest Approx. 1.25 km. in SE direction of mine site. Protected Forest Approx. 0.492 km. in South direction of mine site.	
21	Road & Highways	:	NH-133A, approx. 10.51 km in NNE direction	

CO-ORDINATES

Corner Point	Latitude	Longitude
1	24°57'42.66" N	87°25'29.46" E
2	24°57'42.75" N	87°25'29.88" E
3	24°57'35.08" N	87°25'32.62" E
4	24°57'32.18" N	87°25'30.25" E
5	24°57'34.73" N	87°25'29.99" E
6	24°57'32.11" N	87°25'29.02" E

7	24°57'31.58" N	87°25'28.76" E
8	24°57'32.05" N	87°25'26.92" E
9	24°57'35.69" N	87°25'28.94" E
10	24°57'36.29" N	87°25'25.73" E
11	24°57'37.75" N	87°25'28.29" E

LAND DETAILS :

Khata No.	Plot No.
24	341 & 350

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Godda vide letter no. 2754, dated 16.10.2019.
2	CO	:	The CO, Boarijore vide letter no. 530/Ra, dated 28.09.2019 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Godda vide memo no. 892/M, dated 10.07.2023 certified that 01 other mining lease area (19.83 acre) exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahebganj) vide letter no. 1406, dated 28.07.2023 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. 1862, dated 03.10.2019 certified that the distance of notified forest is more than 250 m from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Godda district in Page No. 55 at Sl. No. 06).
7	Gram Sabha	:	Gram Sabha conducted on dated 25.08.2019.
8	Mine Plan Approval	:	Mine plan approved by Deputy Director Mines, Santhal Pragana Circle, Dumka vide Memo No. 69/DDM, dated 19.02.2020.
9	Public Hearing	:	Public Hearing conducted on 18.09.2024.

10	Baseline Monitoring Period	:	December, 2023 to February, 2024.
11	Qualified Person	:	Shri A.K. Sinha through letter dated 26.03.2025 affirmed that the mining plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Mining method	
2	Quarry Area	:	2.55 Ha / 6.31 Acre	Life of Mine – 5 Years
3	Waste Generation	:	13,486.2 Cum. during the current planed period	
4	Stripping Ratio	:	1:0.05	
5	Working Days	:	300	
6	Benches: size & No	:	3m x 3m. No. of benches-9	
7	Elevation of Mine	:	207-205 AMSL	
8	Ground Level Elevation	:	205 AMSL	
9	Ultimate Working Depth	:	181 AMSL	
10	Water Table	:	121 MSL	
11	Topography of Mine	:	Gently Sloping Area	
12	Explosive Requirement	:	78 Kg Slurry explosives/day	
13	Diesel/Fuel requirement	:	HSD – 1125 liters/day (337.5 KL/year)	

Production Details

Years	Production In Cum/Year	O.B Production in cum. /Year	Production In Tons/Year	Bench RL in meters
1st	55446	13486	149704.2	A-B: 150-148 (O.B.) A-B : 148-145 (Stone) C-D: 150 – 148 (O.B) 148 – 145 (Stone) 145 – 142 (Stone)
2nd	54894	0	148213.8	A-B : 145 -142 (Stone) A-B: 142 -139 (Stone) C-D: 145- 142 (Stone) C-D : 142 – 139 (Stone)
3rd	53490	0	144423	A-B : 139 -136 (Stone) A-B: 136 -133 (Stone) C-D: 139- 136(Stone) C-D : 136 – 133 (Stone)
4th	39450	0	106515	A-B : 133 -130 (Stone) A-B: 130 -127 (Stone) C-D: 133- 130(Stone) C-D : 130 – 127 (Stone)
5th	27133	0	73272.6	A-B : 127 -124(Stone) A-B: 124 -121 (Stone)

				C-D: 127- 124(Stone) C-D : 124– 121 (Stone)
Total	230418	13486	622128.6	Depth – 29 m

Land Use

Existing Land Use pattern

Category	Area in Ha.
Mining Acitivites	0.00
Dumping	0.00
Mining Road	0.00
Garland drain	0.00
Green belt/Safety Zone	0.00
Utilized	0.00
Unutilized	2.55
Total	**2.55**

Land Use Pattern during Proposed Plan Period of five Years

Category	Area in Ha.
Mining Activities	1.66
Office/Store	0.04
Dumping	0.04
Mining Road	0.04
Garland drain	0.02
Green belt/Safety Zone	0.75
Utilized	2.55
Unutilized	0.00
Total	**2.55**

Land Use Pattern after Life of the Mine:

Category	Area in Ha.	Land Usage at Conceptual Stage
Mining Activities + Mining Road	1.70	Water Body
Garland drain	0.02	---
Green belt/Safety Zone + Office + Dump	0.83	Plantation
Utilized	2.55	
Unutilized	0.00	
Total	**2.55**	

Public Hearing:

Public hearing was successfully executed on date 18.09.2024.

S. No.	Name and Address	Issues raised by public	Reply of Applicant	Details of work to be done	Time frame	Budget (In Rs.)
1	Sri Ramlal Kisku Village – Bara Bararo	Give employment to local villagers and do water sprinkling for dust suppression. Give football and jersey to us. Medical facilities to villagers along with facility of ambulance.	Employment will be provided as per qualification and requirement. Regular water sprinkling will be done for dust suppression. Football and jersey will be provided to young players. Vehicle in the mines will be used for medical emergencies	• Water tanker for sprinkling – budget already considered under project cost & EMP. • Four footballs and thirty jerseys for players. • Vehicle at mines for medical facility - budget already considered under project cost	Along with start of mines within 12 months.	1,08,000.00
2	Sri Manjhi Kisku Village – Bara Bararo	Give employment to local villagers and also do water sprinkling for dust suppression. Arrange for Medical facilities.	Employment will be provided as per qualification and requirement. Arrangement for medical facilities will be made.	• Arrangement for medical camp and facilities – 5 Nos.	Along with start of mines within 18 months.	1,25,000.00
3	Sri Marang Hansda Village – Bara Bararo	Give employment to local villagers. Mines owner should help the local villagers during tough times and need. Financial help during Sohray and other festivals for fooding etc.	Employment will be provided as per qualification and requirement. Help will be given under CSR to local villagers during tough times and need. Community functions and fooding will be arranged during Sohray and other festivals	• Financial provisions for Community functions and fooding during Sohray and other festivals	Along with start of mines within 12 months.	60,000.00
4	Sri Suleman Paharia Village – Bara Bararo	Mines owner should help the local villagers during tough times and need. Give employment to local villagers also.	Help will be given under CSR to local villagers during tough times and need.	• Financial provisions for help to local villagers.	Along with start of mines.	50,000.00

5	Smt. Marangmay Murmu Village – Bara Bararo	Give employment to local villagers. Arrange for Education facilities.	Employment will be provided as per qualification and requirement. For education distribution of books, copy and pen will be done from time to time	• Distribution of books, copy and pen.	Along with start of mines.	1,00,000.00
6	Smt. Sita Tuda Village – Bara Bararo	Give employment to other villagers also apart from raiyats.	Employment will be provided as per qualification and requirement.	• Employment to locals.	Along with start of mines.	-
7	Sri Vichomaso Paharia Village – Bara Bararo	Measurement of Mines land before start of work, so that mining is done only on the land provided by the land owner	Measurement of Mines land will be done before start of work and mining done on specified land only.	• Measurement of Mines land before start of work.	Along with start of mines.	-
8	Smt. Maramai Soren Village – Bara Bararo	Heavy blasting should be done as per norms. Water sprinkling should be done for dust suppression.	Heavy blasting will be done as per norms. Water sprinkling will be done for dust suppression from mining and transportation activities.	• Arrangement for blasting as per norms and regular water sprinkling.	Along with start of mines.	Already considered in project and EMP cost.
9	Smt. Maramai Tudu Village – Bara Bararo	Employment and livelihood should be given to old persons, widows also along with young people.	Employment will be provided as per qualification and requirement to old people and widows also.	• Employment to locals o,d people and widows.	Along with start of mines.	-
10	Smt. Marangmay Murmu Village – Bara Bararo	There is shortage education among villagers, provide help in Education. Maintenance of handpumps for drinking water should be done. Help should be provided during occasion of marriage.	For education distribution of books, copy and pen will be done from time to time. Maintenance of handpumps for drinking water will be done. Help will be provided during occasion of marriage.	• Maintenance of handpumps for drinking water.	Along with start of mines within 12 months.	75,000.00
					Total Budget envisaged	Rs. 5,18,000.00

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Green Belt & Other reclaimed area	:	0.83 ha.	2075
2	Haul/Approach Road	:	0.62 Km.	414 trees both side approach road

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

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Water sprinkling& Dust Suppression	3.465	0.90
2	Green belt development	4.980	0.36
3	Garland drain & settling	2.420	0.28
4	Toe wall around the dump	1.580	
	Sub -Total	12.445	1.54
	Budget for CER/Public Hearing compliance	5.180	-
TOTAL		**17.625**	**1.54**

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	8 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	1 Stations	6 Monthly
4	Ground Water	8 Stations	6 Monthly
5	Noise	8 Stations	6 Monthly

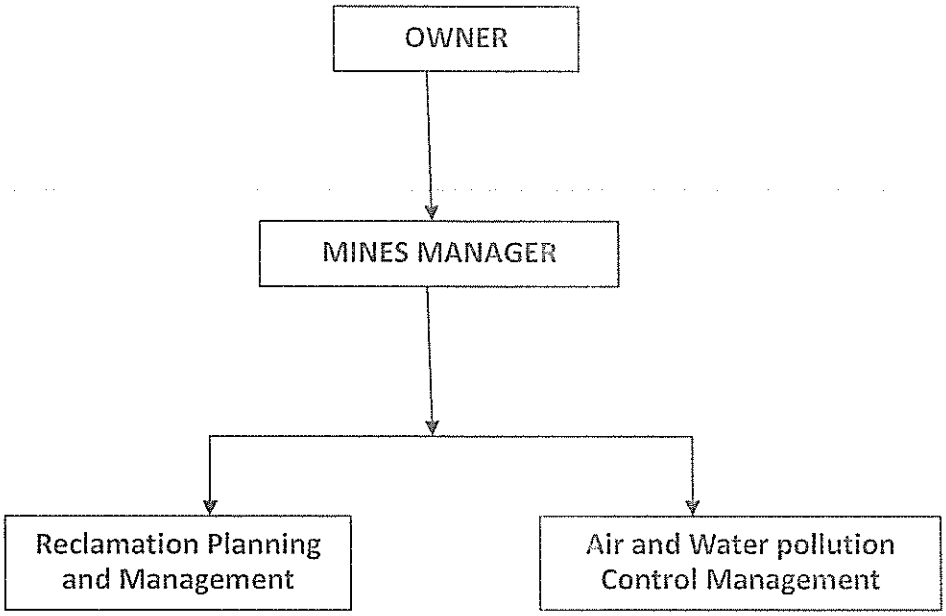
Solid Waste Management

Removal of 13486 cum OB Waste shall be generated during this plan period.

Selection of Dump Site: The area is covered with a layer of gritty soil. During quarry development in 1st year OB waste will be removed and this soil & waste will be temporarily dumped at the south- west part of the area with suitable precautions like parapet wall,

garland drain & in 3rd, 4th& 5thyear removed OB waste & existing temporarily dumped soil will be temporarily backfilled within the exhausted quarry.

Organization Structure



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 generates 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 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 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, injuryor system damage

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone mining operation

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

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

Preventive Measures:

Face Stability

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

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

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work

in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

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

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

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

- Proper and safe storage of explosives in approved and Licensed Magazine

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

- Mine road shall be made smooth regularly with a road roller.

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

Undertaking submitted affirming:

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

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Bada Bararo Stone Mine of M/s Varun Singh Sisodia Pvt. Ltd. (Partners : Shri Varun Singh & Mrs. Yasomati Kumari), Mouza : Bada Bararo, Panchayat : Bada Amarpur, Block : Boarijor, P.O. + P.S. : Raja Bhita (33), Distt. : Godda, Jharkhand (2.55 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). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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Day 4 : March 27th, 2025 [Thursday]

Consideration of proposals

1. **Kirokuria Stone Mine of M/s Saraswati Stone Works (Prop. : Shri Dinesh Kumar Yadav), Village : Kirokuria, Thana : Taljhari, Distt. : Sahibganj, Jharkhand (3.73 Ha).**

   (Proposal no.: SIA/JH/MIN/ 513219 /2024)

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

   Application for Environmental Clearance (re-appraisal of Environment Clearance issued by DEIAA, Sahibganj).

   The project has been granted EC by DEIAA, Sahibganj vide letter no. EC/DEIAA/2017-18/259, dated 19.10.2017.

   As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

   This is re-appraisal of the EC issued by DEIAA, Sahibganj which has been taken up for consideration on 27.03.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

   Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ All the data are within the permissible limit.

   Dust suppression is being carried out on regular basis.

   Greenbelt Developed.

   As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

   Production detail as per memo no. 1331/M, dated 07.12.2024 by DMO, Sahibganj is within the permissible limit of EC.

   The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide ref. no. 1935, dated 19.10.2024.

   The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

   i. There is no clarity on the status of execution of compliance and no details have been provided.
   ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

   Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.

The self certified compliance report has been submitted and also presented before the Committee.

EC Application for: Proposed Capacity- 93531 cum/annum or 280593 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Kirokuria Stone Mine	
2	Lessee:	:	M/s Saraswati Stone Works Proprietor – Sri Dinesh Kumar Yadav	
3	Lease Address	:	Mouza - Kirokuria, Thana - Taljhari, District – Sahebganj, State- Jharkhand	
4	Lease Area	:	3.73 ha	Acres- 9.22 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 1.40 cr.	
7	EMP Budget	:	Capital: Rs. 3.85 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New (Re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	2688546 tons	896182 cum
10	Mine Life	:	Upto the lease period i.e. 22.10.2017 to 21.10.2027.	
11	Man power	:	42	
12	Water Requirement	:	8.09 ~ 8.10 KLD (Drinking: 0.42 KLD, Dust Suppression: 3.84 KLD, Plantation: 3.83 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Ganga River, Approx. 2.46 km towards NNW direction of mine site.	
17	Nearest Habitation	:	Kirokuria village, Approx.0.45 km in SSE direction	
18	Nearest Railway Station	:	Sakrigali Railway station, approx. 1.56 km towards NNW direction.	
19	Nearest Air Port	:	Deoghar Airport, Jharkhand approx. 133.96 km towards SW direction.	
20	Nearest Forest	:	Protected Forest , Approx. 2.04 km towards SSW direction of mine site.	
21	Road & Highways	:	NH-33, Approx. 1.44 km. in East direction.	

CO-ORDINATES

1	Latitude	:	From 25°13'37.78" N	To 25°13'45.46" N
2	Longitude	:	From 87°42'45.93" E	To 87°42'55.69" E

LAND DETAILS

Plot no.
4 (P), 8 (P), 9 (P) & 30 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed 22.10.2017 to 21.10.2027.
2	CO	:	The CO, Taljhari vide letter no. 708/2024, dated 14.11.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 488/M, dated 18.03.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site and also certified that said project falls under grid no. 7 and production is within the over all permissible production limit.
4	DFO Wild Life	:	DFO –cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2111, dated 28.10.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide memo no. 1540, dated 29.10.2016 and memo no. 1143, dated 09.06.2017 certified that the distance of forest land is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Sahibganj District (Sl. No. 33, Page no. 275).
7	Gram Sabha	:	Gram Sabha conducted on 19.12.2016.
8	Scheme / Mine Plan Approval	:	Mining plan approved by DMO, Sahibganj vide letter no. 487/M, dated 18.03.2025.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Sahibganj vide letter no. EC/DEIAA/2017-18/259, dated 19.10.2017.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide ref. no. 1935, dated 19.10.2024.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide ref. no. JSPCB/HO/RNC/CTE-2431068/2018/794, dated 08.08.2018.
12	Consent to	:	CTO issued by JSPCB vide ref. no. : JSPCB/HO/RNC/CTO-

	Operate (CTO)		18815482/2024/1109, dated 03.07.2024.
13	Production Report	:	Production report issued by DMO, Sahibganj vide memo no. 1331/M, dated 07.12.2024.
14	Qualified Person	:	Dr. Amarjeet Kumar Singh e-mail dated 26.03.2025 affirmed that the mining scheme has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi - mechanized mining method	
2	Quarry Area	:	3.73 ha or 9.22 Acres	Life of Mine – Upto the lease period i.e. 22.10.2017 to 21.10.2027.
3	Waste Generation	:	Very little amount of waste will be generated, which will be used in construction of approach road and back filling	
4	Stripping Ratio	:	01:0.1	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	180 AMSL to 230 AMSL	
8	Ground Level Elevation	:	180 AMSL	
9	Ultimate Working Depth	:	153 AMSL (27mbgl)	
10	Water Table	:	140-142 AMSL (38-40 mbgl)	
11	Topography of Mine	:	The lease area represents undulating topography covered by basalt.	
12	Explosive Requirement	:	100 kg/day	
13	Diesel/Fuel requirement	:	140 litre/day	

Production Details

Year	Production in EC In Tons	Production of Stone in Cum	Production of Stone in Tons	Bench AMSL
6th	280563	93521	280563	118-106
7th	280593	93531	280593	106-100
8th	280524	93508	280524	100-94
9th	280503	93501	280503	94-88
10th	280551	93517	280551	88-82
Total	**1402734**	**467578**	**1402734**	

As per approved mine plan production: - 93531 cum/annum or 280593 TPA.

As per EC letter production: - 93531 cum/annum or 280593 TPA

Land Use

Category	Existing Land Use (In Ha)	After End of Scheme period (in Ha)	At the End of Conceptual Period (in Ha)
Excavation	0.79	3.02	3.09 (entire area shall be left as water reservoir)
Safety Barrier / Green Belt	0.64 (Plantation)	0.64 (Plantation)	0.64 (Plantation)
Road	0.001	Comes under mining area	Comes under mining area
Crusher	0.02	0.02	Shifted
Total area in use	**1.451**	**3.68**	**3.73**
Balanced Area	2.279	0.05	--
Total Lease area	**3.73**	**3.73**	**3.73**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.64 ha	1600 (Already done during previous year of mining)
2	Along Approach Road	:	108 m	216
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

Note: A total of 1916 saplings were proposed to be planted. Out of which 1600 plant in Safety Zone area have been planted during previous year of mining.
(216 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 316 Plants)

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

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air	--	14,000

	ii) Water iii) Soil iv) Noise		8,000 8,000 7,000
3	Plantation	1,58,000	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
TOTAL		**3,58,000**	**4,87,000**

Note: *316 plants * 500 Rs (for each plants including hedges and fences) = 1.58 Lakh
A total of 1916 saplings were proposed to be planted. Out of which 1600 plant in Safety Zone area have been planted during previous year of mining.
(216 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 316 Plants)
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/- or 1,50,000/-(including maintenance)

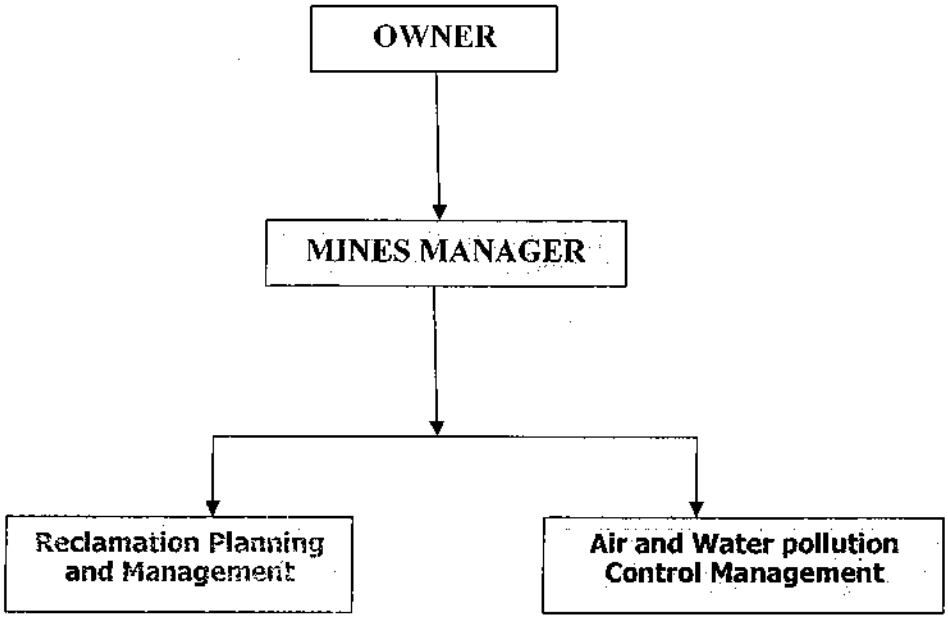
Environment Monitoring Programme

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

Solid Waste Management

The small quantity of waste will be dumped in the lease area with suitable precautions in the plan period and will be used for backfilling in plan and conceptual periods.

Organization Structure



Water Quality Management

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

Air Quality Management

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

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

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

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

Severity/Impact Intensity

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

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone mining operation

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

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

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

Preventive Measures:

Face Stability

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

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

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

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

Blasting Operations

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

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

Handling of Explosives

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

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

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

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.

- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.

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

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling 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 Kirokuria Stone Mine of M/s Saraswati Stone Works (Prop. : Shri Dinesh Kumar Yadav), Village : Kirokuria, Thana : Taljhari, Distt. : Sahibganj, Jharkhand (3.73 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

I. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.

II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*Ek Ped Ma Ke Naam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

****

2. **Dalabari Stone Deposit of M/s Maa Durga Stone Works (Prop. : Shri Bishnu Prasad Yadav), Village : Dalabari, Thana : Borio, Distt. : Sahibganj, Jharkhand (2.93 Ha).**

(Proposal no.: SIA/JH/MIN/ 530318 /2025)

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

This is a new project which has been taken for appraisal on 27.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 110777.77 cum/annum or 299100 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Dalabari Stone Deposit	
2	Lessee:	:	M/s Maa Durga Stone Works Sri Bishnu Prasad Yadav S/o late Raj Kishor Yadav At - Jay Prakash Nagar, Sakrogarh, PO & District - Sahibganj, State - Jharkhand – 816129	
3	Lease Address	:	Village – Dalabari, Anchal - Borio, District – Sahibganj, State - Jharkhand	
4	Lease Area	:	2.93 ha.	Acres- 7.25 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 60.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 13.125 Lakhs	Recurring: 4.77 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	1107671.5 cum	2990713.05 tonnes
10	Mine Life	:	9.9 ~ 10 years	
11	Man power	:	20	
12	Water Requirement	:	7.7 ~ 8.0 KLD (Drinking: 0.20 KLD, Dust Suppression: 3.05KLD, Plantation: 4.45 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Ganga River, approx. 10.77 km towards NE direction.	
17	Nearest Habitation	:	Dalabari village approx. 0.51 km NE direction of mine site.	
18	Nearest Railway Station	:	Kalian Chak Railway station, approx. 6.5 km towards WNW direction.	
19	Nearest Airport	:	Deoghar Airport, approx. 118.40 km towards SW direction.	
20	Nearest Forest	:	Fairly dense mixed jungle, Approx 0.5 km SW direction from project site.	

21	Road & Highways	:	Fairly dense mixed jungle, Approx 1.0 km NE direction from project site. NH-18, Approx. 5.81 km towards WNW direction.

CO-ORDINATES

1	Latitude	:	From 25°02'59.82"N	To 25°03'09.27" N
2	Longitude	:	From 87°40'29.64" E	To 87° 40' 35.30" E

LAND DETAILS

Khata no.	Plot no.
04 & 12	119 (P) & 120 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 1020/M, dated 26.09.2024.
2	CO	:	The CO, Borio, Sahibganj vide letter no. 192/Ra, dated 11.05.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster & Grid certificate	:	DMO, Sahibganj vide memo no. 475/M, dated 18.03.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site and also certified that the proposed project site is outside of Redzone Grid 1,3,4 & 7.
4	DFO Wild Life	:	DFO – cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1309, dated 28.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide letter no. 1269, dated 27.06.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Sahibganj District (Sl. No. 22, Page no. 163).
7	Gram Sabha	:	Gram Sabha conducted on 20.03.2020.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 474/M, dated 18.03.2025.
9	Qualified Person	:	Dr. Amarjeet Kumar Singh through e-mail dated 26.03.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method.	
2	Quarry Area	:	2.93 Ha. or 7.25 Acre	Life of Mine – 9.9 or 10 years
3	Waste Generation	:	Total 30221.82 cum waste shall be generated during the plan period.	
4	Stripping Ratio	:	1: 0.2	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	160 AMSL to 220 AMSL	
8	Ground Level Elevation	:	160 AMSL	
9	Ultimate Working Depth	:	133 AMSL (27 m bgl)	
10	Water Table	:	70-72AMSL (88-90m bgl)	
11	Topography of Mine	:	Area represents a small hillock.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	130 litre/day	

Production Details

Year	Production of stone in cum	Production of stone in Tonnes	Total Waste in cum	Bench (AMSL)
1st	109858	296616.60	6410.0	199-181
2nd	110777.77	299100.00	5957.42	181-169
3rd	108839.6	293866.92	6281.40	175-157
4th	106618.5	287869.95	6109.50	163-151
5th	103806.50	280277.55	5463.50	157-151
Total	**539900.4**	**1457731.02**	**30221.82**	-

Land Use

Pattern of Utilization	Existing Land Use (Ha.)	During Plan Period (Ha.)	Conceptual stage (after life of mine) (in Ha.)
Quarry	Nil	2.32	2.40 (Entire area shall be left as water reservoir for Rain Water Harvesting)
Infrastructure	Nil	0.01	Nil
Mine Road	Nil	Under Query	Under Query
Garland Drains	Nil	0.06	Nil

Green Belt	Nil	0.53	0.53
Settling Tank	Nil	0.01	Nil
Total	**Nil**	**2.93**	**2.93**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.53 ha	1325
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.

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	11,12,500	1,50,000
4	Construction and maintenance of haul road	2,00,000	90,000
TOTAL		**12,12,500**	**4,77,000**

Note: * 2225 plants * 500 Rs (for each plants including hedges and fences) = Rs. 11,125 lakhs.
Salary of Labor for haul road maintenance 1 labor*300 =300 per day 300*300 = 90000/-
**** 5 lakh per kilometer (500000 * 0.40 km haul road = 200000/-)***

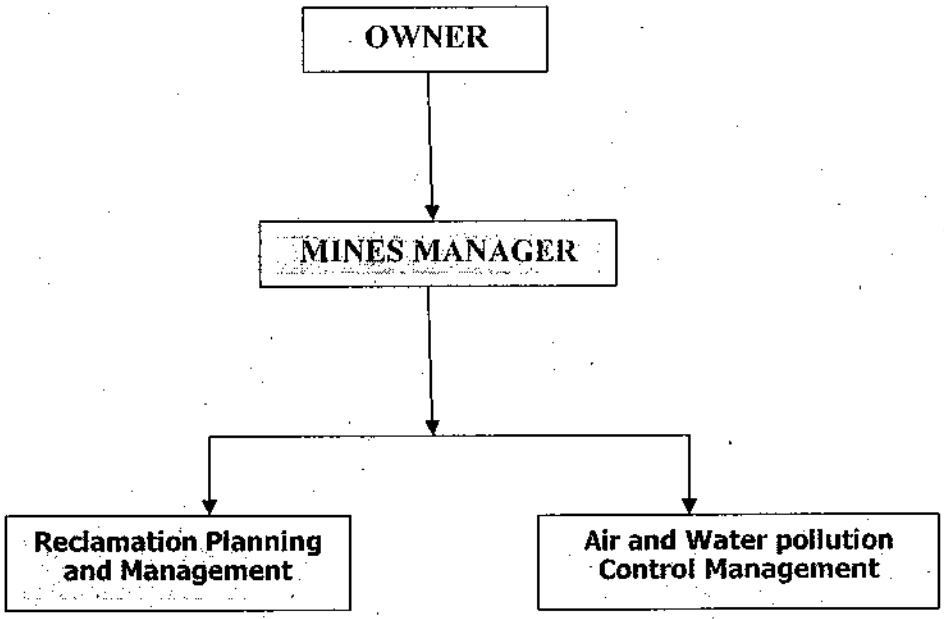
Environment Monitoring Programme

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

Solid Waste Management

Total 30221.82 cum waste generated during this mining plan period, so there is no requirement of waste dumping Plan for this period because it is used for village & haul road maintenance.

Organization Structure



Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be

constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside

- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

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

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

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

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, injuryor system damage

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone mining operation

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

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

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

Preventive Measures:

Face Stability

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

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

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

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

- Mine road shall be made smooth regularly with a road roller.

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

Undertaking submitted affirming:

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

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Dalabari Stone Deposit of M/s Maa Durga Stone Works (Prop. : Shri Bishnu Prasad Yadav), Village : Dalabari, Thana : Borio, Distt. : Sahibganj, Jharkhand (2.93 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"Ek Ped Ma Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

****

3. **Stone Mine of M/s Shah Contruction (Prop. : Mr. Shabjahan Ansari), Village : Leba, Anchal : Taljhari, Distt. : Sahibganj, Jharkhand (2.02 Ha).**

(Proposal no.: SIA/JH/MIN/ 522784 /2025)

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

This is a new project which has been taken for appraisal on 27.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: **Proposed Capacity- 61888.88 cum/annum or 167100.00 TPA.**

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	M/s Shah Construction	
2	Lessee:	:	M/s Shah Construction (Proprietor - Shahjahan Ansari)	
3	Lease Address	:	Village : Leba, Anchal : Taljhari, Distt. : Sahibganj, Jharkhand.	
4	Lease Area	:	2.02 ha.	Acres-5.0 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 90.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 20.60 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	676742.59 cum	1827205.00 tonnes
10	Mine Life	:	10 years	
11	Man power	:	20	
12	Water Requirement	:	14.90~ 15.0 KLD (Drinking: 0.20 KLD, Dust Suppression: 8.04 KLD, Plantation: 6.66 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Ganga River, approx 12.68 km in ENE direction of mine site.	
17	Nearest Habitation	:	approx. 350 meters ENE direction of mine site	
18	Nearest Railway Station	:	Tinpahar Junction, approx 7.94 km in ESE direction	
19	Nearest Airport	:	Deoghar Airport, approx. 116.92 km towards WSW direction	
20	Nearest Forest	:	Protected Forest, Approx. 3.0 km. in East direction of mine site. Protected Forest, Approx. 4.0 km. in ENE direction of mine site. Protected Forest, Approx. 4.80 km. in NE direction of mine site.	
21	Road & Highways	:	NH-114 A, Approx. 5.78 km in West direction.	

CO-ORDINATES

1	Latitude	:	From 25°01'40.03" N	To 25°01'46.58" N
2	Longitude	:	From 87°40'17.21" E	To 87°40'23.89" E

LAND DETAILS

J.B. no.	Plot no.
06	13 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 854/M, dated 31.08.2024.
2	CO	:	The CO, Taljhari vide letter no. 309, dated 08.07.2022 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster & Grid certificate	:	DMO, Sahibganj vide memo no. 456/M, dated 17.03.2025 certified that 01 other mining lease area (5.00 Acre) exists within 500 meters radius from proposed project site and total area is 10.00 Acre and also certified that the proposed project site is outside of Redzone Grid 1,3,4 & 7.
4	DFO Wild Life	:	DFO – cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2630, dated 28.10.2022 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide letter no. 1836, dated 12.07.2022 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Sahibganj District (Sl. No. 19, Page no. 161).
7	Gram Sabha	:	Gram Sabha conducted on 27.02.2022.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 1073/M, dated 07.10.2024.
9	Qualified Person	:	Dr. Amarjeet Kumar Singh through e-mail dated 26.03.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	2.02 Ha. Or 5.0 Acre	Life of Mine – 10 Years
3	Waste Generation	:	There is few amount of waste will be generated, which will be used for manufacture of approach road	
4	Stripping Ratio	:	1: 0.1	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	165 AMSL to 192 AMSL	
8	Ground Level Elevation	:	165 AMSL	
9	Ultimate Working Depth	:	140 AMSL (25 m bgl)	
10	Water Table	:	120-122 AMSL (43-45 m bgl)	
11	Topography of Mine	:	Area represents an almost gently sloping land with rock mass of Granite gneiss.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	150 litre/day	

Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Bench AMSL
1st Year	61.888.88	167.100.00	190-182
2nd Year	61.888.88	167.100.00	182-176
3rd Year	61.888.88	167.100.00	176-170
4th Year	61.888.88	167.100.00	170-164
5th Year	61.888.88	167.100.00	170-164
Total	**309,444.4**	**835,500.00**	

Land Use

Type of land use	Existing (acre)	During Plan Period (acre)	During Conceptual Period/ after closure of Mines(acre)
Barren Land	2.01	0.03	Nil
Quarry	Nil	1.26	1.36 (Entire Area will be

			converted into Water reserve)
Road	0.01		-
Infrastructure	Nil	0.01	Nil
Approach roads	Nil	0.01	Nil
Garland drain	Nil	0.05	Nil
Green Belt	Nil	0.66 (plantation)	0.66 (plantation)
Settling Tank	Nil	0.01	Nil
Total	**2.02**	**2.02**	**2.02**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.66 ha	1650
2	Along Approach Road	:	790 m	1580
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

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

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	14,000 8,000 8,000 7,000
3	Plantation	16,65,000	1,00,000

4	Construction and maintenance of haul road	3,95,000	1,50,000
TOTAL		**20,60,000**	**4,87,000**

*Note: *3,330 plants *500 Rs (for each plants including hedges and fences) = 16.65 lakhs*
*Salary of Labor for haul road maintenance 1 labor*300 =300 per day*
*300*300 = 90,000/- or 1,50,000/-*
** 5.0 lakh per kilometer (500000 * 0.790 km haul road = 3,95,000 /-)*

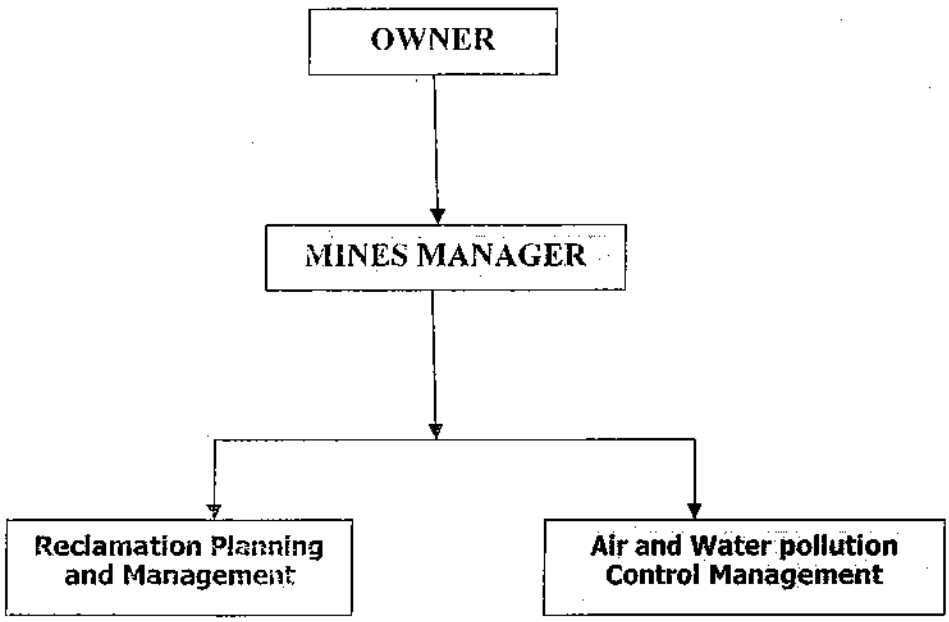
Environment Monitoring Programme

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

Solid Waste Management

There is few amount of waste will be generated, which will be used for manufacture of approach road.

Organization Structure



Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.

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

Air Quality Management

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

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

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

L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injuryor 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	Unwanted	Very	Catastrophic	5

	Explosives	Explosion	Unlikely		
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.

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Stone Mine of M/s Shah Contruction (Prop. : Mr. Shabjahan Ansari), Village : Leba, Anchal : Taljhari, Distt. : Sahibganj, Jharkhand (2.02 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). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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4. **Kulbhanga Stone Deposit of Shri Ram Lakshman Yadav, Village : Kulbhanga, Block : Mandro, Distt. : Sahibganj, Jharkhand (2.832 Ha).**

(Proposal no.: SIA/JH/MIN/ 530317 /2025)

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

This is a new project which has been taken for appraisal on 27.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 67777 cum/annum or 182997 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Kulbhanga Stone Deposit	
2	Lessee:	:	Shri Ram Lakshman Yadav Village – Samdanala P.O-Sakarigali P.S- +District: Sahibganj, Jharkhand	
3	Lease Address	:	Village – Kulbhanga, Anchal - Mandro, District Sahibganj, State Jharkhand	
4	Lease Area	:	2.832 ha.	Acres- 7.0 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 50.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 4.745 Lakhs	Recurring: 4.27 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	676508.14 cum	1826572 tonnes
10	Mine Life	:	9.9 ~ 10 years	
11	Man power	:	17	
12	Water Requirement	:	7.96 ~ 8.0 KLD (Drinking: 0.17 KLD, Dust Suppression: 3.67 KLD, Plantation: 4.12 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Ganga River, approx. 8.14 km towards NE direction.	
17	Nearest Habitation	:	Kulbhanga village approx. 0.34 km NE direction of mine site.	
18	Nearest Railway Station	:	Sahibganj Railway Station, Approx. 7 km. in NE direction.	
19	Nearest Airport	:	Deoghar Airport, approx. 122.45 km towards SW direction.	
20	Nearest Forest	:	Fairly Dense Mixed jungle, approx 3.5km towards NW direction Protected Forest, Approx. 2.5 km. in NNE direction. Fairly Dense Mixed jungle Approx 1.5 SSE direction	
21	Road & Highways	:	NH-33 approx. 5 km in North direction.	

CO-ORDINATES

1	Latitude	:	From 25°12'19.577"N	To 25°12'26.094" N
2	Longitude	:	From 87°34'59.194" E	To 87° 35' 8.085" E

LAND DETAILS

Khata no.	Plot no.
56 & 61	65 (P), 66 (P) & 68 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 110/M, dated 21.01.2025.
2	CO	:	The CO, Mandro vide memo no. 711/Ra., dated 26.07.2019 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster & Grid certificate	:	DMO, Sahibganj vide memo no. 260/M, dated 13.02.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site and also certified that the proposed project site is outside of Redzone Grid 1,3,4 & 7.
4	DFO Wild Life	:	DFO – cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1290, dated 27.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide memo no. 1606, dated 25.08.2018 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, sahibganj has been certified vide memo no. 534/M, dated 21.03.2025 that this project is mentioned in approved DSR of Dumka District as a potential area (Page no. 188).
7	Gram Sabha	:	Gram Sabha conducted on 03.08.2018.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 482/M, dated 18.03.2025.
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 Mechanized Method.	
2	Quarry Area	:	2.832 Ha. or 7.0 Acre	Life of Mine – 9.9 or 10 years
3	Waste Generation	:	Total 50617 cum waste shall be generated during the plan period.	
4	Stripping Ratio	:	1: 0.7	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	206 AMSL to 230 AMSL	
8	Ground Level Elevation	:	206 AMSL	
9	Ultimate Working Depth	:	175 AMSL (31 m bgl)	
10	Water Table	:	150-152 AMSL (54-56m bgl)	
11	Topography of Mine	:	Area represents a small hillock.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	130 litre/day	

Production Details

Year	Production of stone in cum	Production of stone in Tonnes	Overburden in cum	Intercalated waste in cum	Total Waste in cum	Bench (AMSL)
1st	67218	181489	19012	3538	22550	217-205
2nd	67498	182243	13818	3553	17371	205-199
3rd	67684	182746	0	3562	3562	199-193
4th	67777	182997	0	3567	3567	193-187
5th	67777	182997	0	3567	3567	187-181
Total	**337953**	**912473**	**32830**	**17787**	**50617**	-

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan Period (Ha)	Conceptual stage (after life of mine) (Ha)
Quarry	NIL	1.404	2.247 (Entire area shall be left as water reservoir for Rain Water Harvesting)
Waste Dump	NIL	0.385	NIL
Road	NIL	0.003	0.00
S Z Plantation	NIL	0.585	0.585

Total	0.000	2.377	2.832
Unused Area	2.832	0.455	0.0
Total Lease Area	**2.832**		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.585 ha	1463
2	Along Approach Road	:	250 m	500
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

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

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	14,000 8,000 8,000 7,000
3	Plantation	4,12,500	1,00,000
4	Construction and maintenance of haul road	62,000	90,000
TOTAL		**4,74,500**	**4,27,000**

Note: * 2063 plants * 200 Rs (for each plants including hedges and fences) = Rs. 4.12lakhs.

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

300*300 = 90000/-

**** 2.5 lakh per kilometer (250000 * 0.250 km haul road = 62,500/-)***

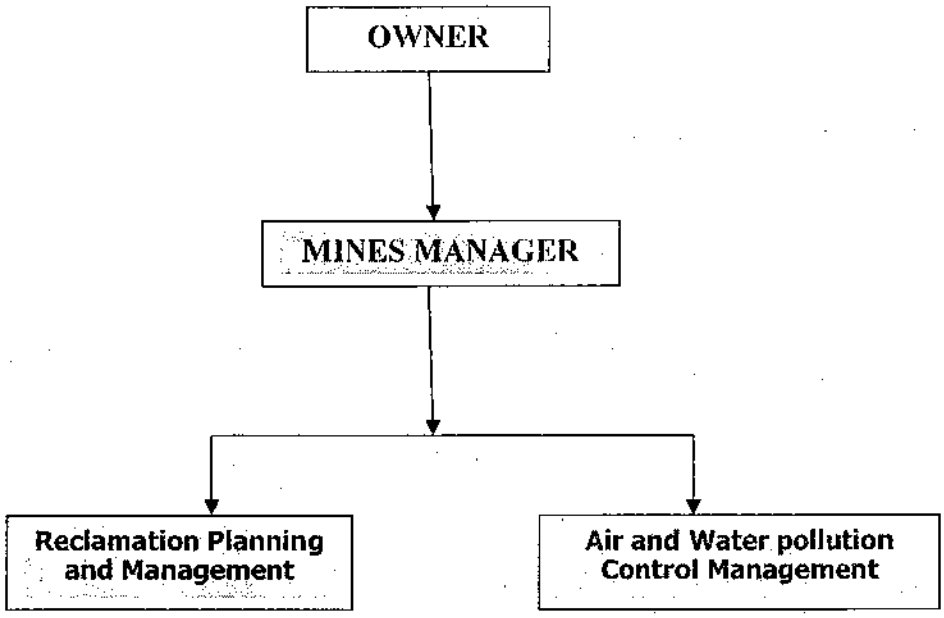
Environment Monitoring Programme

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

Solid Waste Management

Total 5061/ cum waste generated during this mining plan period, so there is no requirement of waste dumping Plan for this period because it is used for village & haul road maintenance.

Organization Structure



Water Quality Management

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

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

Air Quality Management

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

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

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

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, injuryor 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
- 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, 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 Kulbhanga Stone Deposit of Shri Ram Lakshman Yadav, Village : Kulbhanga, Block : Mandro, Distt. : Sahibganj, Jharkhand (2.832 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – III 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). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

****

5. **Chota Tangrani Stone Mine of M/s Mata Enterprises (Prop. : Shri Tarun Kumar Dey), Village : Chota Tangrani, Thana : Saraikela, Distt. : Saraikela-Kharsawan, Jharkhand (1.82 Ha).**

(Proposal no.: SIA/JH/MIN/ 526226 /2025)

During the presentation it was found that one plot no. 142 was not included in the certificate issued by DFO, Saraikela Forest Division, Saraikela vide letter no. 2083, dated 03.10.2016.

Hence, the PAs are required to submit afresh certificate from DFO, Saraikela Forest Division, Saraikela mentioning all the plot numbers of the proposed project.

On the receipt of the above the proposal will be taken up for consideration.

****

6. **Gendnawadih Stone Deposit of M/s Maa Ambey Mining and Minerals (Partners : (i) Smt. Sangita Kumar Agarwal (ii) Shri Niteshwar Sahi (iii) Shri Brahmanand Dubey) , Mouza : Gendnawadih, Thana : Topchanchi, Distt. : Dhanbad, Jharkhand (2.91 Ha).**

(Proposal no.: SIA/JH/MIN/ 529126 /2025)

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

This is a new project which has been taken for appraisal on 27.03.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 83407 cum/annum or 233540 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Gendnawadih Stone Deposit	
2	Lessee:	:	M/s Maa Ambey Mining And Minerals (Partners: (i) Smt. Sangita Kumari Agarwal, (ii) Sri Niteshwar Sahi, (iii) Sri Brahmanand Dubey)	
3	Lease Address	:	Mouza - Gendnawadih, Thana- Topchanchi, District – Dhanbad, State- Jharkhand	
4	Lease Area	:	2.91 ha.	Acres-7.20 Acres

5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 90.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 16.125 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	416933 cum	1167413 tonnes
10	Mine Life	:	05 years	
11	Man power	:	67	
12	Water Requirement	:	12.37 ~ 13.00 KLD (Drinking: 0.67 KLD, Dust Suppression: 6.25 KLD, Plantation: 5.45 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Katri Nadi, Approx 3.50 km towards NE direction of mine site.	
17	Nearest Habitation	:	Gendnawadih village approx. 460 meters west direction of mine site.	
18	Nearest Railway Station	:	Matari Railway Station, approx. 3.19 km towards SSE direction.	
19	Nearest Airport	:	Birsa Munda Airport, Ranchi approx. 110.30 km towards SW direction.	
20	Nearest Forest	:	PF, Approx. 1.50 km towards NW direction of mine site. PF, Approx. 0.50 km towards East direction of mine site. PF, Approx. 2.0 km towards WNW direction of mine site. PF, Approx. 2.0 km towards WNW direction of mine site.	
21	Road & Highways	:	NH-19, Approx 3.40 km towards NE direction of mine site.	

CO-ORDINATES

1	Latitude	:	From 23°51'58.18198" N	To 23°52' 06.47681" N
2	Longitude	:	From 86°13'32.26944 " E	To 86°13' 39.56066" E

LAND DETAILS

Khata no.	Plot no.
14, 16, 74, 38, 55, 53, 67, 77, 80, 100, 111, 144, 154, 166, 170 & 180	3107(P), 3066, 3069, 3070, 3128, 3075(P), 3103, 3076, 3078, 3071(P), 3073(P), 3088(P), 3077, 3095, 3102, 3096, 3074(P), 3091, 3092, 3093, 3094, 3089, 3090, 3068, 3072(P) & 3079

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Dhanbad vide letter no. 1178/M, dated 25.07.2023.

2	CO	:	The CO, Topchanchi, Dhanbad vide letter no. 341, dated 17.06.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Dhanbad vide memo no. 1600/M, dated 09.10.2023 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 2531, dated 16.12.2022 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Dhanbad Forest Division vide letter no. 2677, dated 23.11.2022 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Dhanbad District (Sl. no. 16, Page no. 76).
7	Gram Sabha	:	BDO, Topchanchi (Dhanbad) vide letter no. 343, dated 17.02.2023 informed that Gram Sabha conducted on 15.02.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Dhanbad vide Memo No. 887/M, dated 28.06.2024.
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 Mechanized Method
2	Quarry Area	:	2.91 ha or 7.20 Acres | Life of Mine – 05 Years
3	Waste Generation	:	Total 11892 cum gritty soil & 21944 cum intercalated waste will be generated during plan period.
4	Stripping Ratio	:	1: 0.09
5	Working Days	:	300
6	Benches: size & No	:	6m x 6m
7	Elevation of Mine	:	248 AMSL to 256 AMSL
8	Ground Level Elevation	:	248 AMSL
9	Ultimate Working Depth	:	202 AMSL
10	Water Table	:	184 - 178 AMSL (64-70 m bgl)
11	Topography of Mine	:	Area represents sloping land with rock mass of Granite-gneiss.
12	Explosive Requirement	:	110 kg/day
13	Diesel/Fuel requirement	:	140 litre/day

Production Details

Year	Production of stone in cum	Production of stone in Tonnes	Removal of Gritty Soil in cum	Removal of Gritty Soil In Tonnes	Intercalated waste In cum	Bench AMSL
1st	83389	233487	7805	11708	4388	256-238
2nd	83402	233524	000	000	4389	244-232
3rd	83355	233391	4087	6131	4387	238-244
4th	83407	233540	000	000	4390	250-232
5th	83379	233465	000	000	4390	238-202
Total	**416932**	**1167407**	**11892**	**17839**	**21944**	

Land Use

Type of land	Present Land use (Ha)	At the end of plan period (Ha)	Conceptual period (in Ha)		
			Backfill	Water Body	Plantation
Quarry	Nil	2.26(including backfill 0.31 Ha.& stone pitching wall 0.001 Ha)	Nil	2.26	Nil
Safety Zone	Nil	0.65 (plantation)	....	....	0.65
Road	0.02	Nil	....	....	....
Total Area in use	**0.02**	**2.91**	**Nil**	**2.26**	**0.65**
Balanced Unused Area	**2.89**	**Nil**	....	....	....
Total Applied Area	**2.91**				

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.65 ha	1625
2	Along Approach Road	:	500 m	1000

3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

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

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	 14,000 8,000 8,000 7,000
3	Plantation	13,62,500	1,00,000
4	Construction and maintenance of haul road	2,50,000	1,50,000
TOTAL		**16,12,500**	**4,87,000**

Note: *2725 plants * 500 Rs (for each plants including hedges and fences) = Rs. 13.625 lakhs
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/-or 1,50,000-(including maintenance)
**** 5.0 lakh per kilometer (500000 * 0.50 km haul road = 2,50,000/-)***

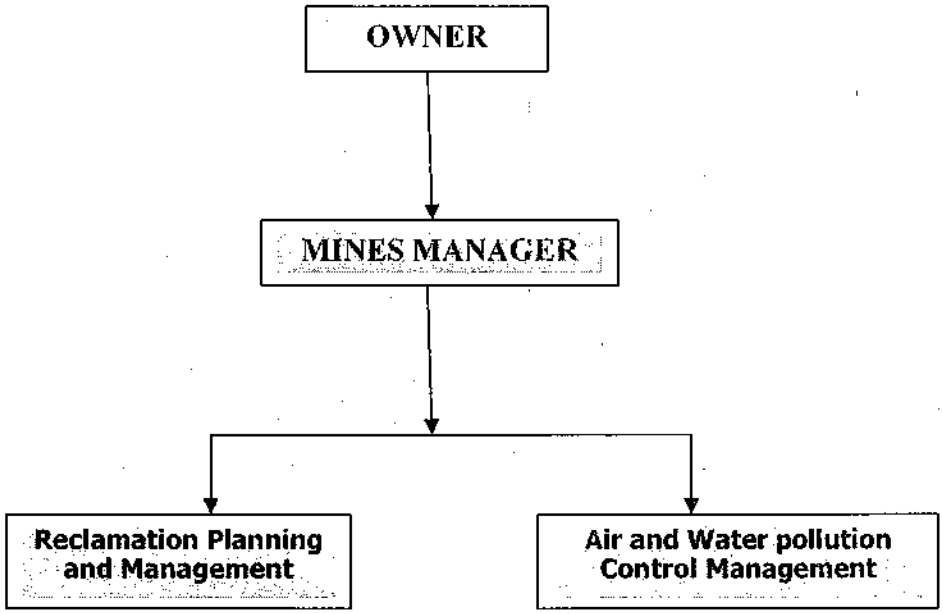
Environment Monitoring Programme

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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 11892 cum gritty soil & 21944 cum intercalated waste will be generated during plan period. The area is covered with a layer of gritty soil. During quarry development in 1st year gritty soil and intercalated waste will be removed and this material will be temporarily dumped [Area - 0.20 Ha, (L x W x H = 73m x 27m x 6m)] at the north part of the applied area with suitable precautions like constructing parapet wall, garland drain & in 2nd year intercalated waste will be removed and this will be backfill within the exhausted quarry in south west part of the applied area, in 3rd & 4th year removed material and previous dumped 1st year's material will be temporary backfill within the dead bench in south east to south direction, and in 5th year intercalated waste will be removed. this removal material and previous temporarily dead bench backfilled material (3rd and 4th year's) backfilled within the last exhausted quarry of the applied area and partly reclaimed the area.

Organization Structure



Water Quality Management

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

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

Air Quality Management

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

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

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

Severity/Impact Intensity

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

C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injuryor 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
- 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, 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 Gendnawadih Stone Deposit of M/s Maa Ambey Mining and Minerals (Partners : (i) Smt. Sangita Kumar Agarwal (ii) Shri Niteshwar Sahi (iii) Shri Brahmanand Dubey) , Mouza : Gendnawadih, Thana : Topchanchi, Distt. : Dhanbad, Jharkhand (2.91 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"Ek Ped Ma Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

****

7. Behra Stone Deposit of M/s Ganpati Stone Works (Partners : Shri Durga Hembram & Shri Amit Kumar), Mouza : Behra, Thana : Tundi, Distt. : Dhanbad, Jharkhand (1.659 Ha).

(Proposal no.: SIA/JH/MIN/ 530256 /2025)

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

This is a new project which has been taken for appraisal on 27.03.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 49675 cum/annum or 139089 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Behra Stone Deposit	
2	Lessee:	:	M/s Ganpati Stone Works, Partner- Sri Durga Hembram & Sri Amit Kumar	
3	Lease Address	:	Mouza – Behra, Thana -Tundi, District – Dhanbad, State- Jharkhand	
4	Lease Area	:	1.659 ha	Acres- 4.10 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 80 Lakhs	
7	EMP Budget	:	Capital: Rs. 12.60 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	231540 cum	648309 tonnes
10	Mine Life	:	05 years	
11	Man power	:	41	
12	Water Requirement	:	9.49 -10.00 KLD (Drinking: 0.41 KLD, Dust Suppression: 4.84 KLD, Plantation: 4.24 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	200 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Khudia Nadi, Approx. 5.00 km towards South direction of mine site.	
17	Nearest Habitation	:	Behra village approx. 530 meters East direction of mine site	
18	Nearest Railway Station	:	Dhanbad Junction Railway Station, approx. 15.40 km towards SSW direction.	
19	Nearest Airport	:	Birsa Munda Airport, Ranchi approx. 137.0 km towards WSW direction.	
20	Nearest Forest	:	Reserve Forest, Approx. 4.0 km towards East direction of mine site. Reserve Forest, Approx. 3.50 km towards NE direction of mine site. Reserve Forest, Approx. 4.50 km towards North direction of mine site. Protected Forest, Approx. 4.50 km towards NW direction of mine	

			site.
21	Road & Highways	:	SH-13, Approx. 0.85 km towards East direction of mine site.

CO-ORDINATES

1	Latitude	:	From 23°54' 41.81717" N	To 23°54' 47.67066" N
2	Longitude	:	From 86° 30' 11.31059" E	To 86°30' 17.4631" E

LAND DETAILS

Khata no.	Plot no.
46 (Old)	**Old :** 166, 171, 172, 173, 175, 176, 169, 161, 162, 163, & 177
190 (New)	**New :** 309, 310, 311, 308, 342 & 306 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Dhanbad vide letter no. 1298/M, dated 10.08.2023.
2	CO	:	The CO, Tundi, Dhanbad vide letter no. 36, dated 31.01.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Dhanbad vide memo no. 445/M, dated 22.03.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 2041, dated 06.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Dhanbad Forest Division vide letter no. 116, dated 12.01.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Dhanbad District (Sl. no. 17, Page no. 77).
7	Gram Sabha	:	Gram Sabha conducted on 10.02.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Dhanbad vide Memo No. 827/M, dated 15.06.2024.

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 Mechanized Method	
2	Quarry Area	:	1.659 ha or 4.10 Acres	Life of Mine – 05 Years
3	Waste Generation	:	Total 7453 cum Gritty soil and 12186 cum intercalated waste will be generated during plan period.	
4	Stripping Ratio	:	1: 0.2	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	230 AMSL to 232 AMSL	
8	Ground Level Elevation	:	230 AMSL	
9	Ultimate Working Depth	:	190 AMSL	
10	Water Table	:	180 - 173 AMSL (52-59 m bgl)	
11	Topography of Mine	:	Area represents a small hillock.	
12	Explosive Requirement	:	90 kg/day	
13	Diesel/Fuel requirement	:	110 litre/day	

Production Details

Year	Production of stone in cum	Production of stone in Tonnes	Removal of Gritty Soil in cum	Removal of Gritty Soil In Tonnes	Intercalated waste In cum	Bench AMSL
1st	39602	110887	4734	7100	2084	232-226
2nd	43093	120657	899	1349	2268	226-220
3rd	49584	138836	000	000	2610	226-208
4th	49584	138836	1820	2730	2610	220-214
5th	49675	139089	000	000	2614	220-190
Total	**231538**	**648305**	**7453**	**11179**	**12186**	

Land Use

Type of land	Existing Land use (Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)		
			Public use	Water body	Plantation
Quarry	0.022	1.171 (0.235 ha area shall be backfilled)	.....	1.171	.....
Road	0.043	Nil	.....	.....	.....
Safety Zone	Nil	0.488 (Plantation)	.....	.....	0.488
Total Area in use	**0.065**	**1.659**	.....	**1.171**	.....
Unused area	**1.594**	**Nil**	.....	.....	.....
Total Lease Area	**1.659**				

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.488 ha	1220
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.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	 14,000 8,000 8,000 7,000
3	Plantation	10,60,000	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
TOTAL		**12,60,000**	**4,87,000**

Note: * 2120 plants * 500 Rs (for each plants including hedges and fences) = 10.60 lakhs
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/-or 1,50,000-(including maintenance)
**** 5 lakh per kilometer (500000 * 0.40 km haul road = 2,00,000/-)***

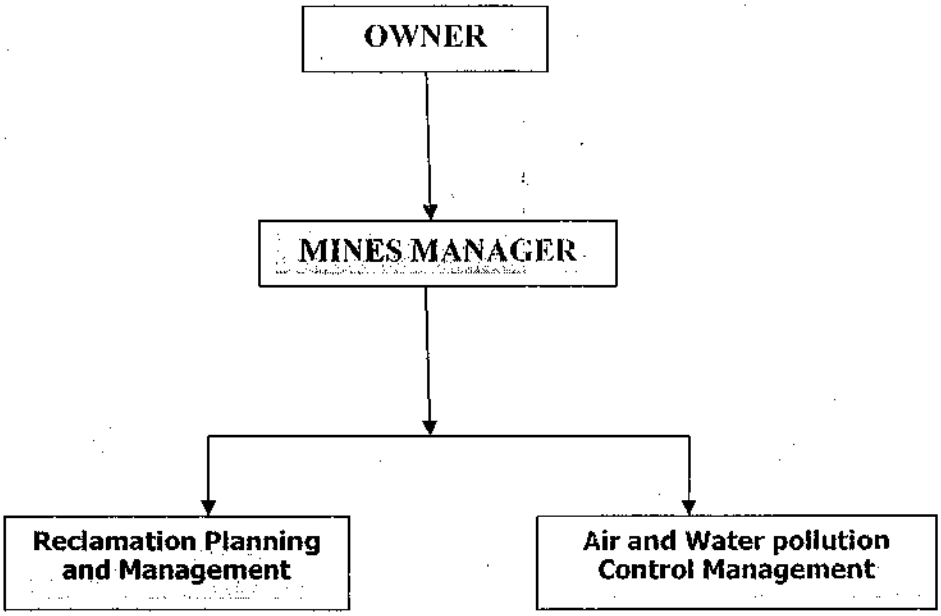
Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

Total 7453 cum Gritty soil and 12186 cum intercalated waste will be generated during plan period. The area is covered with a layer of gritty soil. During quarry development in 1st & 2nd year gritty soil and intercalated waste will be removed and this soil & waste will be temporarily dumped [Area - 0.136 Ha. (L x W x H = 39m x 35m x 5m). Area - 0.063 Ha, {L x W x H = 45m x 14m x 5ml)] at the south-west part of the area with suitable precautions like parapet wall, garland drain & in 3rd year removed intercalated waste will be temporarily backfilled within the exhausted quarry & in 4th year removed gritty soil. Intercalated waste & existing dumped soil will be temporarily backfilled within the exhausted quarry & in 5th year removed intercalated waste & existing temporarily backfill soil will backfill within the lowest three bench of the exhausted quarry.

Organization Structure



Water Quality Management

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- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
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(Catastrophic)					
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3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- 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.

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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, 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 Behra Stone Deposit of M/s Ganpati Stone Works (Partners : Shri Durga Hembram & Shri Amit Kumar), Mouza : Behra, Thana : Tundi, Distt. : Dhanbad, Jharkhand (1.659 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). 10% of the total green belt proposed shall be allocated under this clause.
II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying

water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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8. **Chikor Stone Deposit of Shri Kunal Kant Mishra, Mouza : Chikor, P.S. : Khunti, Distt. : Khunti, Jharkhand (0.70 Ha).**

(Proposal no.: SIA/JH/MIN/ 530433 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 27.03.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 12160 cum/annum or 32832 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Chikor Stone Deposit	
2	Lessee:	:	Sri Kunal Kant Mishra S/o-Sri Subodh Kant Mishra. At- Dak Bangla Road, Khunti, Thana-Khunti, District -Khunti, State-Jharkhand.	
3	Lease Address	:	Village – Chikor, Anchal - Khunti, District – Khunti, State - Jharkhand	
4	Lease Area	:	0.70 ha.	Acres- 1.74 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	

6	Project Cost	:	Rs. 30.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 7.37 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	119225 cum	321907.50 tonnes
10	Mine Life	:	9.80 ~ 10 years	
11	Man power	:	17	
12	Water Requirement	:	4.60 ~ 5.0 KLD (Drinking: 0.20 KLD, Dust Suppression: 2.25 KLD, Plantation: 2.15 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	200 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Kanchi Nadi, Approx. 3.0 km towards South direction of mine site.	
17	Nearest Habitation	:	Chikor village approx. 0.40 km East direction of mine site.	
18	Nearest Railway Station	:	Binagaon Railway station, approx. 12.5 km towards NW direction.	
19	Nearest Airport	:	Birsa Munda Airport, Ranchi approx. 20 km towards NNE direction.	
20	Nearest Forest	:	Open Scrub, Approx. 1.2 km towards North direction of mine site. Open Sal, Approx. 1.5 km towards West direction of mine site. Open Sal, Approx. 1.5 km towards West direction of mine site.	
21	Road & Highways	:	NH-20, Approx. 1.2 km. in South direction.	

CO-ORDINATES

1	Latitude	:	From 23°06'58.44"N	To 23°07'02.24" N
2	Longitude	:	From 85°17'36.65" E	To 85° 17' 40.13" E

LAND DETAILS

Khata no.	Plot no.
136	487

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Khunti vide letter no. 53/M, dated 20.01.2025.
2	CO	:	The CO, Sadar, Khunti vide letter no. 79, dated 17.01.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan.
3	DMO	:	DMO, Khunti vide memo no. 242/M, dated 19.03.2025 certified that 01 other mining lease area (4.09 Acre) exists within 500

			meters radius from proposed project site and total area is 5.83 Acre (2.36 Ha).
4	DFO Wild Life	:	DFO, Wildlife Division, Ranchi vide letter no. 172, dated 19.03.2025 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Khunti Forest Division vide letter no. 63, dated 13.01.2025 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Khunti has been certified vide memo no. 265/M, dated 26.03.2025 that this project is mentioned in approved DSR of Khunti District as a potential area (Page no. 172).
7	Gram Sabha	:	BDO, Khunti vide letter no. 1854 (ii), dated 26.12.2024 informed that Gram Sabha conducted on 22.12.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Khunti vide Memo No. 235/Mining, dated 17.03.2025.
9	Qualified Person	:	Shri Tapan Kumar Chakravarty through e-mail dated 26.03.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method.	
2	Quarry Area	:	0.70 Ha. or 1.74 Acre	Life of Mine –10 years
3	Waste Generation	:	Total 5403.05 cum waste shall be generated during the plan period.	
4	Stripping Ratio	:	1: 0.3	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	599 AMSL to 600 AMSL	
8	Ground Level Elevation	:	599 AMSL	
9	Ultimate Working Depth	:	576 AMSL (23 m bgl)	
10	Water Table	:	560-562 AMSL (37-39m bgl)	
11	Topography of Mine	:	Area represents a small hillock.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	100 litre/day	

Production Details

Year	Production of stone in cum	Production of stone in Tonnes	Waste (cum) in plan period	Waste (cum) in ultimate	Bench (AMSL)
1st	10450.00	28215.00	(851+550.00) =1401.00	4014.95	600-594
2nd	12160.00	32832.00	(872+640.00) =1512.00		600-594
3rd	11623.25	31382.78	(703+611.75) =1314.75		599-588
4th	11191.00	30215.70	589.00		594-588
5th	11139.70	30077.19	586.30		594-582
Total	**56563.95**	**152722.67**	**5403.05**	**4014.95**	**-**

Land Use

Land Utilization	Existing Land use (Ha.)	At the end of plan period (Ha)	At Conceptual period (Ha)
Excavation	0.0	0.33	0.43(Entire area shall be converted Rain water Harvesting)
Road	0.08	0.03	Comes under Quarry
Safety Zone (Plantation)	--	0.27 (Plantation)	0.27 (Plantation)
Unused Area	0.62	0.07	0.13
Total Lease Area	**0.70**	**0.70**	**0.70**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.27 ha	675
2	Along Approach Road	:	150 m	300
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	14,000 8,000 8,000 7,000
3	Plantation	5,37,000	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
TOTAL		**7,37,000**	**4,87,000**

Note: * 1075 plants * 500 Rs (for each plants including hedges and fences) = 5.37 Lakh
A total of 1075 saplings were proposed to be planted.
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/- or 1,50,000/-(including maintenance)

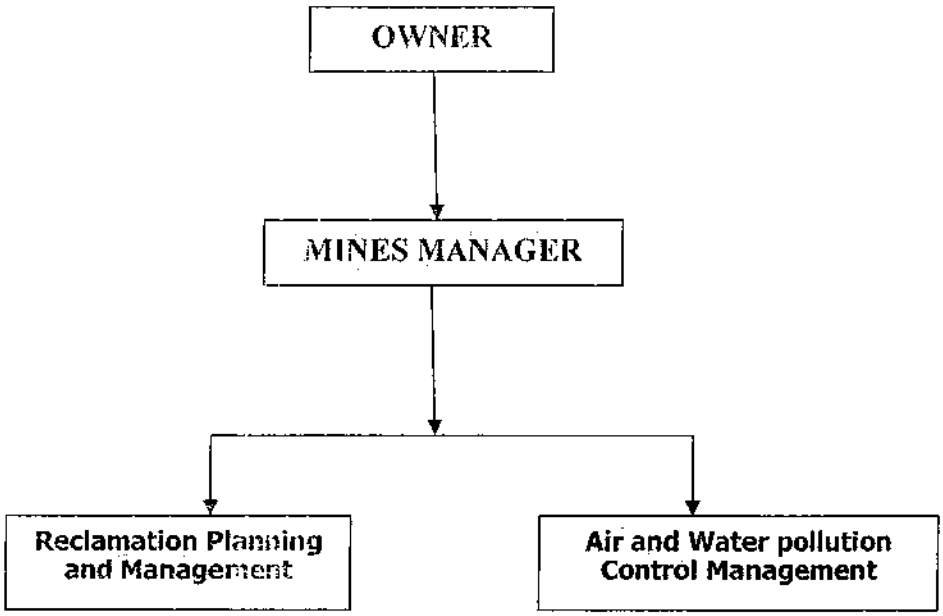
Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

Total 5403.05cum waste generated during this mining plan period, so there is no requirement of waste dumping Plan for this period because it is used for village & haul road maintenance.

Organization Structure



Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.

- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

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, injuryor system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1	5	**4**	**3**	**2**	**1**

(Catastrophic)					
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
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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:

- 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 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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While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

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- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
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- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
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- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure

- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
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c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.

e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the 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 Chikor Stone Deposit of Shri Kunal Kant Mishra, Mouza : Chikor, P.S. : Khunti, Distt. : Khunti, Jharkhand (0.70 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). 10% of the total green belt proposed shall be allocated under this clause.
II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged

photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

****

2. **Nagri Stone Deposit of M/s Ganpati Stone (Partner : Shri Rajesh Kumar & Shri Dilip Kumar Mehta), Village : Nagri, Thana : Dumri, Distt. : Giridih, Jharkhand (0.975 Ha).**

(Proposal no.: SIA/JH/MIN/ 530425 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 27.03.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 20349 cum/annum or 54942 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Nagri Stone Deposit	
2	Lessee:	:	M/s Ganapati Stone, Partner 1- Rajesh Kumar, S/o Shri Koshalesh Ram, Village and Post Baniyadih, District Giridih, Partner 2- Dilip Kumar Mehta, S/o Late Badri Narayan Mehta Village and Post Domchanch, Police Station Domchanch, District Koderma.	
3	Lease Address	:	Village – Nagri, Thana- Dumri, District – Giridih, State - Jharkhand	
4	Lease Area	:	0.975 ha.	Acres- 2.41 Acres

5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 40.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 3.85 Lakhs	Recurring: 3.27 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	97289.62 cum	262682 tonnes
10	Mine Life	:	5 years	
11	Man power	:	15	
12	Water Requirement	:	7.721 ~ 8.0 KLD (Drinking: 0.15 KLD, Dust Suppression: 4.485 KLD, Plantation: 3.086 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	200 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Jamuniya Nadi, Approx. 3.0 km towards SW direction of mine site. Paraiya Nadi, Approx. 7.51 km towards NW direction of mine site.	
17	Nearest Habitation	:	Banidih village approx. 0.30 km SSW direction of mine site.	
18	Nearest Railway Station	:	Bholidih Railway station, approx. 7 km towards S direction.	
19	Nearest Airport	:	Dhanbad Airport, approx. 35.81 km towards ESE direction.	
20	Nearest Forest	:	Parasnath Protected Forest, Approx. 2 km towards NW direction of mine site. Protected Forest, Approx 2.9 km towards SE direction of mine site. Open Scrub Jungle, Approx 6.0 km towards SE direction of mine site.	
21	Road & Highways	:	NH-19, Approx. 1.0 km. in North direction.	

CO-ORDINATES

1	Latitude	:	From 23°55'30.9314"N	To 23°55'35.1984" N
2	Longitude	:	From 86°05'33.8669" E	To 86°05' 41.5635" E

LAND DETAILS

Khata no.	Plot no.
04, 06 & 73	1915, 1916 (P) & 1917 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Giridih vide letter no. 578/M, dated 22.06.2024.
2	CO	:	The CO, Dumri (Giridih) vide letter no. 550, dated 07.07.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in Khatiyan.

3	DMO	:	DMO, Giridih vide memo no. 120/M, dated 18.02.2025 certified that 02 LoI (2.41 Acre & 2.94 Acre) exists within 500 meters radius from proposed project site and total area is 8.76 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1414, dated 11.07.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Giridih East Forest Division vide letter no. 1704, dated 20.05.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Giridih District (Sl. No. 14, Page no. 83).
7	Gram Sabha	:	DMO, Giridih vide letter no. 1166/M, dated 25.11.2023 informed that Gram Sabha conducted on 14.07.2023.
8	Mine Plan Approval	:	Approved by Assistant Director, Geology, District Geological Office, Koderma vide Memo No. 65, dated 12.03.2025.
9	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast semi- mechanized method.	
2	Quarry Area	:	0.975 Ha. or 2.41 Acre	Life of Mine – 5 years
3	Waste Generation	:	Total 22132 cum waste shall be generated during the plan period.	
4	Stripping Ratio	:	1: 0.2	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	286 AMSL to 290 AMSL	
8	Ground Level Elevation	:	286 AMSL	
9	Ultimate Working Depth	:	270 AMSL (16 m bgl)	
10	Water Table	:	232-250 AMSL (36-54m bgl)	
11	Topography of Mine	:	Area represents a small hillock.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	100 litre/day	

Production Details

Year	Production of stone in cum	Production of stone in Tonnes	Waste (cum) in plan period	Bench (AMSL)
1st	18297	49402	11043	288-282
2nd	18810	50787	990	276
3rd	19665	53096	1035	276-270
4th	20007	54019	5613	282-270
5th	20349	54942	3451	282-270
Total	**97128**	**262246**	**22132**	-

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	Conceptual stage (Ha) (after life of mine)
Excavation	0.0	0.558 ha (entire area will be converted into rainwater harvesting)	0.558 ha (0.059 area shall be backfilled & 0.499 ha area will be converted into rainwater harvesting)
Waste Dump	0.0	Nil	Nil
Road	0.0	0.0	0.0
Infrastructure	0.0	**0.0**	**0.0**
Safety Zone Plantation	0.0	0.417	0.417
Total	0.0	0.975	0.975
Unused Area	**0.975**	**0.00**	**0.00**
Total Lease Area	**0.975 ha**		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.417 ha	1043
2	Along Approach Road	:	200 m	400
3	No. of plants distributed with consultation local authorities	:	--	100

	/village Panchayat			

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	1,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	14,000 8,000 8,000 7,000
3	Plantation	3,08,600	1,00,000
4	Construction and maintenance of haul road	50,000	90,000
TOTAL		**3,58,600**	**3,27,000**

Note: * 1543 plants * 200 Rs (for each plants including hedges and fences) = 308600
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/-
**** 2.5 lakh per kilometer (250000 * 0.2km haul road = 50000/-)***

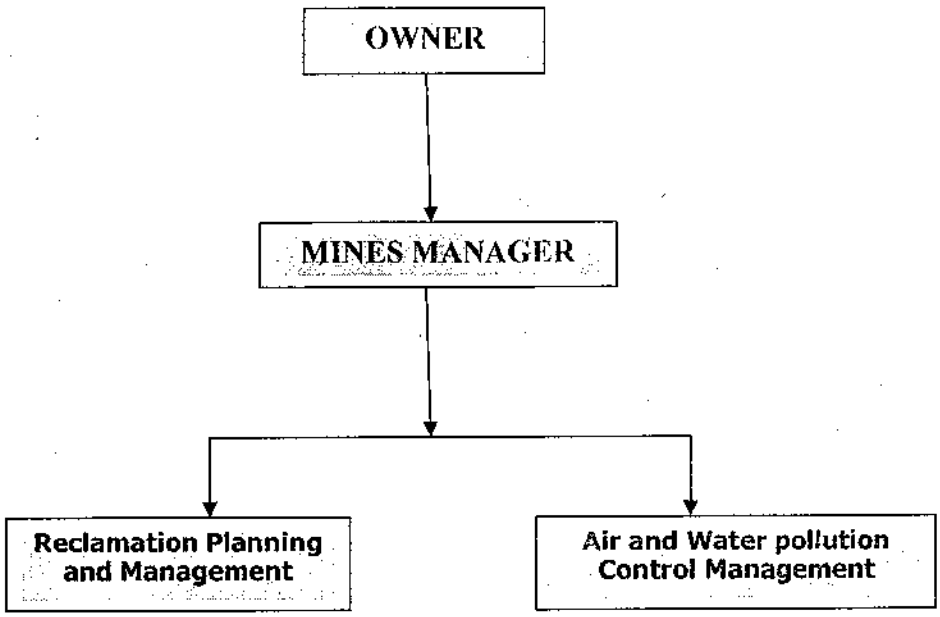
Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

Total 22132 cum waste generated during this mining plan period, so there is no requirement of waste dumping Plan for this period because it is used for village & haul road maintenance.

Organization Structure



Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.

- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

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, injuryor system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1	5	4	3	2	1

(Catastrophic)					
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.

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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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- 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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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 Nagri Stone Deposit of M/s Ganpati Stone (Partner : Shri Rajesh Kumar & Shri Dilip Kumar Mehta), Village : Nagri, Thana : Dumri, Distt. : Giridih, Jharkhand (0.975 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). 10% of the total green belt proposed shall be allocated under this clause.
II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged

photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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10. Nagri Stone Deposit of M/s Ganpati Stone (Partner : Shri Rajesh Kumar & Shri Dilip Kumar Mehta), Village : Nagri, Thana : Dumri, Distt. : Giridih, Jharkhand (1.380 Ha).

(Proposal no.: SIA/JH/MIN/ 530453 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 27.03.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 26126 cum/annum or 70540 TPA.

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Nagri Stone Deposit
2	Lessee:	:	M/s Ganapati Stone, Partner 1- Rajesh Kumar, S/o Shri Koshalesh Ram, Village and Post Baniyadih, District Giridih,

			Partner 2- Dilip Kumar Mehta, S/o Late Badri Narayan Mehta Village and Post Domchanch, Police Station Domchanch, District Koderma.	
3	Lease Address	:	Village – Nagri, Thana- Dumri, District – Giridih, State - Jharkhand	
4	Lease Area	:	1.380 ha.	Acres- 3.41 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 40.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 4.34 Lakhs	Recurring: 3.27 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	246412.96cum	665315 tonnes
10	Mine Life	:	5 years	
11	Man power	:	15	
12	Water Requirement	:	9.23 KLD (Drinking: 0.15 KLD, Dust Suppression: 5.24 KLD, Plantation: 3.84 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Jamuniya Nadi, Approx. 3.0 km towards SW direction of mine site. Paraiya Nadi, Approx. 7.51 km towards NW direction of mine site.	
17	Nearest Habitation	:	Nagri village approx. 0.39 km West direction of mine site.	
18	Nearest Railway Station	:	Bholidih Railway station, approx. 7 km towards S direction.	
19	Nearest Airport	:	Dhanbad Airport, approx. 35.81 km towards ESE direction.	
20	Nearest Forest	:	Parasnath Protected Forest, Approx. 2 km towards NW direction of mine site. Protected Forest, Approx 2.9 km towards SE direction of mine site. Open Scrub Jungle, Approx 6.0 km towards SE direction of mine site.	
21	Road & Highways	:	NH-19, Approx. 1.0 km. in North direction.	

CO-ORDINATES

1	Latitude	:	From 23°55'28.2260"N	To 23°55'55.1544" N
2	Longitude	:	From 86°05'37.2147" E	To 86°05' 43.5256" E

LAND DETAILS

Khata no.	Plot no.
06, 27 & 73	1916 (P), 1917 (P), 1918 & 1919 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Giridih vide letter no. 579/M, dated 22.06.2024.
2	CO	:	The CO, Dumri (Giridih) vide letter no. 549, dated 07.07.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in Khatiyan.
3	DMO	:	DMO, Giridih vide memo no. 121/M, dated 18.02.2025 certified that 02 LoI (3.41 Acre & 2.94 Acre) exists within 500 meters radius from proposed project site and total area is 8.76 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1415, dated 11.07.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Giridih East Forest Division vide letter no. 1703, dated 20.05.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Giridih District (Sl. No. 13, Page no. 83).
7	Gram Sabha	:	DMO, Giridih vide letter no. 1167/M, dated 25.11.2023 informed that Gram Sabha conducted on 14.07.2023.
8	Mine Plan Approval	:	Approved by Assistant Director, Geology, District Geological Office, Koderma vide Memo No. 66, dated 12.03.2025.
9	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast semi- mechanized method.	
2	Quarry Area	:	1.380 Ha. or 3.41 Acre	Life of Mine – 5 years
3	Waste Generation	:	Total 13786 cum waste shall be generated during the plan period.	
4	Stripping Ratio	:	1: 0.2	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	269 AMSL to 276 AMSL	
8	Ground Level Elevation	:	276 AMSL	
9	Ultimate Working Depth	:	245 AMSL (24 m bgl)	

10	Water Table	:	232-250 AMSL (19-37m bgl)
11	Topography of Mine	:	Area represents a small hillock.
12	Explosive Requirement	:	110 kg/day
13	Diesel/Fuel requirement	:	130 litre/day

Production Details

Year	Production of stone in cum	Production of stone in Tonnes	Waste (cum) in plan period	Bench (AMSL)
1st	23589	63692	8540	269-263
2nd	23843	64376	1255	263
3rd	24520	66203	1291	263-257
4th	25196	68029	1326	257-251
5th	26126	70540	1375	251-245
Total	**123274**	**332840**	**13786**	**-**

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	Conceptual stage (after life of mine) (Ha)
Excavation	0.0	0.393 ha	0.812 ha (entire area will be converted into rainwater harvesting)
Waste Dump	0.0	0.246	Nil
Road	0.0	0.009	0.0
Safety Zone Plantation	0.0	**0.568**	**0.568**
Total	**0.0**	**1.216**	**1.380**
Unused Area	**1.380**	**0.164**	**0.00**
Total Lease Area	**1.380**		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.568 ha	1420

2	Along Approach Road	:	200 m	400
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	1,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	 14,000 8,000 8,000 7,000
3	Plantation	3,08,600	1,00,000
4	Construction and maintenance of haul road	50,000	90,000
TOTAL		**4,34,000**	**3,27,000**

Note: * 1920 plants * 200 Rs (for each plants including hedges and fences) = 384000
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/-
**** 2.5 lakh per kilometer (250000 * 0.2km haul road = 50000/-)***

Environment Monitoring Programme

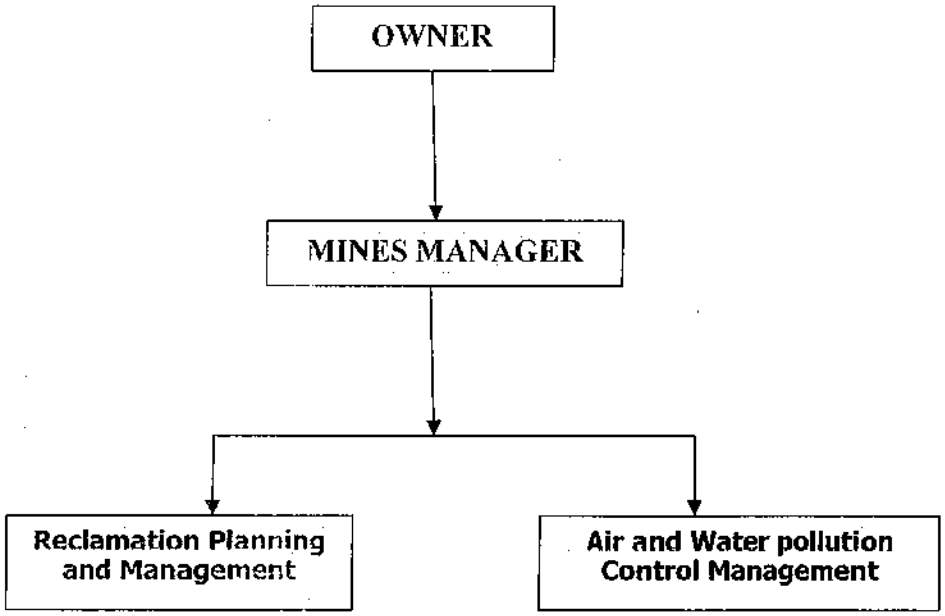
Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly

5	Noise	4 Stations	6 Monthly

Solid Waste Management

Total 13786 cum waste generated during this mining plan period, so there is no requirement of waste dumping Plan for this period because it is used for village & haul road maintenance.

Organization Structure



Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.

- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

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 enyironment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injuryor system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.
While others may need to work at or near the edge of a working bench the person most at risk
during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.
Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.

- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

I. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Nagri Stone Deposit of M/s Ganpati Stone (Partner : Shri Rajesh Kumar & Shri Dilip Kumar Mehta), Village : Nagri, Thana : Dumri, Distt. : Giridih, Jharkhand (1.380 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). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

****

11. Telodih Stone Mine of M/s Ram Janki Stone Works (Partner : Shri Surendra Singh & Shri Om Prakash Barnwal), Village : Telodih, Thana : Giridih, Distt. : Giridih, Jharkhand (0.469 Ha).

(Proposal no.: SIA/JH/MIN/ 530684 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is an amendment project which has been taken for appraisal on 27.03.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 11642 cum/annum or 31434 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Telodih Stone Deposit	
2	Lessee:	:	M/s Ram Janki Stone Works Partner- Sri Surendra Singh & Sri Om Prakash Barnwal	
3	Lease Address	:	Village – Telodih, Thana - Giridih, District- Giridih, Jharkhand	
4	Lease Area	:	0.469 ha.	Acres- 1.16 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 80.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 6.00 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New (Amendment)	
9	Mineable Reserves	:	11642 cum	31434 tonnes
10	Mine Life	:	Upto the lease period i.e. 28.08.2015 to 27.08.2025.	
11	Man power	:	15	
12	Water Requirement	:	3.54 ~ 3.60 KLD (Drinking: 0.15 KLD, Dust Suppression: 1.79 KLD, Plantation: 1.69 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	200 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Kubri Nadi, Approx 3.20 km towards East direction of mine site.	
17	Nearest Habitation	:	Sundartanr village approx. 600 meters west direction of mine site.	
18	Nearest Railway Station	:	Salaia Railway station, approx. 1.77 km towards SE direction.	
19	Nearest Airport	:	Deoghar Airport, approx. 53.61 km towards ENE direction.	
20	Nearest Forest	:	PF, Approx. 4.00 km towards East direction of mine site. PF, Approx. 3.00 km towards North direction of mine site.	
21	Road & Highways	:	NH-13, Approx. 1.66 km. in ENE direction.	

CO-ORDINATES

1	Latitude	:	From 24°13'12.85" N	To 24°13'15.50" N
2	Longitude	:	From 86°14'37.54 " E	To 86°14'42.14 " E

LAND DETAILS

Khata no.	Plot no.
31	1491 (P), 1492 (P), 1494 (P), 1490 (P) & 1596 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed : 28.08.2015 to 27.08.2025.
2	CO	:	The CO, Giridih vide letter no. 219, dated 16.03.2012 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in Khatiyan.
3	DMO	:	DMO, Giridih vide memo no. 227/M, dated 26.03.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 407, dated 08.03.2025 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Giridih East Forest Division vide letter no. 855, dated 06.03.2025 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 Giridih District (Sl. No. 30, Page no. 57).
7	Gram Sabha	:	Gram Sabha conducted on 14.05.2015.
8	Mine Plan Approval	:	Approved by Assistant Director, Geology, District Geological Office, Koderma vide Memo No. 70, dated 21.03.2025.
9	Production Report	:	Production report issued by DMO, Giridih vide letter no. 226/M, dated 26.03.2025.
10	Qualified Person	:	Shri Tapan Kumar Chakravarty through e-mail dated 26.03.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi - Mechanized Method	
2	Quarry Area	:	0.469 ha or 1.16 Acres	Life of Mine – Approx. 1 year
3	Waste Generation	:	Total 1018 cum waste will be generated during plan period.	
4	Stripping Ratio	:	1: 0.03	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	331 AMSL to 334 AMSL	
8	Ground Level Elevation	:	331 AMSL	
9	Ultimate Working Depth	:	315 AMSL	
10	Water Table	:	300 AMSL (31 m bgl)	
11	Topography of Mine	:	Area represents a small hillock Topography.	
12	Explosive Requirement	:	70 kg/day	
13	Diesel/Fuel requirement	:	90 litre/day	

Production Details

Year	Production of stone in cum	Production of stone in Tonnes	Overburden in cum	Intercalated waste In cum	Total Waste in Cum	Bench AMSL
1st	11642	31434	405	613	1018	333-315
Total	**11642**	**31434**	**405**	**613**	**1018**	

Land Use

land Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	At Conceptual period
Quarry	0.281	0.350	0.350 ha (0.014 ha area shall be backfilled, 0.336 ha area shall be left as water reservoir).
Waste Dump	NIL	Nil	Nil (waste dump to be removed and backfilled)
Road	NIL	0.0	0.0
Safety Zone	NIL	0.119	0.119

Plantation			
Total	0.281	0.469	0.469
Unused Area	0.188	0.00	0.0
Total Lease Area	0.469		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.119 ha	300
2	Along Approach Road	:	100 m	200
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	 14,000 8,000 8,000 7,000
3	Plantation	4,00,000	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
TOTAL		**6,00,000**	**4,87,000**

*Note: *800 plants * 500 Rs (for each plants including hedges and fences) = 4.0lakh*
*Salary of Labor for haul road maintenance 1 labor*300 =300 per day*
300 300 = 90000/- 1,50,000 (Including maintenance)*

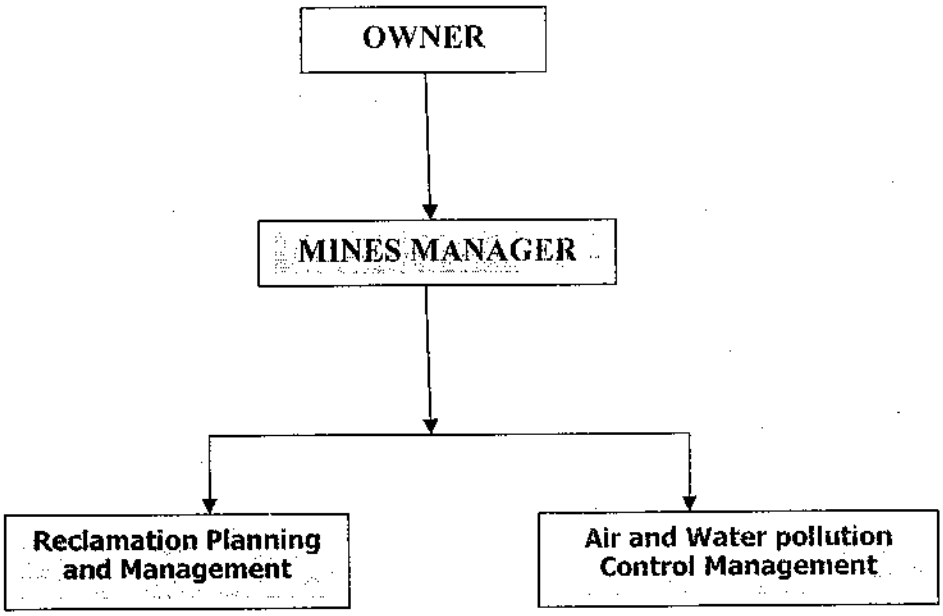
Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

It has been calculated that total 1018 cum in-situ 1272.19 cum loose & 1081.36 cum shall be used for backfilling of exhausted part of safety zone in eastern part and it will cover about 0.014 ha area.

Organization Structure



Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.

- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- it shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injuryor system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	**4**	**3**	**2**	**1**
C2 (Major)	10	8	6	**4**	**2**
C3 (Moderate)	*15*	12	9	6	**3**
C4 (Minor)	*20*	*16*	12	8	**4**
C5 (Insignificant)	*25*	*20*	*15*	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	**High Risk**	**1-4**
2	Medium Risk	5-12
3	*Low Risk*	*13-25*

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock	Occasional	Major	6

		(Bodily Injury)			
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the

face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.
While others may need to work at or near the edge of a working bench the person most at risk
during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.
The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.
The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container

- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.

- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
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 Telodih Stone Mine of M/s Ram Janki Stone Works (Partner : Shri Surendra Singh & Shri Om Prakash Barnwal), Village : Telodih, Thana : Giridih, Distt. : Giridih, Jharkhand (0.469 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). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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12. Etke Stone Deposit of M/s H.G. Infra Engineering Limited, Village : Etke, Thana : Peterwar, Distt. : Bokaro, Jharkhand (0.80 Ha).

(Proposal no.: SIA/JH/MIN/ 497195 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is an amendment project which has been taken for appraisal on 27.03.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 20,313.45 cum/annum or 56,877.66 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Etke Stone Deposit	
2	Lessee:	:	M/s H G Infra Engineering Limited Assistant Vice President - Sri Sujit Prakash Shankar Dayal Corporate Office Address - 3rd Floor, Sheel Mehar Plaza, A-1, Tilak Marg, C-Scheme, Jaipur - 302001, Rajasthan Current Address - Village - Bagiyari, P.O. - Tangtona, Thana - Kasmar, Dist - Bokaro	
3	Lease Address	:	Mouza - Etke, Thana - Peterwar, District - Bokaro, State- Jharkhand	
4	Lease Area	:	0.80 ha.	Acres-1.97 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 40 Lakhs	
7	EMP Budget	:	Capital: Rs. 13.17 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	60,911.09 cum	1,70,551.06 tone
10	Mine Life	:	3 years	
11	Man power	:	40	
12	Water Requirement	:	9.50 KLD (Drinking: 0.40 KLD, Dust Suppression: 5.07 KLD, Plantation: 4.03 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	200 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Damodar River, approx. 12.00 km towards NW direction.	
17	Nearest Habitation	:	Ekte approx. 0.60 km SE direction of mine site.	
18	Nearest Railway Station	:	Harubera Railway station, approx. 13.33 km towards South West direction	
19	Nearest Airport	:	Bakaro Airport, approx. 31.90 km towards East direction.	
20	Nearest Forest	:	Fairy dense jungle approx. 1.60 km towards South direction of mine	

			site.
21	Road & Highways	:	NH 320, Approx.3.50 km towards West direction.

CO-ORDINATES

Latitude– N 23°35'32.90100" to N 23°35'36.87230"
Longitude–E 85°50'32.84743" to E 85°50'36.81946"

LAND DETAILS

Khata no.	Plot no.
06	142 (P) & 167 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Bokaro vide memo no. 1026/Khanan, dated 05.07.2024.
2	CO	:	The CO, Peterwar vide letter no. 13, dated 08.01.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in Khatiyan.
3	DMO	:	DMO, Bokaro vide memo no. 1289/M, dated 28.08.2024 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 470, dated 18.03.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Bokaro Forest Division vide letter no. 460, dated 05.03.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The project is not specifically mentioned in the approved DSR of Bokaro District in Chapter 13. DMO, Bokaro vide memo no. 383/Khanan, Dated 19.03.2025 requested to consider the said project proposal as part of chapter 13 (LoI Holder list in the District) of approved District Survey Report & further requested that this project may be taken up for consideration for grant of EC.

			The Committee accepted the request of the DMO, Bokaro.
7	Gram Sabha	:	BDO, Peterwar vide letter no. 1012, dated 15.06.2024 informed that Gram Sabha conducted on 12.06.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Bokaro vide Memo No. 1339/M, dated 16.09.2024.
9	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method.	
2	Quarry Area	:	0.80 Ha. or 1.97 Acre	Life of Mine – 3 years
3	Waste Generation	:	Total 3170.44 cum waste shall be generated during the plan period.	
4	Stripping Ratio	:	1: 0.2	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	388 AMSL to 392 AMSL	
8	Ground Level Elevation	:	384 AMSL	
9	Ultimate Working Depth	:	368 AMSL (16 m bgl)	
10	Water Table	:	355 -350 AMSL (29-34 m bgl)	
11	Topography of Mine	:	Area represents a small hillock.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	130 litre/day	

Production detail and waste generation

Year	Removal of Gritty Soil		Intercalated waste in cum	Production of Stone		Bench Height
	in cum	in tones		in cum	in tones	
1st	1682.20	2523.30	1066.02	20,254.32	56,712.10	386 AMSL-380 AMSL
2nd	Nil	Nil	1069.13	20,313.45	56,877.66	386 AMSL-374 AMSL
3rd	637.12	955.68	1035.29	19,670.57	55,077.59	374 AMSL-368 AMSL
Total	**2319.32**	**3478.98**	3170.44	**60,238.34**	**1,68,667.35**	-

Land Use

Pattern of Utilization	Existing (Ha)	At the End of Plan Period (In Ha.)	At the End of Mine (In Ha.)	Conceptual Period (In Ha.)	
				Water Body	Plantation
Quarry	Nil	0.53 (including backfilling and stone pitching wall 0.05ha.)	0.53 (including backfilling and stone pitching wall 0.05ha.)	0.53	--
Safety Zone	Nil	0.27 (plantation)	0.27 (plantation)	---	0.27
Road	0.05	Nil	Nil	---	
Total area in use	**0.05**	**0.80**	**0.80**	**0.53**	**0.27**
Balance Unused Area	0.75	Nil	Nil	---	---
Total Applied Area	**0.80**	**0.80**	**0.80**	**0.80**	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.27 ha	675
2	Along Approach Road	:	620 m	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.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000

2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	14,000 8,000 8,000 7,000
3	Plantation	10,07,500	1,00,000
4	Construction and maintenance of haul roa	3,10,000	1,50,000
TOTAL		13,17,500	4,87,000

*Note: *2015 plants * 500 Rs (for each plants including hedges and fences) = Rs. 10.075 lakhs*

*Salary of Labor for haul road maintenance 1 labor*300 =300 per day*

*300*300 = 90000/- or 150000/- (including maintenance)*

*5.0 lakh per kilometer (500000 * 0.62 km haul road = 3,10,000/-)*

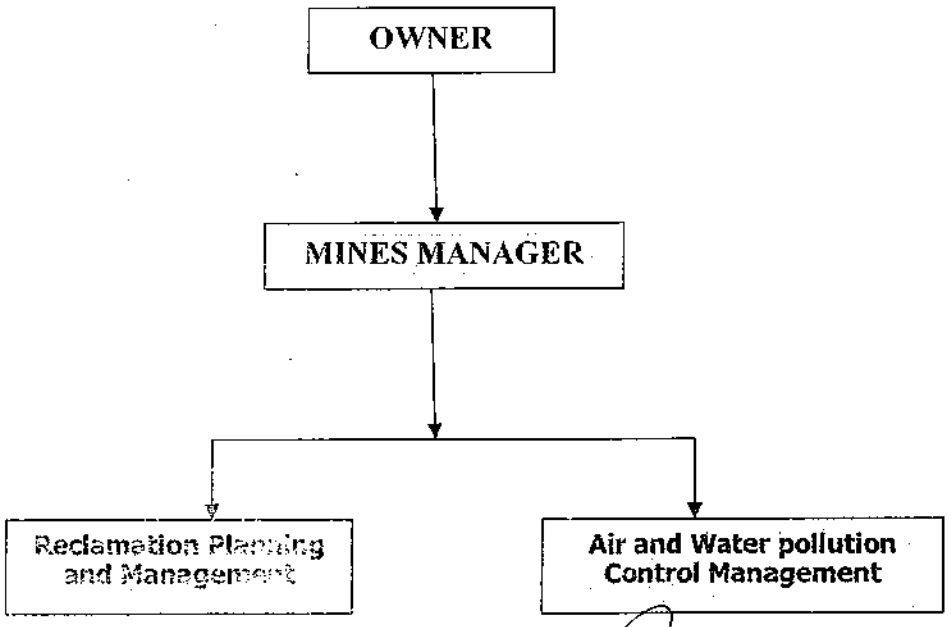
Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

Total 3170.44 CUM waste generated during this mining plan period, so there is no requirement of waste dumping Plan for this period because it is used for village & haul road maintenance.

Organization Structure



Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.

L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

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, injuryor system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	**3**	**2**	**1**
C2 (Major)	10	8	6	**4**	**2**
C3 (Moderate)	*15*	12	9	6	**3**
C4 (Minor)	*20*	*16*	12	8	**4**
C5 (Insignificant)	*25*	*20*	*15*	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	**High Risk**	**1-4**
2	Medium Risk	5-12
3	*Low Risk*	*13-25*

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5

2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work

in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine

- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.

- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

I. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Etke Stone Deposit of M/s H.G. Infra Engineering Limited, Village : Etke, Thana : Peterwar, Distt. : Bokaro, Jharkhand (0.80 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). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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13. Gengara Stone Mine by M/s Triveni Engicons Pvt. Ltd. (Director : Shri Anand Dodrajka), Village : Gengara, Thana : Patamda, Distt. : East Singhbhum, Jharkhand (4.653 Ha).

(Proposal no.: SIA/JH/MIN/ 526491 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

Application for Environmental Clearance (EC) (re-appraisal of Environment Clearance issued by DEIAA, East Singhbhum).

The project has been granted EC by DEIAA, East Singhbhum, Jamshedpur vide memo no. 3270/A, dated 26.08.2017.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, East Singhbhum which has been taken up for consideration on 27.03.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 92/Khanan, dated 29.01.2025 by DMO, East Singhbhum, Jamshedpur is within the permissible limit of EC.

The compliance report of previous EC has been issued by Member Secretary, JSPCB, Ranchi vide memo no. 381, dated 11.03.2025.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.

The self certified compliance report has been submitted and also presented before the Committee.

EC Application for: Proposed Capacity- 87037.11 cum/annum or 217592.78 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Gengara Stone Mine	
2	Lessee:	:	M/s Triveni Engicons Pvt. Ltd. Director - Shri Anand Dodrajka	
3	Lease Address	:	Village -- Gengara, Thana – Patamda, District – East Singhbhum, State- Jharkhand.	
4	Lease Area	:	4.653 ha	Acres- 11.50 Acres
5	Type of Land	:	Non-Forest (Pvt. Raiyati Land)	
6	Project Cost	:	Rs. 140 lakhs	
7	EMP Budget	:	Capital: Rs. 8.30 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New (Re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	317298.31 cum	793245.78 tons
10	Mine Life	:	Upto the lease period i.e. 26.09.2017 to 25.09.2027.	
11	Man power	:	30	
12	Water Requirement	:	9.06 – 10.00 KLD (Drinking: 0.30 KLD, Dust Suppression: 6.48 KLD, Plantation: 2.28 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Sona Nadi, Approx. 4.70 km towards NW direction of mine site.	
17	Nearest Habitation	:	Gengara village, Approx. 0.26 km in South direction.	
18	Nearest Railway Station	:	Nimdih Railway Station, approx. 30.50 km towards West direction.	
19	Nearest Air Port	:	Birsa Munda Airport, Ranchi, approx. 120.40 km towards WNW direction.	
20	Nearest Forest	:	Open Mixed Jungle, Approx. 2.00 km towards East direction of mine site.	
21	Road & Highways	:	NH-18, Approx. 22.50 km. in SW direction.	

CO-ORDINATES

1	Latitude	:	From 22°58'03.4610 "N	To 22°58'09.84140" N
2	Longitude	:	From 86°26'16.29858" E	To 86°26'29.95790" E

LAND DETAILS

Khata no.	Plot no.
416	2057 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed : 26.09.2017 to 25.09.2027.
2	CO	:	The CO, Patamda vide letter no. 567, dated 02.11.2015 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan.
3	DMO	:	DMO, East Singhbhum, Jamshedpur vide memo no. 127/Khanan, dated 08.02.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Dalma Elephant Project vide letter no. 52, dated 09.01.2025 certified that the proposed project site is outside Eco Sensitive Zone of Dalma Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Jamshedpur Forest Division vide letter no. 4014, dated 28.11.2015 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of East Singhbhum, Jamshedpur District (Sl. no. 47, Page no. 32).
7	Gram Sabha	:	Gram Sabha conducted on 02.01.2017.
8	Scheme / Mine Plan Approval	:	i. Mining plan approved by DMO, East Singhbhum, Jamshedpur vide memo no. 9711, Dated 19.12.2015. ii. Mining scheme approved by Additional Director, Geology, Hazaribag vide letter G/2022-23-121, dated 13.07.2022. iii. Mine plan approved by DMO, East Singhbhum, Jamshedpur vide letter no. 1053/Khanan, Dated 24.12.2024.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, East Singhbhum, Jamshedpur vide memo no. 3270/A, dated 26.08.2017.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by Member Secretary, JSPCB, Ranchi vide memo no. 381, dated 11.03.2025.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2213531/ 2018/576, dated 29.05.2018.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/RO/JSR/CTO-15933607 /2023/34, dated 06.05.2023.

13	Production Report	:	Production report issued by DMO, East Singhbhum, Jamshedpur vide memo no. 92/Khanan, dated 29.01.2025.
14	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 Mechanized Method	
2	Quarry Area	:	4.653 ha. or 11.50 Acres	Life of Mine – Upto the lease period i.e. 26.09.2017 to 25.09.2027.
3	Waste Generation	:	Total 10649.52 cum of waste will be generated during the plan period.	
4	Stripping Ratio	:	01:0.4	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	240 AMSL to 250 AMSL	
8	Ground Level Elevation	:	240 AMSL	
9	Ultimate Working Depth	:	235 AMSL	
10	Water Table	:	220 AMSL (20 mbgl)	
11	Topography of Mine	:	The applied area represents hillocks topography.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	140 litre/day	

Production Details

Year	Production of Stone in Cum	Production of Stone in Tons	Total Waste in cum	Bench AMSL
1st Year	42351.00	105877.50	2229.00	247-241
2nd Year	79990.00	199975.00	4210.00	241-235
3rd Year	79999.50	199998.75	4210.52	241-235
Total	**202340.5**	**505851.25**	**10649.52**	

Year	Proposed Production of EC in Tons
1st	199999.93
2nd	199999.93

3rd	199999.93
4th	199999.93
5th	217592.78
Total	**1017592.5**

As per approved mine plan production: - 79999.50 cum/annum or 199998.75 TPA.
As per EC letter production: - 87037.11 cum/annum or 217592.78 TPA.

Land Use

Category	Present Land Use (in Ha)	At the end of plan period (in Ha)	At the end of Mine (in Ha)
Quarry	2.007	3.500	3.974 (0.66 are backfilled and 3.314 area will converted as water reservoir)
Stock	0.215	0.215	0.000
Road	0.285	0.18	0.007
Safety Barrier	0.672 (Plantation)	0.672 (Plantation)	0.672 (Plantation)
Total area in use	**3.179**	**4.567**	**4.653**
Balanced Unused Area	1.474	0.086	0.00
Total Lease area	**4.653**		

ENVIRONMENT MANAGEMENT
Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.672 ha	1803 (Already done during previous year of mining)
2	Along Approach Road	:	520 m	1040
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

Note: A total of 2820 saplings were proposed to be planted. Out of which 1680 plant in Safety Zone area have been planted during previous year of mining.
(1040 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 1140 Plants).

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	 14,000 8,000 8,000 7,000
3	Plantation	5,70,000	1,00,000
4	Construction and maintenance of haul road	2,60,000	1,50,000
TOTAL		**8,30,000**	**4,87,000**

*Note: *1140 plants * 500 Rs (for each plants including hedges and fences) = 5.70 Lakhs*
A total of 2820 saplings were proposed to be planted. Out of which 1680 plant in Safety Zone area have been planted during previous year of mining.
(1040 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 1140 Plants).
*Salary of Lahor for haul road maintenance 1 labor*300 =300 per day*
300 300 = 90000/- or 1,50,000/-(including maintenance)*
** 5.0 lakh per kilometer (500000 * 0.52 km haul road = 2,60,000/-)*

Environment Monitoring Programme

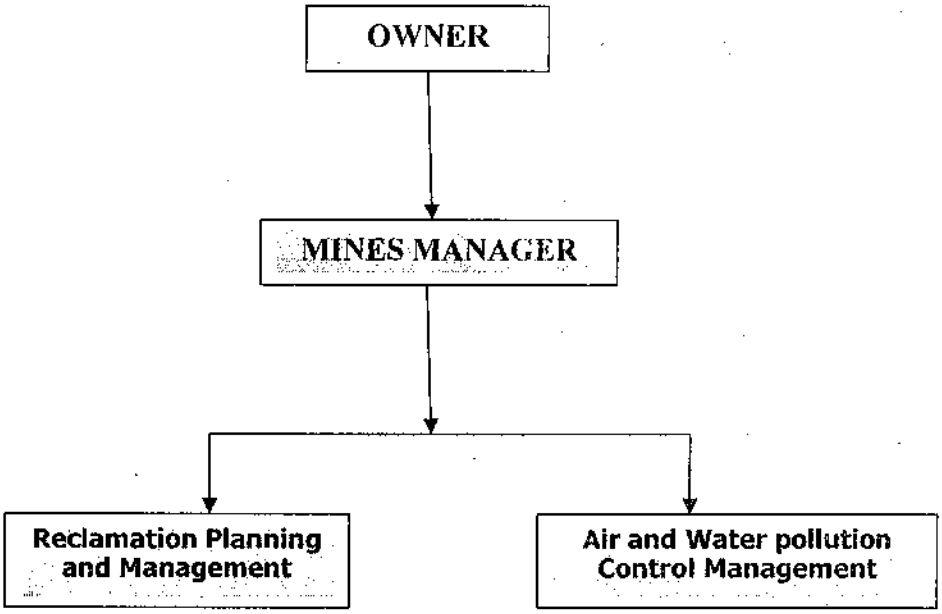
Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly

4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

Total 10649.52 cum of waste will be generated during the plan period. The waste generated during the course of mining operation is proposed to use for the purpose to making and maintaining the approach road and village road.

Organization Structure



Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.

- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.

C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injuryor 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
- 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, 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 Gengara Stone Mine by M/s Triveni Engicons Pvt.

Ltd. (Director : Shri Anand Dodrajka), Village : Gengara, Thana : Patamda, Distt. : East Singhbhum, Jharkhand (4.653 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. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.

II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"Ek Ped Ma Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

****

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14. Raidih Stone Deposit by M/s Leading Construction (Prop. : Shri Jai Prakash Singh), Village : Raidih, Thana : Saraikela, Distt. : Saraikela-Kharsawan, Jharkhand (2.16 Ha).

(Proposal no.: SIA/JH/MIN/ 526774 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

Application for Environmental Clearance (re-appraisal of Environment Clearance issued by DEIAA, Saraikela - Kharsawan).

The project has been granted EC by DEIAA, Saraikela - Kharsawan vide letter no. EC/DEIAA/Saraikela/2016-17/28/DEIAA, dated 17.10.2016.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Saraikela - Kharsawan which has been taken up for consideration on 27.03.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-56/ $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 1043/M, dated 15.10.2024 by DMO, Saraikela - Kharsawan is within the permissible limit of EC.

The compliance report of previous EC has been issued by Member Secretary, JSPCB, Ranchi vide ref. no. 916, dated 26.03.2025.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.

The self certified compliance report has been submitted and also presented before the Committee.

EC Application for: **Proposed Capacity- 43387.93 cum/annum or 125825 TPA.**

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Raidih Stone Deposit	
2	Lessee:	:	M/s Leading Construction, Proprietor- Sri Jai Prakash Singh	
3	Lease Address	:	Village – Raidih, Thana – Saraikela, District –Saraikela-kharsawan, State- Jharkhand.	
4	Lease Area	:	2.16 ha	Acres- 5.34 Acres
5	Type of Land	:	Non-Forest (Pvt. Raiyati Land)	
6	Project Cost	:	Rs. 120 lakhs	
7	EMP Budget	:	Capital: Rs. 5.50 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New (Re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	432952.06 cum	1255561 tons
10	Mine Life	:	Upto the lease period i.e. 17.08.2017 to 16.08.2027.	
11	Man power	:	42	
12	Water Requirement	:	5.87 ~ 6.00 KLD (Drinking: 0.42 KLD, Dust Suppression: 4.05 KLD, Plantation: 1.40 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Kharkai River, Approx. 1.4 km towards ESE direction of mine site.	
17	Nearest Habitation	:	Jharidih village, Approx. 0.36 km in SE direction.	
18	Nearest Railway Station	:	Gamharia Junction, approx. 10.50 km towards NE direction.	
19	Nearest Air Port	:	Birsa Munda Airport, Ranchi, approx. 99.50 km towards NW direction.	
20	Nearest Forest	:	Protected Forest, Approx. 2.30 km towards NW direction of mine site. Protected Forest Approx. 2.35 km towards SE direction of mine site.	
21	Road & Highways	:	NH-43, approx. 6.02 km towards NW direction.	

CO-ORDINATES

1	Latitude	:	From 22°43'20.39 " N	To 22°43'24.97" N
2	Longitude	:	From 86°02'09.44" E	To 86°02'17.10" E

LAND DETAILS

Khata no.	Plot no.
37	117

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed 17.08.2017 to 16.08.2027.
2	CO	:	The CO, Saraikela vide letter no. 273, dated 01.04.2016 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan.
3	DMO	:	DMO, Saraikela - Kharsawan vide letter no. 1173/M, dated 03.12.2024 certified that 01 other mining lease area (4.98 Acre) exists within 500 meters radius from proposed project site and total area is 10.32 Acre.
4	DFO Wild Life	:	DFO, Dalma Elephant Project vide letter no. 5117, dated 26.12.2024 certified that the proposed project site is outside Eco Sensitive Zone of Dalma Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Saraikela Forest Division, Saraikela vide letter no. 608, dated 29.03.2016 certified that the distance of forest land is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Saraikela-Kharsawan District (Sl. No. 33, Page no. 34).
7	Gram Sabha	:	Gram Sabha conducted on 29.02.2016.
8	Scheme / Mine Plan Approval	:	i. Mining plan approved by AMO, Saraikela-Kharsawan vide letter no. 1940, dated 21.07.2016. ii. Mining scheme approved by Additional Director, Geology, Hazaribag vide memo no. 356/G, dated 29.10.2022.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Saraikela-Kharsawan vide letter no. EC/DEIAA/Saraikela/2016-17/28/DEIAA, dated 17.10.2016.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by Member Secretary, JSPCB, Ranchi vide ref. no. 916, dated 26.03.2025.
.....Y 11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide ref. no. JSPCB/HO/RNC/CTE-1860999/2017/763, dated 12.12.2017.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/RO/JSR/CTO-14767936/2022/126, dated 19.12.2022.
13	Production	:	Production report issued by DMO, Saraikela-Kharsawan vide memo no. 1043/M, dated 15.10.2024.

	Report		
14	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mining plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast mechanized mining method	
2	Quarry Area	:	2.16 ha. or 5.34 Acres	Life of Mine – Upto the lease period i.e. 17.08.2017 to 16.08.2027.
3	Waste Generation	:	Total 7734 tons of waste (weathered rock) will be generated during the plan period.	
4	Stripping Ratio	:	01:0.06	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	146 AMSL to 160 AMSL	
8	Ground Level Elevation	:	148 AMSL	
9	Ultimate Working Depth	:	100 AMSL	
10	Water Table	:	94-83AMSL (54-65 mbgl)	
11	Topography of Mine	:	The applied area represents hillocks with gentle slope land with rock mass of dolerite.	
12	Explosive Requirement	:	100 kg/day	
13	Diesel/Fuel requirement	:	130 litre/day	

Production Details

Year	Production in EC In Tons	Production of Stone in Cum	Production of Stone in Tons	Removal of weathered Rock in Tons	Bench AMSL
1st Year	125370	43231.03	125370	6759	162-148
2nd Year	125474	43266.89	125474	975	154-142
3rd Year	125490	43272.41	125490	000	148-142
4th Year	125825	43387.93	125825	000	142-130
5th Year	125109	43141.03	125109	000	136-112
Total	**627268**	**216299.3**	**627268**	**7734**	

As per approved mine plan production: - 43387.93 cum/annum or 125825 TPA.
As per EC letter production: - 43387.93 cum/annum or 125825 TPA.

Land Use

Category	Present Land Use (in Ha)	At the end of plan period (in Ha)	At the end of Mine (in Ha)
Quarry	0.50	1.10	1.71 (entire area will converted as water reservoir)
Dump	0.00	0.12	0.00
Parapet wall	0.00	0.01	0.00
Garland drain	0.00	0.01	0.00
Road	0.00	0.03	0.00
Safety Barrier	0.45 (Plantation)	0.45 (Plantation)	0.45 (Plantation)
Total area in use	**0.95**	**1.72**	**2.16**
Balanced Unused Area	1.21	0.44	0.00
Total Lease area	**2.16**		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.45 ha	1125 (Already done during previous year of mining)
2	Along Approach Road	:	300 m	600
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

Note: A total of 1825 saplings were proposed to be planted. Out of which 1125 plant in Safety Zone area have been planted during previous year of mining.
(600 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 700 Plants).

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable

species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	 14,000 8,000 8,000 7,000
3	Plantation	3,50,000	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
TOTAL		**5,50,000**	**4,87,000**

*Note: *700 plants * 500 Rs (for each plants including hedges and fences) =3.50 Lakhs*
A total of 1825 saplings were proposed to be planted. Out of which 1125 plant in Safety Zone area have been planted during previous year of mining.
(600 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 700 Plants)
*Salary of Labor for haul road maintenance 1 labor*300 =300 per day*
300 300 = 90000/- or 1,50,000/-(including maintenance)*
** 5.0 lakh per kilometer (500000 * 0.30 km haul road = 1,50,000/- or 2,00,000/-)*

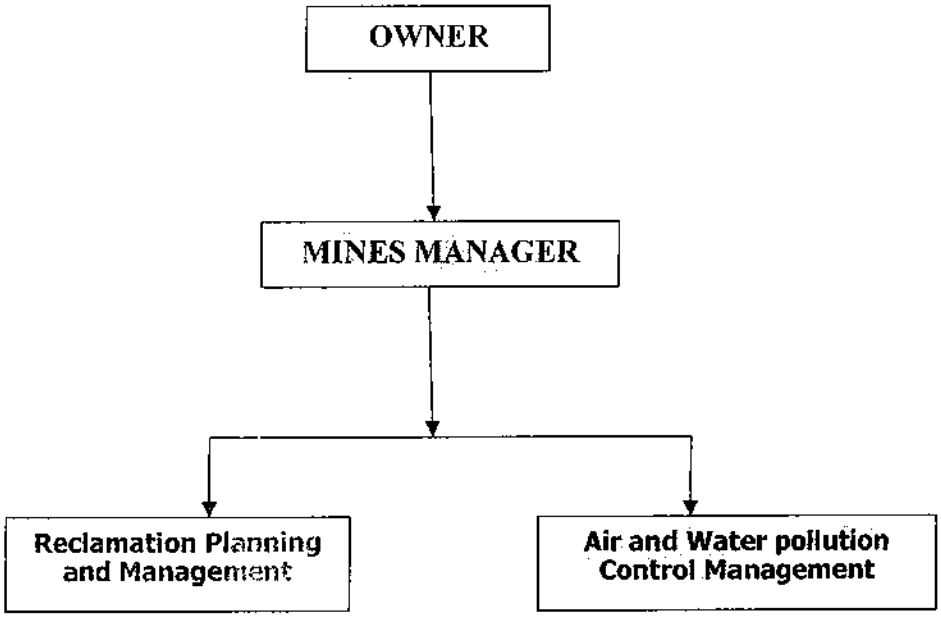
Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

Total 7734 tons of waste (weathered rock) will be generated during the plan period. During quarry development weathered rock will be removed and that will be dumped at the eastern portion of the applied area with suitable precautions.

Organization Structure



Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission

- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injuryor system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank	L5 (Very	L4 (Remote)	L3	L2	L1

(Likelihood x Consequence)	Unlikely)		(Occasional)	(Probable)	(Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.

- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.
The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.
The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.
Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.
Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.

- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.

- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling 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 Raidih Stone Deposit by M/s Leading Construction (Prop. : Shri Jai Prakash Singh), Village : Raidih, Thana : Saraikela, Distt. : Saraikela-

Kharsawan, Jharkhand (2.16 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

I. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.

II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"Ek Ped Ma Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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15. Ugma Stone Mine by M/s Hare Lal Construction Company Private Limited (Prop. : Shri Rudra Pratap Mahato), Village : Ugma, Thana : Saraikela, Distt. : Saraikela-Kharsawan, Jharkhand (2.015 Ha).

(Proposal no.: SIA/JH/MIN/ 526847 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

Application for Environmental Clearance (re-appraisal of Environment Clearance issued by DEIAA, Saraikela - Kharsawan).

The project has been granted EC by DEIAA, Saraikela - Kharsawan vide letter no. EC/DEIAA/Saraikela/2016-17/50, dated 21.03.2017.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Saraikela - Kharsawan which has been taken up for consideration on 27.03.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 1054/M, dated 19.10.2024 by DMO, Saraikela - Kharsawan is within the permissible limit of EC.

The compliance report of previous EC has been issued by Member Secretary, JSPCB, Ranchi vide ref. no. 914, dated 26.03.2025.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.

The self certified compliance report has been submitted and also presented before the Committee.

EC Application for: Proposed Capacity- 15188.88 cum/annum or 41010.00 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Ugma Stone Mine	
2	Lessee:	:	M/s Hare Lal Construction Company Private Limited Proprietor – Sri Rudra Pratap Mahato	
3	Lease Address	:	Village – Ugma, Thana – Saraikela, District – Saraikela-Kharsawan, State – Jharkhand.	
4	Lease Area	:	2.015 ha	Acres- 4.98 Acres
5	Type of Land	:	Non-Forest (Pvt. Raiyati Land)	
6	Project Cost	:	Rs. 110 lakhs	
7	EMP Budget	:	Capital: Rs. 8.00 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New (Re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	130757.74 cum	353045.92 tons
10	Mine Life	:	Upto the lease period i.e. 19.09.2017 to 18.09.2027.	
11	Man power	:	22	
12	Water Requirement	:	9.02 ~ 9.50 KLD (Drinking: 0.22 KLD, Dust Suppression: 6.60 KLD, Plantation: 2.20 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Kharkai river, Approx. 2.00 km towards East direction of mine site.	
17	Nearest Habitation	:	village, Approx. 0.37 km in WNW direction.	
18	Nearest Railway Station	:	Gamharia Junction, approx. 10.30 km towards NE direction.	
19	Nearest Air Port	:	Birsa Munda Airport, Ranchi, approx. 95.60 km towards NW direction.	
20	Nearest Forest	:	Protected Forest, Approx. 3.85 km towards ESE direction of mine site. Protected Forest, Approx. 4.10 km towards East direction of mine site. Protected Forest, Approx. 3.50 km towards West direction of mine site.	
21	Road & Highways	:	NH-43, Approx. 5.75 km. in NW direction.	

CO-ORDINATES

1	Latitude	:	From 22°42'30.20 "N	To 22°43'37.57" N
2	Longitude	:	From 86°02'0.80" E	To 86°02'11.47" E

LAND DETAILS

Khata no.	Plot no.
38	207, 208 (P) & 219 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed 19.09.2017 to 18.09.2027.
2	CO	:	The CO, Saraikela vide letter no. 806, dated 01.09.2016 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan.
3	DMO	:	DMO, Saraikela - Kharsawan vide letter no. 1170/M, dated 03.12.2024 certified that 01 other mining lease area (5.34 Acre) exists within 500 meters radius from proposed project site and total area is 10.32 Acre.
4	DFO Wild Life	:	DFO, Dalma Elephant Project vide letter no. 5115, dated 26.12.2024 certified that the proposed project site is outside Eco Sensitive Zone of Dalma Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Saraikela Forest Division, Saraikela vide letter no. 1937, dated 15.09.2016 certified that the distance of forest land is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Saraikela-Kharsawan District (Sl. No. 69, Page no. 46).
7	Gram Sabha	:	Gram Sabha conducted on 17.04.2016.
8	Scheme / Mine Plan Approval	:	Mining plan approved by AMO, Saraikela-Kharsawan vide letter no. 2639, dated 23.11.2016.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Saraikela-Kharsawan vide letter no. EC/DEIAA/Saraikela/2016-17/50, dated 21.03.2017.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by Member Secretary, JSPCB, Ranchi vide ref. no. 914, dated 26.03.2025.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide ref. no. JSPCB/HO/RNC/CTE-1937995/2018/122, dated 03.02.2018.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/RO/JSR/CTO-7978582/2020/33, dated 25.04.2020.
13	Production Report	:	Production report issued by DMO, Saraikela-Kharsawan vide memo no. 1054/M, dated 19.10.2024.
14	Qualified Person	:	Shri G.S. Jaiswal through e-mail dated 27.03.2025 affirmed that the mining plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast other than fully mechanized Mining method	
2	Quarry Area	:	2.015 ha. or 4.98 Acres	Mine life : Upto the lease period i.e. 19.09.2017 to 18.09.2027.
3	Waste Generation	:	Total 3995.814 cum waste will be generated during the plan period.	
4	Stripping Ratio	:	01:0.2	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	208 AMSL to 220 AMSL	
8	Ground Level Elevation	:	208 AMSL	
9	Ultimate Working Depth	:	200 AMSL	
10	Water Table	:	194-183AMSL (26-37 mbgl)	
11	Topography of Mine	:	The applied area represents hillocks with gentle slope land with rock mass of dolerite.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	140 litre/day	

Production Details

Year	Production in EC In Tons	Production of Stone in Cum	Production of Stone in Tons	Total Waste in cum	Bench AMSL
1st Year	40693.73	15184.68	40998.65	799.194	220-212
2nd Year	40937.00	15183.85	40996.40	799.150	218-206
3rd Year	40820.44	15184.00	40996.81	799.158	206-202
4th Year	40839.00	15183.84	40996.37	799.149	210-200
5th Year	41010.00	15184.09	40997.06	799.163	221-212
Total	**204300.17**	**75920.46**	**204985.29**	**3995.814**	

As per approved mine plan production: - 15184.68 cum/annum or 40998.65 TPA
As per EC letter production: - 15188.88 cum/annum or 41010.00 TPA.

Land Use

Pattern of Utilization	Existing Land Use (in Ha)	At the end of scheme period (in Ha)	At Conceptual period (in ha)
Excavation	0.914	1.128	1.294 (Entire area shall be left as water reservoir)

Waste Dump	-	-	-
Road	0.058	0.044	-
Safety Zone	0.721 (Plantation)	0.721 (Plantation)	0.721 (Plantation)
Total area in use	**1.693**	**1.893**	**2.015**
Balanced Unused Area	0.322	0.122	-
Total Lease Area	**2.015**	**2.015**	**2.015**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.721 ha	1803 (Already done during previous year of mining)
2	Along Approach Road	:	500 m	1000
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

Note: A total of 2903 saplings were proposed to be planted. Out of which 1803 plant in Safety Zone area have been planted during previous year of mining.
(1000 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 1100 Plants).

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000

2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	 14,000 8,000 8,000 7,000
3	Plantation	5,50,000	1,00,000
4	Construction and maintenance of haul road	2,50,000	1,50,000
TOTAL		**8,00,000**	**4,87,000**

*Note: *1100 plants * 500 Rs (for each plants including hedges and fences) = 5.50 Lakhs*
A total of 2903 saplings were proposed to be planted. Out of which 1803 plant in Safety Zone area have been planted during previous year of mining.
(1000 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 1100 Plants)
*Salary of Labor for haul road maintenance 1 labor*300 =300 per day*
300 300 = 90000/- or 1,50,000/-(including maintenance)*

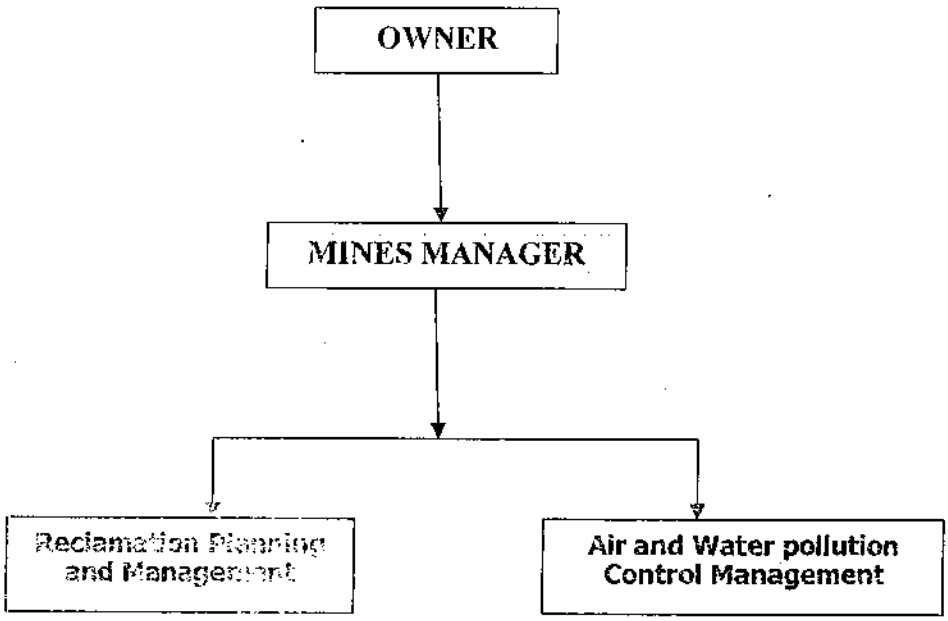
Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

Total 3995.814 cum of waste will be generated during the plan period. Waste will be used for maintaining approach road for the frequent movement of machinery etc.

Organization Structure



Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.

L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injuryor system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	*15*	12	9	6	3
C4 (Minor)	*20*	*16*	12	8	4
C5 (Insignificant)	*25*	*20*	*15*	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	*Low Risk*	*13-25*

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5

2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container

- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.

- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling 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 Ugma Stone Mine by M/s Hare Lal Construction Company Private Limited (Prop. : Shri Rudra Pratap Mahato), Village : Ugma, Thana : Saraikela, Distt. : Saraikela-Kharsawan, Jharkhand (2.015 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. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.

II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"Ek Ped Ma Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

****

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16. Laharjori Stone Deposit by M/s Agrima Infra Engineering Pvt. Ltd. (Director : Shri Rahul Kumar), Mouza : Laharjori, Thana : Madhupur (Karon), Distt. : Deoghar, Jharkhand (4.82 Ha).

(Proposal no.: SIA/JH/MIN/ 503413 /2024)

Name of the consultant : P & M Solution, Noida, U.P.

Application for Environmental Clearance (re-appraisal of Environment Clearance issued by DEIAA, Deoghar).

The project has been granted EC by DEIAA, Deoghar vide letter no. 05, dated 19.04.2017.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Deoghar which has been taken up for consideration on 27.03.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 580/M, dated 09.07.2024 by DMO, Saraikela - Kharsawan is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide memo no. 2244, dated 03.12.2024.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.

The self certified compliance report has been submitted and also presented before the Committee.

EC Application for: Proposed Capacity- 118610 cum/annum or 320247 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Laharjori Stone Deposit	
2	Lessee:	:	M/s Agrima Infra Engineering Pvt. Ltd. Director - Sri Rahul Kumar	
3	Lease Address	:	Mouza - Laharjori, Thana - Madhupur (Karon), District – Deoghar, State- Jharkhand	
4	Lease Area	:	4.82 ha	Acres- 11.90 Acres
5	Type of Land	:	Non-Forest (G.M. Land)	
6	Project Cost	:	Rs. 1.40 cr.	
7	EMP Budget	:	Capital: Rs. 12.80 Lakhs	Recurring: 6.87 Lakhs / year
8	New or Expansion	:	New (Re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	3054412.50 tons	1131263.88 cum
10	Mine Life	:	Upto the lease period i.e. 21.05.2017 to 20.05.2027.	
11	Man power	:	32	
12	Water Requirement	:	16.22~ 16.50 KLD (Drinking: 0.32 KLD, Dust Suppression: 8.67 KLD, Plantation: 7.23 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Jayanti River, Approx. 9.90 km towards West direction of mine site.	
17	Nearest Habitation	:	Approx. 30 m in SSW direction	
18	Nearest Railway Station	:	Madankata Railway station, approx. 9.29 km towards ENE direction.	
19	Nearest Air Port	:	Deoghar Airport, Jharkhand approx. 35.02 km towards NNE direction.	
20	Nearest Forest	:	Protected Forest, Approx. 4.50 km towards South direction of mine site.	
21	Road & Highways	:	NH-114A, Approx. 13.63 km. in NNE direction.	

CO-ORDINATES

1	Latitude	:	From N 24°08'18.65"	To N 24°08'18.02"
2	Longitude	:	From E 86°36'52.16"	To E 86°37'05.06"

LAND DETAILS

Plot no.
1697 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed 21.05.2017 to 20.05.2027.
2	CO	:	The CO, Margomunda vide letter no. 69/Ra., dated 12.03.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Deoghar vide memo no. 298/M, dated 20.03.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 890, dated 17.05.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Deoghar Forest Division vide letter no. 3036, dated 21.12.2015 certified that the distance of forest land is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Deoghar District (Sl. No. 07, Page no. 26).
7	Gram Sabha	:	i. Gram Sabha conducted on 04.01.2016. ii. BDO, Margomunda vide letter no. 341/Vi. Dated 29.02.2024 informed that Gram Sabha conducted on 26.02.2024.
8	Scheme / Mine Plan Approval	:	i. Mining plan approved by AMO, Deoghar vide memo no. 1937, dated 04.11.2015. ii. Mining scheme approved by Additional Director, Geology, Hazaribag vide letter no. G/2022-23-98, dated 24.06.2022.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Deoghar vide letter no. 05, dated 19.04.2017.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide memo no. 2244, dated 03.12.2024.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide ref. no. JSPCB/HO/RNC/CTE-1664130/2017/632, dated 09.11.2017.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/RO/DMK/CTO-16224229/2023/112, dated 15.06.2023.

13	Production Report	:	Production report issued by DMO, Deoghar vide memo no. 580/M, dated 09.07.2024.
14	Qualified Person	:	Shri Tapan Kumar Chakravarty through e-mail dated 26.03.2025 affirmed that the mining scheme has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi-mechanized mining method	
2	Quarry Area	:	4.82 hectare or 11.90 Acres	Life of Mine – Upto the lease period i.e. 21.05.2017 to 20.05.2027.
3	Waste Generation	:	13600 m^3	
4	Stripping Ratio	:	1:0.1	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	281 AMSL to 291 AMSL	
8	Ground Level Elevation	:	281 AMSL	
9	Ultimate Working Depth	:	223 AMSL (58 mbgl)	
10	Water Table	:	210-212 AMSL (69- 71 mbgl)	
11	Topography of Mine	:	Area represents is gently rising.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	140 litre/day	

Production Details

Year	Production in EC (tons)	Production of Stone in Tonnes	Production of Stone in Cum	Bench in AMSL
1st	319340	319340.00	118274.07	292-283
2nd	319391	319391.00	118292.96	283-277
3rd	319307	319307.00	118261.85	277-271
4th	319394	319394.00	118294.07	271-265
5th	320247	320247.00	118610.00	265-253
Total	**1597679**	**1597679.00**	**1654032.95**	

As per approved mine plan production: - 118610.00 cum/annum or 320247.00 TPA.
As per EC letter production: - 118610.00 cum/annum or 320247.00 TPA.

Land Use

Pattern of Utilization	Existing Land Use (in Ha)	After End of Scheme period (in Ha)	After life of Mine (in Ha)
Quarry	0.44	3.07	4.07 (entire area shall be left as

			water reservoir)
Road	0.07	Comes under Quarry	Comes under Quarry
Safety Zone	0.75 (Plantation)	0.75 (Plantation)	0.75 (Plantation)
Proposed Dump	---	0.48	---
Proposed Crusher		0.04	---
Total area in use	**1.26**	**4.34**	**4.82**
Balanced Area	3.56	0.48	00.0
Total Lease area	**4.82**	**4.82**	**4.82**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.75 ha	1875 (Already done during previous year of mining)
2	Along Approach Road	:	820 m	1640
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

Note: A total of 3615saplings were proposed to be planted. Out of which 1875 plant in Safety Zone area have been planted during previous year of mining.
(1640 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 1740 Plants)

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	4,00,000

2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	14,000 8,000 8,000 7,000
3	Plantation	8,70,000	1,00,000
4	Construction and maintenance of haul road	4,10,000	1,50,000
TOTAL		**12,80,000**	**6,87,000**

Note: *1740 plants * 500 Rs (for each plants including hedges and fences) = 8.70 Lakh
A total of 3615 saplings were proposed to be planted. Out of which 1875 plant in Safety Zone area have been planted during previous year of mining.
(1640 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 1740 Plants)
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/- or 1,50,000/-(including maintenance)
* 5.0 lakh per kilometer (500000 * 0.82 km haul road = 4,10,000/)

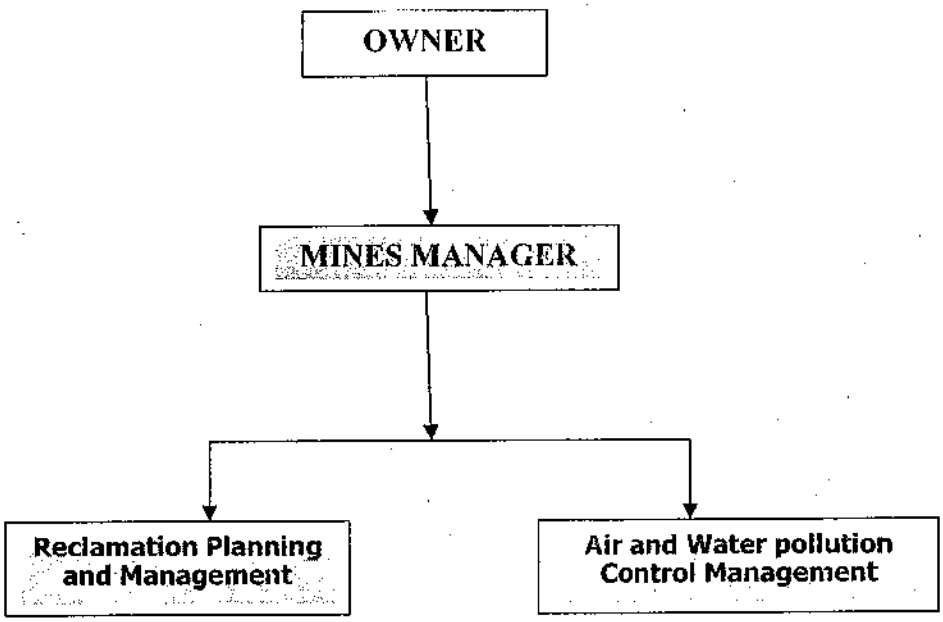
Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

Total 13600.00 cum waste which shall be proposed to dump (Average Area 4865.00m2 & Average Height 2.80m) temporarily on the western side of the applied area which is shown in Development plan & sections. In ultimate stage 17600.00 cum waste generated which is used for village & haul road maintenance.

Organization Structure



Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.

- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

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, injuryor system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1	5	4	3	2	1

(Catastrophic)					
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**"

<u>Preventive Measures:</u>

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 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 Laharjori Stone Deposit by M/s Agrima Infra Engineering Pvt. Ltd. (Director : Shri Rahul Kumar), Mouza : Laharjori, Thana : Madhupur (Karon), Distt. : Deoghar, Jharkhand (4.82 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. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.
II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"Ek Ped Ma Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.
III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to. submitted along with 6 monthly compliance.

VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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17. Dhatapara Stone Mine of Partners : Shri Rajkumar Kispotta and Shri Rubal Singh Gill, Village : Dhatapara, Anchal : Barharwa, Distt. : Sahibganj, Jharkhand (2.233 Ha).

(Proposal no.: SIA/JH/MIN/ 530535 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 27.03.2025.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA Notification, 2006.

TOR Application for: Proposed Capacity- 38903 cum/year or 105037 TPA.

Project and Location Details :

Sl	Parameter		Details
1	Project Name	:	Dhatapara Stone Mine
2	Lessee:	:	Sli Rajkumar Kispotta & Sri Rubal Singh Gill
3	Lease Address	:	Village – Dhatapara , P.S- Barharwa

			District – Sahibganj, State- Jharkhand	
4	Lease Area	:	2.233 Ha	Acres- 5.52 Acres
5	Type of Land	:	Non- Forest (Raiyati Land)	
6	Project Cost	:	Rs. 50 Lakhs	
7	EMP Budget	:	Capital: Rs. 6.666 lakhs	Recurring: Rs. 4.27 Lakh / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 361921.48 cum	Tonnes: 977188 tons
10	Mine Life	:	9.3 or 10 years	
11	Man power	:	17	
12	Water Requirement	:	10.83~11.00 KLD (Drinking: 0.17 KLD, Dust Suppression: 5.065 KLD, Plantation: 5.6 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Gumani Nadi, approx. 1.85 km in N direction.	
17	Nearest Habitation	:	Approx. 0.21 km	
18	Nearest Rail Station	:	Kotalpukur Junction Railway Station, approx.3.78 km. in SE direction .	
19	Nearest Air Port	:	Deoghar Airport, approx. 116.75 km, in WSW direction	
20	Nearest Forest	:	Protected Forest , Approx. 2.5 km. Protected Forest , Approx. 3.5 km..	
21	Road & Highways	:	NH- 133 A - Approx. 6.14 km in West direction.	

CO-ORDINATES

1	Latitude	From N 24° 45' 54.665"	To N 24° 46' 5.227"
2	Longitude	From E 87° 47' 50.030"	To E 87° 47' 55.986"

LAND DETAILS

Khata no.	Plot no.
01, 05, 16, 27, 37 & 72	337, 338, 340, 326 (P), 323, 324, 325, 297, 304, 307, 298, 335, 336 & 341

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 143/M, dated 04.02.2025.
2	CO	:	The CO, Barharwa vide letter no. 415/Ra., dated 03.07.2020 has mentioned the plot no. of the project is not recorded as "Jungle-

			Ihari" in R.S. Khatiyan & Register II.
3	DMO Cluster & Grid certificate	:	DMO, Sahibganj vide memo no. 486/M, dated 18.03.2025 certified that 03 other mining lease area (4.54 Acre, 6.00 Acre & 6.00 Acre) exists within 500 meters radius from proposed project site and total area is 22.06 Acre and also certified that the proposed project site is outside of Redzone Grid 1,3,4 & 7.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1400, dated 13.08.2020 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide letter no. 2152, dated 15.09.2020 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Sahibganj has been certified vide memo no. 558/M, dated ~~22.03.2025~~ 25.03.2025 that this project is mentioned in approved DSR of Dumka District as a potential area (Page no. 195).
7	Gram Sabha	:	Gram Sabha conducted on 14.02.2020.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 485/M, dated 18.03.2025.
9	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi Mechanized Method	
2	Quarry Area	:	2.233 ha	Life of Mine – 9.3 or 10 years
3	Waste Generation	:	Total 45195 cum waste generated during the plan period	
4	Stripping Ratio	:	1: 1.1	
5	Working Days	:	300	
6	Benches: size & No	:	6m to 6m	
7	Elevation of Mine	:	53 AMSL to 56 AMSL	
8	Ground Level Elevation	:	53 AMSL	
9	Ultimate Working Depth	:	Up to 26 AMSL (27 mgbl)	
10	Water Table	:	21 AMSL (32 mbgl)	
11	Topography of Mine	:	The area represents a gently hill track.	
12	Explosive	:	110 kg/day	

	Requirement		
13	Diesel/Fuel requirement	:	140 litre/day

Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Overburden in cum	Intercalated waste in cum	Total waste in cum	Bench AMSL
1st	35112	94802	22110	1848	23958	50-44
2nd	35582	96072	0	1873	1873	50-44
3rd	36836	99458	0	1939	1939	44-38
4th	38247	103267	0	2013	2013	38-26
5th	38903	105037	13365	2048	15413	56-26
Total	**184680**	498636	**35475**	**9720**	**45195**	

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	Conceptual stage (Ha) (after life of mine)
Quarry	NIL	1.135	1.460 ha (entire area will be converted into rainwater harvesting)
Waste Dump	NIL	0.318	Nil (waste dump to be removed and backfilled)
Road	NIL	0.003	0.0
Safety Zone Plantation	NIL	0.773	0.773
Total	NIL	2.229	2.233
Unused Area	2.233	0.004	0.00
Total Lease Area	**2.233**		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.773 ha	1933
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.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs)	Recurring Cost (Rs)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	 50,000 40,000 20,000 10,000
3	Plantation	5,66,600	1,00,000
4	Construction and maintenance of haul road	1,00,000	1,50,000
TOTAL		**6,66,600**	**5,70,000**

*Note: *2833 plants * 200 Rs (for each plants including hedges and fences) = Rs. 5.66 lakhs.*
*Salary of Labor for haul road maintenance 1 labor*300 =300 per day*
*300*300 = 90000/- 1,50,000/- including maintenance*
** 2.5 lakh per kilometer (250000 * 0.40 km haul road = 100000 /-)*

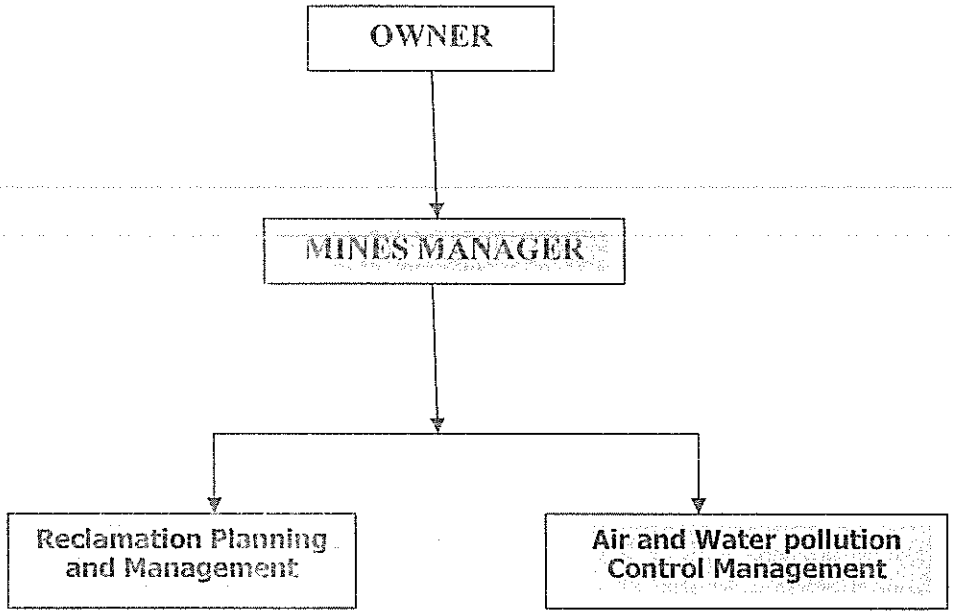
Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

Total 45195 cum waste generated during the plan period which shall be used in making and maintenance of haul road and village road, so there is no requirement of waste dumping Plan for this mining plan period because it is used for village & haul road maintenance

Organization Structure



Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
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- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
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Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1	5	4	3	2	1

(Catastrophic)					
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
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2	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:

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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
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

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While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
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- 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.

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The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
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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.

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Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- 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.

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- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or 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 24, 25, 26, 27 & 28.03.2025, 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. A representation headed by Shri Pargan Soren (Gram Pradhan, Dhatapara) alongwith several villagers was received stating that the land being allotted for the mining activities was without the consent / concurrence of the owners of the land. Hence, the DC, Sahibganj should ascertain that the lease should be executed after proper verification of land ownership.

II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*Ek Ped Ma Ke Naam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

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18. Marro Stone Deposit of Shri Ajit Kumar Singh, Village : Marro, Thana : Govindpur, Thana no. : 136, Distt. : Dhanbad, Jharkhand (1.214 Ha).

(Proposal no.: SIA/JH/MIN/ 530502 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 27.03.2025.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA Notification, 2006.

TOR Application for: Proposed Capacity- 8631.0 cum/annum or 23303.7TPA.

Project and Location Details :

Sl	Parameter		Details	
1	Project Name	:	Marro Stone Block	
2	Lessee:	:	Shri Ajit kumar Singh	
3	Lease Address	:	Village – Marro, Thana- Govindpur District – Dhanbad, State- Jharkhand	
4	Lease Area	:	1.214 Ha	Acres- 2.99 Acres
5	Type of Land	:	Non- Forest (Raiyati Land)	
6	Project Cost	:	Rs. 35 Lakhs	
7	EMP Budget	:	Capital: Rs. 8.45 lakhs	Recurring: Rs. 5.70 Lakh / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 100959.99 cum	Tonnes: 272591.97tons
10	Mine Life	:	10 years	
11	Man power	:	20	
12	Water Requirement	:	5.4~5.5 KLD (Drinking: 0.20 KLD, Dust Suppression: 2.62 KLD, Plantation: 2.58 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	200 KVA	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Kudai Nadi, approx. 0.50 km in South direction	
17	Nearest Habitation	:	Approx. 0.42 km	
18	Nearest Rail Station	:	Dhanbad Railway station, approx. 10.4 km towards SW direction	
19	Nearest Air Port	:	Dhanbad Airport, approx. 7.8 km towards SW direction.	
20	Nearest Forest	:	Protected Forest , Approx. 6.89 km.	
21	Road & Highways	:	SH - 13, Approx. 3.3 km in East direction. NH - 19, Approx. 2.5 km in South direction. NH- 419, Approx. 4.0 km in SE direction.	

CO-ORDINATES

1	Latitude	From 23°51'55.73" N	To 23°51'58.42" N

2	Longitude	From 86°29'26.48" E	To 86°29'34.09" E

LAND DETAILS

Khata no.	Plot no.
20	386 (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. 1882, dated 01.09.2022.
2	CO	:	The CO, Govindpur, Dhanbad vide letter no. 227, dated 25.02.2025 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster	:	DMO, Dhanbad vide memo no. 62/M, dated 21.01.2025 certified that 03 other mining lease area (3.20 Acre, 3.15 Acre & 11.85 Acre Acre) and 02 LoI (4.991 Acre & 3.5 Acre) exists within 500 meters radius from proposed project site and total area is 29.68 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 2571, dated 19.10.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Dhanbad Forest Division vide letter no. 2919, dated 30.09.2023 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 Dhanbad District (Sl. No. 02, Page no. 67).
7	Gram Sabha	:	Gram Sabha conducted on 04.09.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Dhanbad vide Memo No. 381/M, dated 12.03.2025.
9	Qualified Person	:	Dr. Amarjeet Kumar Singh through e-mail dated 26.03.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast other than fully mechanized method	
2	Quarry Area	:	1.214 ha or 2.99 Acres	Life of Mine – 9.7 or 10 Years
3	Waste Generation	:	Total 1953.75 cum waste shall be generated during the plan period.	
4	Stripping Ratio	:	1: 0.2	
5	Working Days	:	300	
6	Benches: size & No	:	6m to 6m	
7	Elevation of Mine	:	242 AMSL to 262 AMSL	
8	Ground Level Elevation	:	242 AMSL	
9	Ultimate Working Depth	:	Up to 218 AMSL (24 mgbl)	
10	Water Table	:	180-182 AMSL (60-62 mbgl)	
11	Topography of Mine	:	The area represents a small hillock.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	140 litre/day	

Production Details

Year	Production of Stone		waste (cum)	Bench AMSL
	(cum)	(tons)		
1st	8550.00	23085.00	150.00	259-248
2nd	8564.25	23123.475	450.75	254-242
3rd	8631.00	23303.70	450.75	248-242
4th	8589.00	23190.30	452.00	242-236
5th	8556.00	23101.20	450.25	252-236
Total	**42890.25**	**115803.675**	**1,953.75**	

Land Use

Type of land use	Existing Land Use (Ha)	At the end of Plan period (Ha)	Conceptual Period(Ha) (after life of mine)
Quarry	0.75	0.75	0.83
Infrastructure	Nil	0.03	Nil
Mine Road	Comes under qr.	Comes under qr.	Nil
Garland Drain	Nil	0.04	Nil
Green Belt	0.38	0.38	0.38

Settling Tank	Nil	0.01	Nil
Total	1.13	1.21	1.21
Total lease Area	1.214		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.38 ha	950
2	Along Approach Road	:	120 m	240
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs)	Recurring Cost (Rs)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	 50,000 40,000 20,000 10,000
3	Plantation	6,45,000	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
TOTAL		8,45,000	5,70,000

Note: *1290 plants * 500Rs (for each plants including hedges and fences) = 6.45lakh
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/- ~ 1,50,000/- Including maintenance

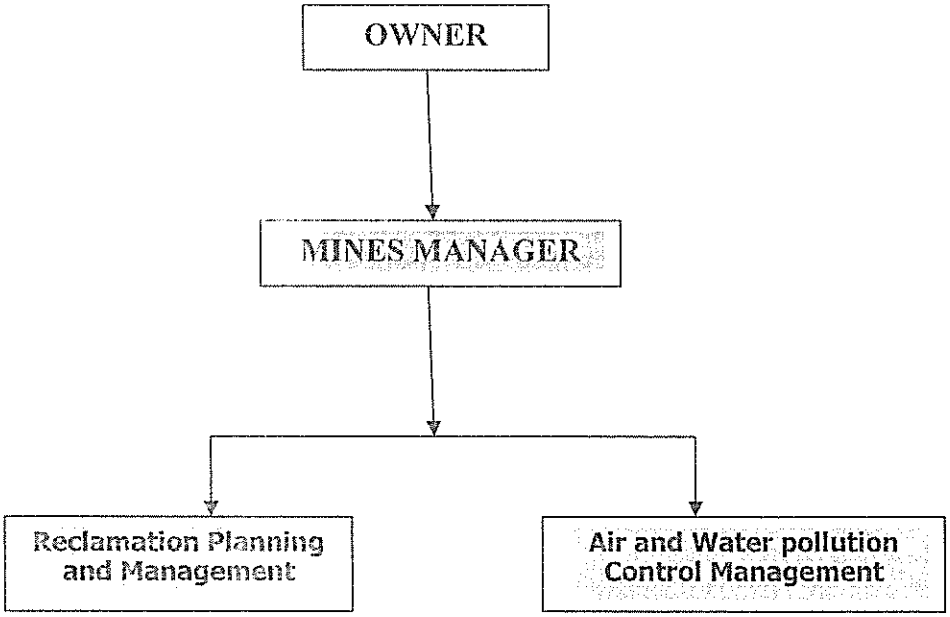
Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

It has been calculated that total 1,953.75 cum waste shall be generated during the plan period. Plan period & conceptual period is same. Some of the waste shall be utilized for maintenance the village road and making the approach road, haul road and some part of the waste shall be collecting with a settling tank for controlling surface run off.

Organization Structure



Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after

settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.

- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injuryor 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)			
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5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
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- Falls from the edge of a bench
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- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

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during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

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- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
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- Provision 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.

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- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
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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 24, 25, 26, 27 & 28.03.2025, 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). 10% of the total green belt proposed shall be allocated under this clause.

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19. Marro Stone Deposit of Shri Ajit Kumar Singh, Village : Marro, Thana : Govindpur, Distt. : Dhanbad, Jharkhand (2.02 Ha).

(Proposal no.: SIA/JH/MIN/ 530515 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 27.03.2025.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA Notification, 2006.

TOR Application for: Proposed Capacity- 8799.00 cum/annum or 23757.30 TPA.

Project and Location Details :

Sl	Parameter		Details	
1	Project Name	:	Marro Stone Block	
2	Lessee:	:	Shri Ajit kumar Singh	
3	Lease Address	:	Village – Marro, Thana- Govindpur District – Dhanbad, State- Jharkhand	
4	Lease Area	:	2.02 Ha	Acres- 4.991 Acres
5	Type of Land	:	Non- Forest (Raiyati Land)	
6	Project Cost	:	Rs. 35 Lakhs	
7	EMP Budget	:	Capital: Rs. 10.175 lakhs	Recurring: Rs. 5.70 Lakh / year
8	New or Expansion	:	New	

9	Mineable Reserves	:	cum.: 108138.74 cum	Tonnes: 291974.59 tons
10	Mine Life	:	10 years	
11	Man power	:	20	
12	Water Requirement	:	7.10 KLD (Drinking: 0.20 KLD, Dust Suppression: 3.63 KLD, Plantation: 3.27 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Kudai Nadi, approx. 0.50 km in South direction	
17	Nearest Habitation	:	Approx. 0.40 km	
18	Nearest Rail Station	:	Dhanbad Railway station, approx. 10.2 km towards SW direction	
19	Nearest Air Port	:	Dhanbad Airport, approx. 7.5 km towards SW direction.	
20	Nearest Forest	:	Protected Forest , Approx. 6.84 km.	
21	Road & Highways	:	SH - 13, Approx. 3.1 km in East direction. NH - 19, Approx. 2.3 km in South direction. NH- 419, Approx 3.4 km in SE direction.	

CO-ORDINATES

1	Latitude	From 23°51'52.84" N	To 3°51'56.76" N
2	Longitude	From 86°29'28.45" E	To 86°29'38.67" E

LAND DETAILS

Khata no.	Plot no.
20	386 (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. 1881, dated 01.09.2022.
2	CO	:	The CO, Govindpur, Dhanbad vide letter no. 228, dated 25.02.2025 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster	:	DMO, Dhanbad vide memo no. 61/M, dated 21.01.2025 certified that 03 other mining lease area (3.20 Acre, 3.15 Acre & 11.85 Acre Acre) and 02 LoI (2.991 Acre & 3.5 Acre) exists within 500 meters radius from proposed project site and total area is 29.68 Acre.

4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 2572, dated 19.10.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Dhanbad Forest Division vide letter no. 2918, dated 30.09.2023 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 Dhanbad District (Sl. No. 01, Page no. 67).
7	Gram Sabha	:	Gram Sabha conducted on 04.09.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Dhanbad vide Memo No. 382/M, dated 12.03.2025.
9	Qualified Person	:	Dr. Amarjeet Kumar Singh through e-mail dated 26.03.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast other than fully mechanized method	
2	Quarry Area	:	2.02 ha or 4.991 Acres	Life of Mine –10 Years
3	Waste Generation	:	Total 2267.56 cum waste shall be generated during the plan period	
4	Stripping Ratio	:	1: 0.2	
5	Working Days	:	300	
6	Benches: size & No	:	6m to 6m	
7	Elevation of Mine	:	200 AMSL to 226 AMSL	
8	Ground Level Elevation	:	200 AMSL	
9	Ultimate Working Depth	:	Up to 196 AMSL (4 mgbl)	
10	Water Table	:	180-182 AMSL (18-20 mbgl)	
11	Topography of Mine	:	The area represents a small hillock.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	130 litre/day	

Production Details

Year	Production of Stone		waste (cum)	Bench AMSL
	(cum)	(tons)		
1st	8223.20	22202.64	432.00	225-214

2nd	8768.50	23674.95	461.50	220-208
3rd	8799.00	23757.30	461.11	214-202
4th	8550.00	23085.00	450.00	208-202
5th	8796.00	23749.20	462.95	208-196
Total	**43136.7**	**116469.09**	**2267.56**	

Land Use

Type of land use	Existing Land Use (Ha)	At the end of Plan period (Ha)	Conceptual Period(Ha) (after life of mine)
Quarry	0.51	0.64	1.51 (Entire Area Will be Converted into Water Reservoir)
Infrastructure	Nil	0.03	Nil
Mine Road	0.03.	0.01	Nil
Garland Drain	Nil	0.06	Nil
Green Belt	0.51	0.51	0.51
Settling Tank	Nil	0.01	Nil
Total	**1.05**	**1.26**	**2.02**
Total lease Area	1.214		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.51 ha	1275
2	Along Approach Road	:	180 m	360
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs)	Recurring Cost (Rs)
1	Pollution Control & Dust Suppression	--	2,00,000

2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	 50,000 40,000 20,000 10,000
3	Plantation	8,17,500	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
TOTAL		**10,17,500**	**5,70,000**

Note: *1635 plants * 500Rs (for each plants including hedges and fences) = 8.175 lakh

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300* 300 = 90000/- ~ 1,50,000/- Including maintenance

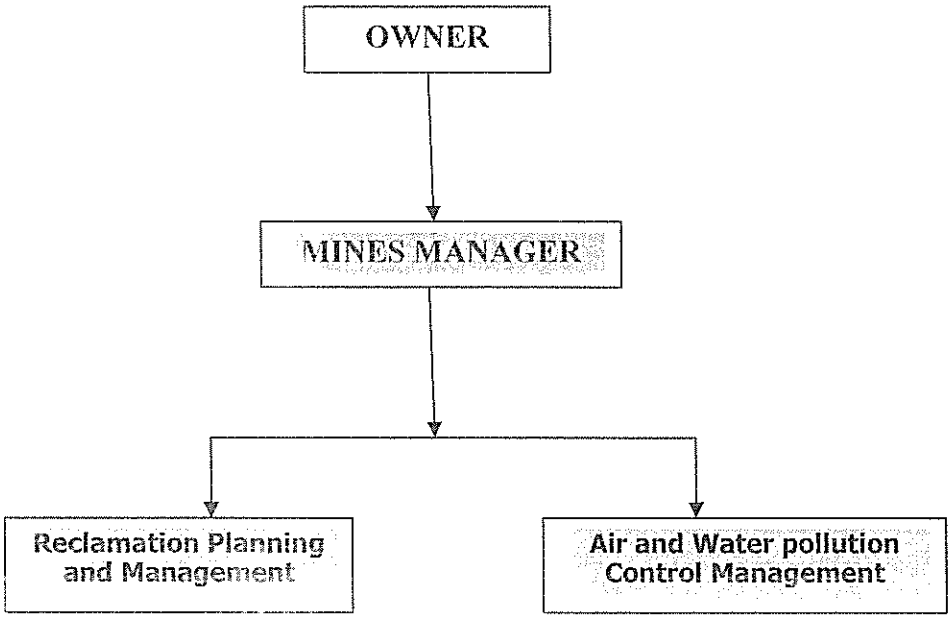
Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

It has been calculated that total 2267.56 cum waste shall be generated during the plan period. Plan period & conceptual period is same. Some of the waste shall be utilized for maintenance the village road and making the approach road, haul road and some part of the waste shall be collecting with a settling tank for controlling surface run off.

Organization Structure



Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.

L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injuryor 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.

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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.
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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. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

I. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 24, 25, 26, 27 & 28.03.2025, 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). 10% of the total green belt proposed shall be allocated under this clause.

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20. Bara Bana Para & Matiyani Stone Mine of M/s Rahul Metals (Prop. : Shri Gopi Sadhwani), Village : Bara Bana Para & Matiyani, Thana : Taljhari, Distt. : Sahibganj, Jharkhand (9.086 Ha).

(Proposal no.: SIA/JH/MIN/ 472124 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is an expansion project which has been taken for appraisal on 27.03.2025.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA Notification, 2006.

TOR Application for: Proposed Capacity- 305482 cum/year or 916446 TPA.

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Bara Bana Para & Matiyani Stone Mine
2	Lessee:	:	M/S Rahul Metals, Prop – Sri Gopi Sadhwani
3	Lease Address	:	Village – Bara Bana Para & Matiyani, P.S. - Taljhari,

			District – Sahibganj, State- Jharkhand	
4	Lease Area	:	9.086 Ha	Acres- 22.45 Acres
5	Type of Land	:	Non- Forest (Raiyati Land)	
6	Project Cost	:	Rs. 120 Lakhs	
7	EMP Budget	:	Capital: Rs. 6.666 lakhs	Recurring: Rs. 4.27 Lakh / year
8	New or Expansion	:	Expansion	
9	Mineable Reserves	:	cum.: 738272 cum	Tonnes: 2214815 tons
10	Mine Life	:	Upto the lease period i.e. 15.12.2018 to 23.06.2026.	
11	Man power	:	65	
12	Water Requirement	:	26.45 ~ 27.0 KLD (Drinking: 0.65 KLD, Dust Suppression: 13.80 KLD, Plantation: 12.0 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Bramhajamalpur Pond, Approx. 8.50 km. in NE direction.	
17	Nearest Habitation	:	Approx. 0.02 km	
18	Nearest Rail Station	:	Bakudi Railway station, approx. 1.50 km towards North East direction.	
19	Nearest Air Port	:	Birsa Munda Airport, Ranchi approx. 305.10 km towards SW direction.	
20	Nearest Forest	:	Protected Forest , Approx. 0.80 km in ENE direction Protected Forest , Approx. 3.31 km in South direction	
21	Road & Highways	:	NH-33, Approx. 2.45 km. in SE direction.	

CO-ORDINATES

1	Latitude	N24°55'02.89308"	N24°55'18.77444"
2	Longitude	E87°45'41.01728"	E87°46'02.5800

LAND DETAILS

Village	Plot no.
Bara Bana Para	15, 17 (P), 18, 19, 24 (P), 25 (P) & 26 (P)
Matiyani	15, 16, 17 & 18

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed : 15.12.2018 to 23.06.2026.
2	CO	:	The CO, Taljhari vide letter no. 53/Ra., dated 20.01.2023 has mentioned the plot no. of the project is not recorded as "Jungle-

			Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster	:	DMO, Sahibganj vide memo no. 1735/M, dated 24.11.2014 certified that 03 other mining lease area (13.35 Acre, 3.50 Acre & 2.84 Acre) exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO –cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2863, dated 26.11.2022 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Sahibganj Forest Division vide letter no. 1285, dated 24.06.2015 certified that the distance of forest land is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Sahibganj District (Sl. No. 111, Page no. 286).
7	Gram Sabha	:	Gram Sabha conducted on 15.01.2015.
8	Mining Scheme / Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 256/M, dated 23.03.2024.
9	Previous Production Report	:	Production report issued by DMO, Sahibganj vide memo no. 245, dated 22.03.2024.
10	Previous Environmental Clearance (EC)	:	Previous EC granted by SEIAA, Jharkhand vide letter no. EC/SEIAA/2015-16/1016/2015/2010, dated 30.11.2015.
11	Transfer of EC	:	Transfer of EC granted by SEIAA vide letter no. 457, dated 24.03.2023.
12	Certified Comliance Report	:	Self certified compliance report.
13	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. No. : JSPCB/HO/RNC/CTE-706483 /2016/242, dated 06.08.2016.
14	Consent to Operate (CTO)	:	CTO issued by JSPCB vide Ref. No. : JSPCB/HO/RNC/CTO-16312683 /2023/1115, dated 25.06.2023.
15	Grid certificate	:	DMO, Sahibganj vide memo no. 508/M, dated 19.03.2025 certified that the proposed project site is outside of Redzone Grid 1, 3, 4 & 7

16	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mining scheme has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	9.086 ha	Life of Mine – Upto the lease period i.e. 15.12.2018 to 23.06.2026.
3	Waste Generation	:	Total 61597 cum of gritty soil & 18757 cum of Intercalated waste generated during the plan period	
4	Stripping Ratio	:	1: 1.1	
5	Working Days	:	300	
6	Benches: Size & No	:	6m to 6m	
7	Elevation of Mine	:	79 AMSL to 94 AMSL	
8	Ground Level Elevation	:	79 AMSL	
9	Ultimate Working Depth	:	Up to 52 AMSL (27 mgbl)	
10	Water Table	:	39-42 AMSL (37-40 mbgl)	
11	Topography of Mine	:	The area represents a hillock with rock Mass of basalt.	
12	Explosive Requirement	:	140 kg/day	
13	Diesel/Fuel requirement	:	150 litre/day	

Production Details

Year	Removal of Gritty Soil		Intercalated waste	Production of stone in Tons	
	In cum	In tonnes	In cum	In cum	In tonnes
1th	20317	30476	2679	50910	152730
2nd	41280	61920	16078	305482	916446
Total	**61597**	**92396**	**18757**	**356392**	**1069176**

Land Use

Type of Land	Present Land Use (In Ha)	At the End of the Five year Plan Period (In Ha)	At the End of Mine (In Ha.)		Conceptual Period (In Ha.)		
				Public Use	Backfill	Water Body	Plantation
Quarry	3.156	5.906 (Including backfilling 0.837 Ha)	6.911 (Including backfilling 1.391 Ha)	---	0.837	6.074	-

Green Belt Safety Barrier	2.160 (Plantation)	2.160 (Plantation)	2.160 (Plantation)	---	--	-	2.160
Road	0.187	0.005	Nil	--	-	-	--
Existing Crusher	0.511	0.511	nil	--	-	-	-
Blocked Area due to Bore well safety	0.010	0.010	0.010	0.010	-	-	-
Blocked Area due to Road safety	0.005	0.005	0.005	0.005	-	-	-
Total area in Use	3.869	8.592	9.086	0.15	0.837	6.074	2.160
Balanced Area unused Area	3.057	0.494	nil	-	-	-	-
Total Applied Area	9.086	9.086	9.086	9.086			

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	2.160 ha	5400 (in previous year of mining)
2	Along Approach Road	:	500 m	1000
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

S. 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	7,50,000	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
TOTAL		**9,50,000**	**5,70,000**

*Note: *1500 plants * 500 Rs (for each plants including hedges and fences) = Rs. 7.50 lakhs.*
A total of 6500 saplings were proposed to be planted. Out of which 5400 plant in Safety Zone area have been planted during previous year of mining.
(1000 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 1500 Plants) *Salary of Labor for haul road maintenance 1 labor*300 =300 per day*
*300*300 = 90000/- ~ 1,50,000 including maintenance*
** 5.0 lakh per kilometer (500000 * 0.40 km haul road = 200000 /-*

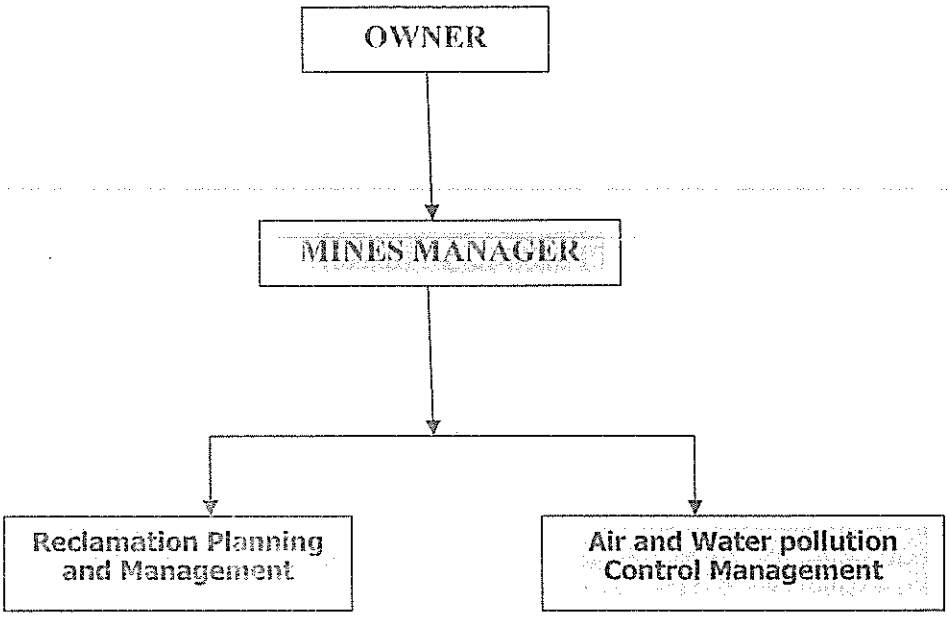
Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

Total 61597 cum of gritty soil & 18757 cum of Intercalated waste generated during the plan period waste generated during the plan period which shall be used in making and maintenance of haul road and village road, so there is no requirement of waste dumping Plan for this mining plan period because it is used for village & haul road maintenance

Organization Structure



Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission

- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

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, injuryor system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench

- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.

- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.

b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling 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 24, 25, 26, 27 & 28.03.2025, 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).10% of the total green belt proposed shall be allocated under this clause.

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21. Benagaria Stone Deposit of M/s Radhika Sweets and Milk Products Pvt. Ltd. (Director : Shri Shailendra Kumar Singh & Shri Atmaram Upadhyay), Mouza : Benagaria, Thana : Shikaripara, Distt. : Dumka, Jharkhand (2.395 Ha).

(Proposal no.: SIA/JH/MIN/ 527109 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 27.03.2025.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA Notification, 2006.

TOR Application for: Proposed Capacity- 40335 cum/annum or 121007 TPA.

Project and Location Details :

Sl	Parameter		Details	
1	Project Name	:	Benagaria Stone Deposit	
2	Lessee:	:	M/s Radhika Sweets and Milk Products Pvt. Ltd. Director: Sri Shailendra Kumar Singh & Atmanand Upadhyay	
3	Lease Address	:	Mouza – Benagaria, Anchal – Shikaripara,, District – Dumka, State– Jharkhand	
4	Lease Area	:	2.395 ha	Acres- 5.92 Acres
5	Type of Land	:	Non- Forest (Raiyati Land)	
6	Project Cost	:	Rs. 130 Lakhs	
7	EMP Budget	:	Capital: Rs. 12.975 lakhs	Recurring: Rs. 6.87 Lakh / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 402896.66cum	Tonnes: 1208690 tons
10	Mine Life	:	10 years	
11	Man power	:	32	
12	Water Requirement	:	9.6 ~ 9.70 KLD (Drinking: 0.32 KLD, Dust Suppression: 4.89 KLD, Plantation: 4.39 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Chila Nadi, approx. 2.50 km in South direction .	
17	Nearest Habitation	:	Approx. 0.10 km	
18	Nearest Rail Station	:	Mallarpur Railway station, approx 15.84 km in SE direction	
19	Nearest Air Port	:	Deoghar Airport, approx. 96.60 km towards WNW direction	
20	Nearest Forest	:	Protected Forest , Approx. 2.5 km. in NNW direction of mine site.. Protected Forest , Approx. 4.7 km. in SSE direction of mine site.	
21	Road & Highways	:	NH-114 A, Approx. 3.0 km in NNE direction	

CO-ORDINATES

1	Latitude	From N 24°10'48.853	To N 24°10'56.267"
2	Longitude	From E 87°36'53.220	To E 87°36'59.883"

LAND DETAILS

J.B. No.	Plot no.
41	219, 220, 221, 275, 276, 277, 281 & 282

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 91/M, dated 16.01.2025.
2	CO	:	The CO, Shikaripara vide letter no. 1125/Ra., dated 21.12.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Dumka vide memo no. 461/M, dated 03.03.2025 certified that 01 other mining lease area (6.16 Acre) and 02 LoI (5.41 Acre & 6.84 Acre) exists within 500 meters radius from proposed project site and total area is 24.33 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 2324, dated 19.11.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Dumka Forest Division vide letter no. 2405, dated 06.11.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Dumka has been certified vide memo no. 452/M, dated 01.03.25 that this project is mentioned in approved DSR of Dumka District as a potential area (Sl.no. 94, Page no. 319).
7	Gram Sabha	:	Gram Sabha conducted on 07.10.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Dumka vide Letter No. 410/M, dated 19.02.2025.
9	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized method	
2	Quarry Area	:	2.395 ha or 5.92 Acres	Life of Mine –10 Years
3	Waste Generation	:	Total 14400 cum Gritty Soil & Intercalated Waste 10607 cum waste generated during this mining plan period	
4	Stripping Ratio	:	1: 0.5	
5	Working Days	:	300	
6	Benches: size & No	:	6m to 6m	
7	Elevation of Mine	:	85 AMSL to 86 AMSL	
8	Ground Level Elevation	:	85 AMSL	
9	Ultimate Working Depth	:	Up to 44 AMSL (41 mgbl)	
10	Water Table	:	27-35 AMSL (50-58 mbgl)	
11	Topography of Mine	:	The area represents a gently sloping land with rock mass of Basalt.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	140 litre/day	

Production Details

Year	Removal of Gritty soil in cum	Removal of Gritty soil in tonnes	Intercalated Waste in cum	Production of stone in Cum	Production of stone in Tonnes	Bench AMSL
1st	12240	18360	2120	40271	120812	86-80
2nd	2160	3240	2121	40300	120900	86-74
3rd	000	000	2122	40316	120949	80-68
4th	000	000	2121	40300	120900	74-68
5th	000	000	2123	40335	121007	74-62
Total	**14400**	**21600**	**10607**	**201522**	**604568**	

Land Use

Type of Land	Present Land Use (In Ha)	At the End of the Five year Plan Period (In Ha)	At the End of Mine (In Ha.)	Conceptual Period (In Ha.)		
				Public Use	Water Body	Plantation
Quarry	Nil	1.111	1.837 (including backfill	-	1.424	-

			0.415 Ha)			
Safety Barrier	Nil	0.558 (Plantation)	0.558 (Plantation)	-	-	0.558 (Plantation)
Road	0.042	0.020	Nil	-	-	-
Temporary Dump	Nil	0.418	Nil	-	-	-
Parapet wall	Nil	0.009	Nil	-	-	-
Garland drain	Nil	0.011	Nil	-	-	-
Total area in Use	**0.042**	**2.127**	**2.395**	-	1.424	0.558
Balanced Area unused Area	**2.353**	**0.268**	**Nil**	-	-	-
Total Applied Area	**2.395**	**2.395**	**2.395**	**2.395**		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.558 ha	1395
2	Along Approach Road	:	350 m	700
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs)	Recurring Cost (Rs)
1	Pollution Control & Dust Suppression	--	4,00,000

2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	14,000 8,000 8,000 7,000
3	Plantation	10,97,500	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
TOTAL		**12,97,500**	**6,87,000**

Note: *2,195 plants * 500 Rs (for each plants including hedges and fences) = 10.975 lakhs

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300*300 = 90,000/- or 1,50,000/-

**** 5.0 lakh per kilometer (500000 * 0.350 km haul road = 1,75,000 or 2,00,000/-)***

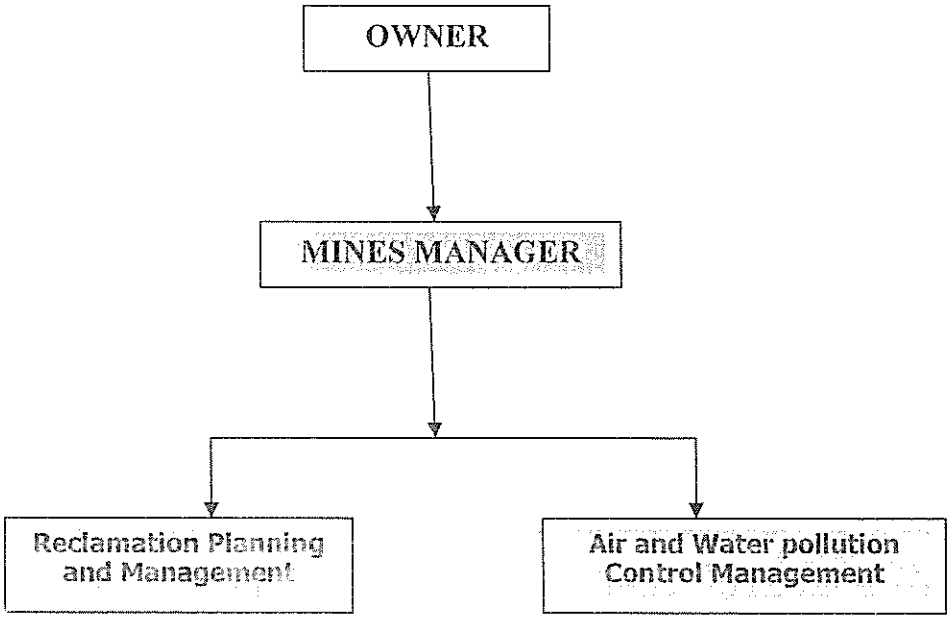
Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

Total 14400 cum Gritty Soil & Intercalated Waste 10607 cum waste generated during this mining plan period. the field visit it has been observed that in Shikaripara Block some working are going on and it has been found that the recovery of stone is 95% and rest 5% is treated as intercalated quarry waste.

Organization Structure



Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.

L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injuryor system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5

2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work

in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine

- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.

- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

I. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 24, 25, 26, 27 & 28.03.2025, 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). 10% of the total green belt proposed shall be allocated under this clause.

****

22. **Kochedega Sand Deposit in the river bed of Sankh River of M/s Jharkhand State Mineral Development Corporation Ltd. (JSMDC Ltd.), Village : Kochedega, Thana : Simdega, Distt. : Simdega, Jharkhand (5.92 Ha).**

(Proposal no.: SIA/JH/MIN/ 517614 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 27.03.2025.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA Notification, 2006.

TOR Application for: Proposed Capacity- 10656 Cum/Annum 28025 TPA

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Kochedega Sand Deposit (River Bed of Sankh River)
2	Lessee	:	M/s Jharkhand State Mineral Development Corporation Limited

3	Lessee Address	:	Khanij Nigam Bhawan, Doranda, Ranchi – 834002, Jharkhand.	
4	Lease Area	:	5.92 ha.	Acres- 14.62 Acres
5	Type of Land	:	Govt. non forest (river) land	
6	Project Cost	:	Rs. 110 Lakhs	
7	EMP Budget	:	Capital: 15.055 Lakh	Recurring: 5.70 Lakh
8	New or Expansion	:	New	
9	Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity	:	Cum : 10656 cum (dry basis)	Tonnes: 28025 tonnes (dry basis)
10	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	:	35	
12	Water Requirement	:	5.30~ 6.00 KLD (Drinking: 0.35 KLD, Dust Suppression: 3.00 KLD, Plantation: 5.30 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	NA	
15	Crusher	:	NA	
16	Nearest Water Body	:	Project lies on Sankh River.	
17	Nearest Habitation	:	Approx 0.61 km towards South direction.	
18	Nearest Rail Station	:	Kanaroan Railway Station, approx. 45.70 Km in East direction	
19	Nearest Air Port	:	Birsa Munda Airport approx. 118.50 km towards NE direction.	
20	Nearest Forest	:	Protected Forest, Approx. 3.50 Km in East direction from mining lease. Protected Forest, Approx. 2.50 Km in SE direction from mining lease. Protected Forest, Approx. 3.00 Km in South direction from mining lease.	
21	Road & Highways	:	NH-143, Approx. 7.30 Km in East direction from mining lease.	

CO-ORDINATES

1	Latitude		From 22° 37' 38.11" N	To 22° 37' 53.73" N
2	Longitude		From 84° 26' 02.99" E	To 84° 26' 57. 87" E

LAND DETAILS

Plot no.
7464 (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, Simdega vide letter no. : 147 (ii)/Ra., dated 23.02.2023 has mentioned the plot no. of the project is not recorded as "Jungle - Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Simdega vide memo no. 782/M, dated 18.10.2024 certified that the no other Balughat exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Ranchi vide letter no. : 513, dated 26.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Territorial	:	DFO, Simdega Forest Division vide letter no. 588, dated 19.03.2025 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 Simdega (Sl. No. SR9, Page no. 59).
7	Gram Sabha	:	BDO, Simdega vide letter no. 1179 (ii), dated 15.07.2024 informed that Gram Sabha conducted on 25.06.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Simdega vide memo no. 924/Mining, dated 12.12.2024.
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	:	5.92 ha. or 14.62 Acres	Life of Mine – Upto15/08/2025

				as per provisions of Jharkhand State Sand Mining Policy 2017 & its amendment.
3	Waste Generation	:	00 cum, as it is sand mining project.	
4	Stripping Ratio	:	0:0	
5	Working Days	:	200 Days	
6	Benches: size & No	:	Bench height – 0.30 m & Bench width - 20.0 m.	
7	Elevation of Mine	:	380mRL to 381mRL(maximum 0.30 m)	
8	Ground Level Elevation	:	380.7 mRL	
9	Ultimate Working Depth	:	0.30 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	Average Replenishment Rate	Production of sand(Cum)	T. F.	Production of Sand(Tonnes)
1st Year	60 %	10656	2.63	28025

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)	5.92
Residential area	Nil
Company land	Nil
Private Land	Nil
Total	**5.92**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Plantation along both sides of approach road	500 m	1000
2	No. of Plants distributed with consultation local authorities/ village Panchayat	-	60

- 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	BaselineMonitoring i) Air ii) Water iii) Soil iv) Noise	--	 50,000 40,000 20,000 10,000
3	Plantation	5,30,000	1,00,000
4	Construction and maintenance of haul road	2,50,000	1,50,000
TOTAL		**15,05,500**	**5,70,000**

*Note: *1060 plants *500 Rs (for each plants including hedges and fences) = Rs. 5,30,000/-*
*Salary of Labor for haul road maintenance 1 labor*300 = 300 per day*
300 200 = 60,000/-~ 1,50,000/-.(including Maintenance)*
** 5 lakh per kilometer (500000 * 0.50 km haul road = 2,50,000/-)*

Environment Monitoring Programme

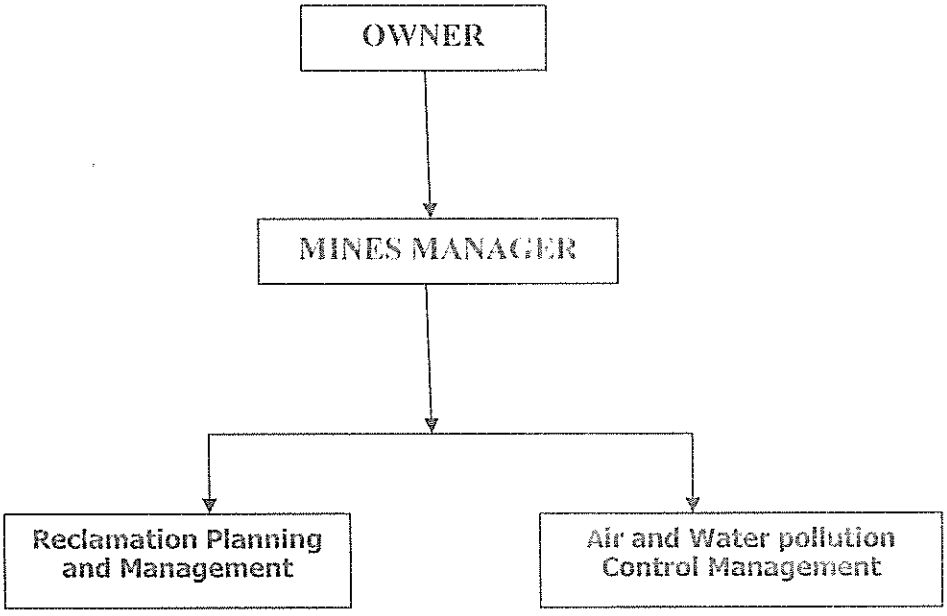
S. No.	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly

2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

No solid waste is generated during the course of mining.

Organization Structure



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 DICUSSED 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 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.
m. Transportation from the river bed to the NH-143AG 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 24, 25, 26, 27 & 28.03.2025, 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). 10% of the total green belt proposed shall be allocated under this clause.

II. Wet sand will not be transported.

III. Pre-monsoon data of current year is to be included in final EIA report.

IV. Satellite imagery with Geo-Cordinates of pre-monsoon (current year) to be included in the final EIA report.

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23. Stone Mining Project of M/s Asit Kumar Mandal Stone Works, Village : Garga, Tehsil : Nirsa, Distt. : Dhanbad, Jharkhand (3.17 Ha).

(Proposal No. : SIA/JH/MIN/ 518189/2025).

Name of the consultant : AWS Envirotech (OPC) Pvt. Ltd, Lucknow, U.P.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Environmental Clearance (EC) after ToR.

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 103rd meeting held on 14 - 18.04.2023 and SEIAA, Jharkhand has approved the ToRs in 104th meeting held on 27th & 28th April, 2023. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2022-23/2793/2023/84, dated 03.05.2023. The final EIA / EMP submitted by PP to SEAC on 16.01.2025.

Application for Environmental Clearance (EC) (re-appraisal of Environment Clearance issued by DEIAA, Dhanbad).

The project has been granted EC by DEIAA, Dhanbad vide letter no. EC/ DEIAA/2016-17/20, dated : 17.01.2017.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Dhanbad which has been taken up for consideration on 27.03.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B1.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 413/M, dated 18.03.2023 by DMO, Dhanbad is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Dhanbad vide memo no. memo no. 71, dated 20.01.2025.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.

The self certified compliance report has been submitted and also presented before the Committee.

EC Application for: Stone Boulders: Increase in Production Capacity from – 123,000.00Tonne (Max) per year to 359,400.00 tonne (Max)

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Stone Mining	
2	Lessee:	:	Lessee- Sri Asit Kumar Mandal, S/o Sri Sudhan Chandra Mandal, Village- Asanbani, P.O. Vitiya, P.S.- Govindpur, Dhanbad, Jharkhand Md. Azad Ansari, S/o Late Mustak Ansari, Village- Dumdumi, PO- Barwa, District-Dhanbad, State-Jharkhand)	
3	Lease Address	:	Mouza- Garga, Thana- Nirsa, District – Dhanbad, State- Jharkhand	
4	Lease Area	:	3.17 ha	Acres- 7.85 Acres
5	Type of Land	:	Government Land	
6	Project Cost	:	Rs. 73.20 Lakhs	
7	EMP Budget	:	Capital: 7.325 Lakhs	Recurring: 3.4825 Lakh / year
8	New or Expansion	:	Expansion (production enhancement) (Re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	1738752 tonnes	
10	Mine Life	:	Upto the lease period i.e. 05.11.2017 to 04.11.2027.	
11	Man power	:	35	
12	Water	:	22.178 KLD (Drinking: 0.495 KLD, Dust Suppression: 8 KLD, Plantation:	

	Requirement		13.683 KLD)
13	Water Source	:	Water will be sourced from Abandoned mines through the water tanker for dust suppression and plantation water will be sourced from a bore well within the lease area for drinking and domestic consumptions.
14	DG Set / power	:	NA
15	Crusher	:	NA
16	Nearest Water Body	:	Barakar River, at approx. 4.3 km towards NE direction
17	Nearest Habitation	:	Garga, 0.8 km towards ENE direction
18	Nearest Rail Station	:	Kalubathan Railway station, approx. 15.2 km in South direction
19	Nearest Air Port	:	Deoghar Airport, approx. 82 km towards NE direction.
20	Nearest Forest	:	Nil
21	Road & Highways	:	NH-19, Approx. 2.6 km, WNW direction

CO-ORDINATES

Pillars	Latitudes	Longitudes
P 1	23°53'37.84" N	86°38'02.37"E
P 4	23°53'34.54" N	86°38'01.07"E
P 9	23°53'32.50" N	86°38'05.19"E
P 12	23°53'33.03" N	86°38'01.39"E
P 13	23°53'31.16" N	86°38'00.73"E
P 17	23°53'27.82" N	86°38'03.71"E
P 18	23°53'27.42" N	86°38'04.98"E
P 20	23°53'28.65" N	86°38'05.82"E
P 21	23°53'29.11" N	86°38'05.13"E
P 25	23°53'32.51" N	86°38'09.16"E
P 29	23°53'32.23" N	86°38'05.23"E
P 31	23°53'34.45" N	86°38'06.31"E
P 36	23°53'37.30" N	86°38'03.88"E

Land Details:

Khata No	Plot No
72 (old)	576(P) & 604 (P) - Old
159 (New)	721(P) & 751 (P) - New

Statutory Clearances:

1	LOI/Lease docs	:	i. The Letter of Intent (LOI) has been issued by District Mining Officer, Dhanbad vide letter no. 1212/M., Dhanbad, dated 24.05.2016. ii. Lease Period :05.11.2017 to 04.11.2027.
2	CO	:	The CO, Nirsa, vide letter no. : 466, dated 13.04.2016 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in Khatiyan.
3	DMO	:	DMO, Dhanbad vide memo no. 1739/M. Dhanbad, dated 04.08.2016 certified that 01 other mining lease area (7.00 acre) exists within 500 m radius from proposed project site and total area is 14.85 Acre.
4	DFO Wild Life	:	DFO, Wildlife Hazaribagh vide letter no.: 2296, dated 17.11.2022 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	DFO, Dhanbad vide letter no.: 2612, dated 11.11.2022 certified that the distance of reserved / protected forest is 265 m from proposed project site.
6	DSR	:	The project is mentioned in page No 23 (Point No 86), District Survey Report (DSR) of Dhanbad district.
7	Gram Sabha	:	Gram Sabha conducted on 28.04.2016.
8	Mine Plan Approval	:	i. DMO, Dhanbad vide memo no. 1948, dated 06.09.2016. ii. Scheme of mining was approved by Additional Director, Geology, Hazaribagh vide memo no. 325/G, dated 20.10.2022
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Dhanbad vide letter no : EC/ DEIAA/2016-17/20, dated : 17.01.2017.
10	Consent to Establish (CTE) & Consent to Operate CTO from JSPCB	:	i. **CTE** issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2013011/2018/180, Dated: 14.02.2018. ii. **CTO** issued by JSPCB vide Ref. no. JSPCB/RO/DHN/CTO-8861885/2020/84, Dated : 12.11.2020.
11	Previous Production Figure	:	Previous production figure issued by DMO, Dhanbad vide memo no. 413/M, dated 18.03.2023.
12	Compliance Report	:	The PAs have applied to IRO, MoEF&CC, Ranchi on 12.04.2024. But no response was received by the IRO, MoEF&CC, Ranchi within 03 months of the application.

			In the light of OM F. no. IA3-22/10/2022-IA.III(E177258), dated 08.06.2022, the PAs have submitted a certified compliance report issued by JSPCB, Dhanbad vide memo no. 71, dated 20.01.2025.
13	Qualified Person	:	Dr. Amarjeet Kumar Singh was present in the meeting and affirmed that the mine plan has been prepared by him.
14	Public Hearing	:	Public Hearing conducted on 20.09.2023.
15	Baseline Monitoring Period	:	March, 2023 to May, 2023.

Working Details

1	Mining Method	:	Opencast. Semi mechanized Mining method, wagon drill with blasting	
2	Quarry Area	:	3.17 ha	Life of Mine – Upto the lease period i.e. 05.11.2017 to 04.11.2027.
3	Waste Generation	:	Almost nil; weathered rock with mixed soil may be generated, which will be used for road development	
4	Stripping Ratio	:	0: 1	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m, Bench No 1 to 5 (Conceptual period depth)	
7	Elevation of Mine	:	196 AMSL to 190 AMSL	
8	Ground Level Elevation	:	202 AMSL	
9	Ultimate Working Depth	:	166 AMSL	
10	Water Table	:	158 AMSL	
11	Topography of Mine	:	Area represents a small hillock	
12	Explosive Requirement	:	828 Kg/day	
13	Diesel/Fuel requirement	:	800 litre/day	

Production Details

During First Year Plan Period

Section	Bench RL	Sectional Area (m^2)	Length of influence (m)	Volume (m^3)	95% Recovery	TF	Stones (tonne)

A-B	188-184	690.00	120.00	82800.00	78660.00	3.0	235980.00
A-B	184-178	401.00	108.00	43308.00	41142.60	3.0	123420.00
Total							359400.00

During Second Year Plan Period

Section	Bench RL	Sectional Area (m^2)	Length of influence (m)	Volume (m^3)	95% Recovery	TF	Stones (tonne)
A-B	178-172	723.00	96.00	69408.00	65937.60	3.0	197812.80
A-B	172-166	675.00	84.00	56700.00	53865.00	3.0	161587.20
Total							359400.00

During Third Year Plan Period

Section	Bench RL	Sectional Area (m^2)	Length of influence (m)	Volume (m^3)	95% Recovery	TF	Stones (tonne)
C-D	196-190	810.00	80.00	64800.00	61560.00	3.0	184680.00
C-D	190-184	766.32	80.00	61305.60	58240.00	3.0	174720.00
Total							359400.00

During Fourth Year Plan Period

Section	Bench RL	Sectional Area (m^2)	Length of influence (m)	Volume (m^3)	95% Recovery	TF	Stones (tonne)
C-D	184-178	1576.32	80.00	126105.60	119800.00	3.0	359400.00
Total							359400.00

As per DEIAA EC letter the production is 123012 TPA.

As per the approved scheme of mining dated 30.11.2024 the maximum production is 359400 TPA.

Land Use

Type of land use	Existing	During Plan Period	During	Conceptual

	(ha)	(ha)	Period
Quarry	1.70	2.02	2.24
Infrastructure	Nil	0.03	Nil
Mine roads	0.03	0.01	Nil
Garland drain	Nil	0.08	Nil
Green Belt	0.93	0.93	0.93
Settling Tank	Nil	0.01	Nil
Unmined area	0.51	0.09	Nil
Total	**3.17**	**3.17**	**3.17**

Public Hearing (Action Plan)

SL.No.	Questioner's Name & Address	Questions/Suggestions/issues asked etc.	Unit representative's response/solution	Action plan with budget and timeline
1	Shri Sunil Kishu, Gorga	There is always a problem of pollution in the excavation area. There is a problem of drinking water here. Due to mining work, the water level has gone down. We want this problem to be solved through the revenue obtained from mining.	We have been working on the development of this area and will continue to do so. Necessary measures for pollution control such as water sprinkling are being done. The duration of water sprinkling will be increased.	Sprinkling of water on approach road will be done every day and recurring budget of Rs. 3,00,000/- has been allocated for the same.
2	Shri Devilal	The facility should be made for making Gairaal, Saharaj and Gorga road for commuting.	As much possible cooperation will be provided by talking to the concerned department.	Approach road to the mine will be maintained/repaired every year and a Recurring budget of Rs. 2,00,000/- has been allocated for the same. Cooperation will be done to Road construction of the Garga Village

3	Shri Mani Kisku, Gorga	There is a water problem in the school. A deep Boring should be done here.	We have been distributing school kits to the students in the past years, which will be continued in the future as well. Efforts will be made to have deep boring done in the school by talking to the concerned department.	Distribution of school kits will be done every year to poor students of Garga village. Recurring budget of Rs. 50,000/- will be spent for the same.
4	Shri Lauko Hendram, Gorga Tola Neemdih	There is a problem of drinking water here. Water is supplied from the mine once a day, it should be made available twice a day. The village pond should be repaired. Water should be sprinkled on the road and the people of the colony should be given employment.	Villagers will be provided drinking water through tankers twice a day. We have done work to renovate the village pond and will do it further. Water is sprinkled on the road. The frequency of which will be expanded.	Water Tankers will be purchased and provided to villagers every day for their water need. Recurring budget of Rs. 2,00,000/- has been allocated for the same. Also Rs 50,000/- have been allocated for renovation of village pond. Pond will be renovated with in one year OD from issuance of EC
5	Shri Pyarelal Marandi, Sarpanch, Tola Guridih, Gorga	Jehar place should be surrounded by a boundary wall and a platform should be constructed at Bongaburu and a hand pump should be installed.	Fencing of Jehar place, construction of a platform at Bongaburu and installation of a hand pump will be done.	Amount allocated for fencing of Jehar place is Rs. 50,000/- expenses for construction of platform at Bongaburu is Rs. 50,000/-. A fund of Rs. 40,000/- has been allocated for Installation of one handpump in Garga village. Hand pump will be installed with in one year from date of issuance of EC
6	Smt. Sita Devi, Head of Bajra Panchayat	There is a problem of road and water here. A deep boring is tanker should be arranged for marriages and other social functions. required. A water	Necessary help will be provided in road construction by talking to the concerned department, efforts will be made to solve the water problem. A water tanker will be provided for social work.	Efforts will be made to contact concerned authority for road construction

7	Shri Saheblal Tung, Gorga	Arrangements for drinking water and culverts should be made on the approach road.	As much possible cooperation will be provided by talking to the concerned department	Already mentioned in point no. 04.
8	Shri Jayaram kumar, Pandua	We need employment.	Locals will be given priority in employment as per the required qualifications.	Priority will be given to local people
9	Shri Chhota Apna Soren, Raghunathpur	A bridge worth lakh has been built here but there is no way to go there. There is a need to construct a bridge between Gorga and Raghunathpur. There is a big problem of water here. There are one or two hand pumps which cause a lot of trouble. There is also a problem of electricity here. We have got employment. This should continue in future as well. Keeping in view the inflation, the wages of the workers should be increased.	Efforts will be made to resolve the problems of road and water by talking to the concerned department. We get the broken hand pumps in the area repaired, which will continue to be done in future as well. Locals will be given priority in employment as per the required qualifications. The remuneration is paid as per the remuneration fixed by the state government. Compliance of which will continue in future also.	As already mentioned in point no. 02 above, that approach road will be maintained every year and a Recurring budget of Rs. 2,00,000/- has been allocated for the same. A Recurring budget of 30,000/- has been allocated for repairing of handpumps in Garga village.
10	Shri Ranjit Kumar Dey, Saharaj	We have been working in this niche for two years. We should keep getting work in the future as well.	Locals will be given priority in employment as per the required qualifications.	Local people will be given priority in employment
11	Md. Sahadul Ansari, Saharaj	Right now, we are working in this MICE. Will we get work in future?	-Therefore-	Action not required
12	Smt. Geeta Kisku, Gorga	There is a big problem of water here. Arrangement for a hand pump should be made.	Efforts will be made to solve the water problem through tankers for drinking water.	Already mentioned in point no. 04

13	Shri Jayguru Kisku, Gorga	Everyone raised many issues like we want this, we want that, we want hand pumps etc. I want to say that the gas emitted from blasting is harmful to health. We should take appropriate measures to prevent this.	Blasting is done as per the standards by wet drilling and controlled blasting, due to which the emission of harmful gases is almost negligible. Pollution is checked from time to time.	Blasting will be done as per the standards by wet drilling and controlled blasting, so that emission of harmful gases will be almost negligible. Pollution will be checked from time to time.

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	LOCATION	Area/Length	No of Trees
1	Safety Zone	2.29 acre	3893
2	Haul /Approach Road	1.0 km	668

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP:

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs.
1	Rain Water Harvesting	1,20,000	--
2	Plantation (@Rs. 125 per plant)	5,76,500	2,88,250
3	Environmental Monitoring (One Day Monitoring) • Ambient Air (3 points) 24 hrs – Rs. 5000 • Surface Water(Per Sample) - Rs. 1500 • Ground Water (Per Sample) – Rs. 1500 • Noise (3 points) 24 hrs – Rs. 2000 • Stack Monitoring (D.G. Set) – Rs. 2000 Total -Rs. 12,000 Atleast two season in a Year - Rs. 12,000 x 2= Rs. 24,000	--	24,000

4	Occupational Health (Providing Safety Appliance & Health Check-up)	36,000	36,000
Grand Total		7,32,500	3,48,250

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

Waste generation is almost nil, however if generated it will be weathered rocks and mixed with loose soil that will be used for maintenance of haul/approach road.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.

- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask 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.

- 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 Stone Mining Project of M/s Asit Kumar Mandal Stone Works, Village : Garga, Tehsil : Nirsa, Distt. : Dhanbad, Jharkhand (3.17 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. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.

II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"Ek Ped Ma Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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24. Stone Mining Project of M/s Asit Kumar Mandal Stone Works (Prop. : Sri Asit Kumar Mandal), Village : Garga, Tehsil : Nirsa, Distt. : Dhanbad, Jharkhand (3.72 Ha).

(Proposal No. : SIA/JH/MIN/ 518274/2025).

Name of the consultant : AWS Envirotech (OPC) Pvt. Ltd, Lucknow, U.P.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Environmental Clearance (EC) after ToR.

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 103rd meeting held on 14 - 18.04.2023 and SEIAA, Jharkhand has approved the ToRs in 104th meeting held on 27th & 28th April, 2023. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2022-23/2794/2023/87, dated 03.05.2023. The final EIA / EMP submitted by PP to SEAC on 16.01.2025.

Application for Environmental Clearance (EC) (re-appraisal of Environment Clearance issued by DEIAA, Dhanbad).

The project has been granted EC by DEIAA, Dhanbad vide letter no. EC/ DEIAA/2016-17/15, dated : 17.01.2017.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Dhanbad which has been taken up for consideration on 27.03.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B1.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-13.2 NO2- 19.0 $\mu g/m^3$ · All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 414/M, dated 18.03.2023 by DMO, Dhanbad is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Dhanbad vide memo no. memo no. 70, dated 20.01.2025.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.

ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.

The self certified compliance report has been submitted and also presented before the Committee.

FC Application for: Stone Boulders: Increase in Production Capacity from – 144,000.00Tonne (Max) per year to 448,500.00 tonne (Max) per year

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Stone Mining Project	
2	Lessee:	:	Lessee- Sri Asit Kumar Mandal, S/o Sudhan Chandra Mandal Village- Asanbani, P.O.- Vitiya, P.S.- Govindpur, District - Dhanbad, Jharkhand)	
3	Lease Address	:	Mouza-Garga, Thana- Nirsa, District – Dhanbad, State-Jharkhand	
4	Lease Area	:	3.72 Hectares	Acres- 9.20 Acres
5	Type of Land	:	Government Land	
6	Project Cost	:	Rs. 104.5 Lakhs	
7	EMP Budget	:	Capital: 12.08 Lakhs	Recurring: 5.16 Lakh / year
8	New or Expansion	:	Expansion (production enhancement) (Re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	2,13,5026 tonnes	
10	Mine Life	:	Upto the lease period i.e. 05.11.2017 to 04.11.2027.	
11	Man power	:	35	
12	Water Requirement	:	35.42 KLD (Drinking: 0.525 KLD, Dust Suppression: 19.76 KLD, Plantation: 15.135 KLD)	
13	Water Source	:	Water will be sourced from Abandoned mines through the water tanker for dust suppression and plantation Water will be sourced from a bore well within the lease area for drinking and domestic consumptions.	
14	DG Set / power	:	NA	
15	Crusher	:	NA	
16	Nearest Water Body	:	Baraker River, at approx3.0 km towards NE direction of mine site.	
17	Nearest Habitation	:	Garga, 0.6 km in East Direction	
18	Nearest Rail Station	:	Dhanbad Railway station, approx. 18.0 km in NE direction	
19	Nearest Airport	:	Deoghar Airport, approx.82.0 km towards SW direction.	
20	Nearest Forest	:	Nil	

21	Road & Highways	:	NH-419, Approx. 1.3 km North direction

CO-ORDINATES

Pillars	Latitudes	Longitudes
P 1	23°54'14.01" N	86°38'09.01"E
P 4	23°54'12.00" N	86°38'09.02"E
P 19	23°54'10.12" N	86°38'06.01"E
P 23	23°54'09.26" N	86°38'02.65"E
P 25	23°54'09.06" N	86°38'07.04"E
P 43	23°54'11.09" N	86°38'11.02"E

Land Details:

Khata No	Plot No
72 (old)	495/P (old)
159 (new)	192/P, 286/P (new)

Statutory Clearances:

1	LOI/Lease docs	:	i. The Letter of Intent (LOI) has been issued by District Mining Officer, Dhanbad vide memo no. 1002/M. Dhanbad, dated 04.05.2016. ii. Lease Period: 05.11.2017 to 04.11.2027
2	CO	:	The CO, Nirsa vide letter no. : 469, dated 13.04.2016 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in Khatiyan.
3	DMO	:	DMO, Dhanbad vide memo no. 1758/M. Dhanbad, dated 06.08.2016 certified that 01 other mining lease area (8.02 acre) exists within 500 m radius from proposed project site and total area is 17.22 Acre.
4	DFO Wild Life	:	DFO, Wildlife Hazaribagh vide letter no.: 2298, dated 17.11.2022 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	DFO, Dhanbad vide letter no.: 2613, dated 11.11.2022 certified that the distance of reserved / protected forest is 433 m from proposed project site.
6	DSR	:	The project is mentioned in page No 23 (Point No 86), District

			Survey Report (DSR) of Dhanbad district.
7	Gram Sabha	:	Gram Sabha conducted on 28.04.2016
8	Mine Plan Approval	:	i. DMO, Dhanbad vide memo no. 1950, dated 06.09.2016. ii. Scheme of mining was approved by Additional Director, Geology, Hazaribagh vide memo no 189/G, dated 23.08.2022
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Dhanbad vide letter no : EC/ DEIAA/2016-17/15, dated : 17.01.2017.
10	Consent to Establish (CTE) & Consent to Operate CTO from JSPCB	:	i. **CTE** issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2011610/2018/175, Dated: 14.02.2018. ii. **CTO** issued by JSPCB vide Ref. no. JSPCB/RO/DHN/CTO-8861650/2020/81, Dated : 12.11.2020.
11	Previous Production Figure	:	Previous production figure issued by DMO, Dhanbad vide memo no. 414/M, dated 18.03.2023.
12	Compliance Report	:	The PAs have applied to IRO, MoEF&CC, Ranchi on 12.04.2024. But no response was received by the IRO, MoEF&CC, Ranchi within 03 months of the application. In the light of OM F. no. IA3-22/10/2022-IA.III(E177258), dated 08.06.2022, the PAs have submitted a certified compliance report issued by JSPCB, Dhanbad vide memo no. 70, dated 20.01.2025.
13	Qualified Person	:	Dr. Amarjeet Kumar Singh was present in the meeting and affirmed that the mine plan has been prepared by him.
14	Public Hearing	:	Public Hearing conducted on 25.09.2023.
15	Baseline Monitoring Period	:	March, 2023 to May, 2023.

Working Details

1	Mining Method	:	Opencast. Semi mechanized Mining method, wagon drill with blasting	
2	Quarry Area	:	3.72 ha	Life of Mine – 5.0 years
3	Waste Generation	:	Waste generation-almost nil; weathered rock with mixed soil may be generated, which will be used for development of approach road	
4	Stripping Ratio	:	0: 1	
5	Working Days	:	300	

6	Benches: size & No	:	6m x width not less than 10m
7	Elevation of Mine	:	192 AMSL to 185 AMSL
8	Ground Level Elevation	:	202 AMSL
9	Ultimate Working Depth	:	162 AMSL
10	Water Table	:	158 AMSL
11	Topography of Mine	:	Area represents a small hillock
12	Explosive Requirement	:	828 Kg/day
13	Diesel/Fuel requirement	:	1000 litre/day

Production Details

During First Year Plan Period

Section	Bench RL	Sectional Area (m^2)	Length of influence (m)	Volume (m^3)	95% Recovery	TF	Stones (tonne)
A-A'	180-174	1114.00	100.00	111400.00	105830.00	3.0	317490.00
A-A'	174-168	522.37	88.00	45968.56	43670.13	3.0	131010.00
Total							448500.00

During Second Year Plan Period

Section	Bench RL	Sectional Area (m^2)	Length of influence (m)	Volume (m^3)	95% Recovery	TF	Stones (tonne)
A-A'	174-168	520.00	88.00	45760.00	43472.00	3.0	130416.00
A-A'	168-162	886.00	76.00	67336.00	63969.20	3.0	191907.60
B-B'	180-174	402.48	110.00	44272.80	42059.16	3.0	126176.40
Total							448500.00

During Third Year Plan Period

Section	Bench RL	Sectional Area (m^2)	Length of influence (m)	Volume (m^3)	95% Recovery	TF	Stones (tonne)
B-B'	180-174	415.00	110.00	45650.00	43367.50	3	130102.50
B-B'	174-168	785.00	98.00	76930.00	73083.50	3	219250.50
B-B'	168-162	404.52	86.00	34788.72	33049.28	3	99147.00
Total							448500.00

During Fourth Year Plan Period

Section	Bench RL	Sectional Area (m^2)	Length of influence (m)	Volume (m^3)	95% Recovery	TF	Stones (tonne)
B-B'	168-162	403.00	86.00	34658.00	32925.10	3	98775.30
C-C'	186-180	525.00	130.00	68250.00	64837.50	3	194512.50
C-C'	168-162	461.53	118.00	54460.54	51737.51	3	155212.20
Total							448500.00

As per DEIAA EC letter the production is 144000 TPA.

As per the approved scheme of mining dated 30.11.2024 the maximum production is 448500 TPA.

Land Use

Type of land use	Existing (ha)	During Plan Period (ha)	During Conceptual Period
Quarry	1.97	2.40	2.80
Infrastructure	Nil	0.03	Nil
Approach roads	0.04	0.01	Nil
Garland drain	Nil	0.10	Nil
Green Belt	0.92	0.92	0.92
Settling Tank	Nil	0.01	Nil
Unmined area	0.79	0.25	Nil
Total	**2.93**	**3.47**	**3.72**

Public Hearing (Action Plan)

SL.No.	Questioner's Name & Address	Questions/Suggestions/issues asked etc.	Unit representative's response/solution	Action plan with budget and timeline
1	Shri Sunil Kishu, Gorga	There is always a problem of pollution in the excavation area. There is a problem of drinking water here. Due to mining work, the water level has gone down. We want this problem to be solved through the revenue obtained from mining.	We have been working on the development of this area and will continue to do so. Necessary measures for pollution control such as water sprinkling are being done. The duration of water sprinkling will be increased.	Sprinkling of water on approach road will be done every day and recurring budget of Rs. 3,00,000/- has been allocated for the same.

2	Shri Devilal	The facility should be made for making Gairaal, Saharaj and Gorga road for commuting.	As much possible cooperation will be provided by talking to the concerned department.	Approach road to the mine will be maintained/repaired every year and a Recurring budget of Rs. 2,00,000/- has been allocated for the same. Cooperation will be done to Road construction of the Garga Village
3	Shri Mani Kisku, Gorga	There is a water problem in the school. A deep Boring should be done here.	We have been distributing school kits to the students in the past years, which will be continued in the future as well. Efforts will be made to have deep boring done in the school by talking to the concerned department.	Distribution of school kits will be done every year to poor students of Garga village. Recurring budget of Rs. 50,000/- will be spent for the same.
4	Shri Lauko Hendram, Gorga Tola Neemdih	There is a problem of drinking water here. Water is supplied from the mine once a day, it should be made available twice a day. The village pond should be repaired. Water should be sprinkled on the road and the people of the colony should be given employment.	Villagers will be provided drinking water through tankers twice a day. We have done work to renovate the village pond and will do it further. Water is sprinkled on the road. The frequency of which will be expanded.	Water Tankers will be purchased and provided to villagers every day for their water need. Recurring budget of Rs. 2,00,000/- has been allocated for the same. Also Rs 50,000/- have been allocated for renovation of village pond. Pond will be renovated with in one year OD from issuance of EC
5	Shri Pyarelal Marandi, Sarpanch, Tola Guridih, Gorga	Jehar place should be surrounded by a boundary wall and a platform should be constructed at Bongaburu and a hand pump should be installed.	Fencing of Jehar place, construction of a platform at Bongaburu and installation of a hand pump will be done.	Amount allocated for fencing of Jehar place is Rs. 50,000/- expenses for construction of platform at Bongaburu is Rs. 50,000/-. A fund of Rs. 40,000/- has beer allocated for Installatior of one handpump ir Garga village. Hanc pump will be installec with in one year from date of issuance of EC

6	Smt. Sita Devi, Head of Bajra Panchayat	There is a problem of road and water here. A deep boring is tanker should be arranged for marriages and other social functions. required. A water	Necessary help will be provided in road construction by talking to the concerned department, efforts will be made to solve the water problem. A water tanker will be provided for social work.	Efforts will be made to contact concerned authority for road construction
7	Shri Saheblal Tung, Gorga	Arrangements for drinking water and culverts should be made on the approach road.	As much possible cooperation will be provided by talking to the concerned department	Already mentioned in point no. 04.
8	Shri Jayaram kumar, Pandua	We need employment.	Locals will be given priority in employment as per the required qualifications.	Priority will be given to local people
9	Shri Chhota Apna Soren, Raghunathpur	A bridge worth lakh has been built here but there is no way to go there. There is a need to construct a bridge between Gorga and Raghunathpur. There is a big problem of water here. There are one or two hand pumps which cause a lot of trouble. There is also a problem of electricity here. We have got employment. This should continue in future as well. Keeping in view the inflation, the wages of the workers should be increased.	Efforts will be made to resolve the problems of road and water by talking to the concerned department. We get the broken hand pumps in the area repaired, which will continue to be done in future as well. Locals will be given priority in employment as per the required qualifications. The remuneration is paid as per the remuneration fixed by the state government. Compliance of which will continue in future also.	As already mentioned in point no. 02 above, that approach road will be maintained every year and a Recurring budget of Rs. 2,00,000/- has been allocated for the same. A Recurring budget of 30,000/- has been allocated for repairing of handpumps in Garga village.
10	Shri Ranjit Kumar Dey, Saharaj	We have been working in this niche for two years. We should keep getting work in the future as well.	Locals will be given priority in employment as per the required qualifications.	Local people will be given priority in employment

11	Md. Sahadul Ansari, Saharaj	Right now, we are working in this MICE. Will we get work in future?	-Therefore-	Action not required
12	Smt. Geeta Kisku, Gorga	There is a big problem of water here. Arrangement for a hand pump should be made.	Efforts will be made to solve the water problem through tankers for drinking water.	Already mentioned in point no. 04
13	Shri Jayguru Kisku, Gorga	Everyone raised many issues like we want this, we want that, we want hand pumps etc. I want to say that the gas emitted from blasting is harmful to health. We should take appropriate measures to prevent this.	Blasting is done as per the standards by wet drilling and controlled blasting, due to which the emission of harmful gases is almost negligible. Pollution is checked from time to time.	Blasting will be done as per the standards by wet drilling and controlled blasting, so that emission of harmful gases will be almost negligible. Pollution will be checked from time to time.

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	2.29 acre	3893
2	Haul /Approach Road	:	2.47 km	1652

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP:

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Rain Water Harvesting	1,20,000	--
2	Plantation (@Rs. 125 per plant)	9,12,000	4,56,000

3	Environmental Monitoring (One Day Monitoring) • Ambient Air (3 points) 24 hrs – Rs. 5000 • Surface Water(Per Sample) - Rs. 1500 • Ground Water (Per Sample) – Rs. 1500 • Noise (3 points) 24 hrs – Rs. 2000 • Stack Monitoring (D.G. Set) – Rs. 2000 Total - Rs. 12,000 Atleast two season in a Year - Rs. 12,000 x 2 = Rs. 24,000	--	24,000
4	Occupational Health (Providing Safety Appliance & Health Check-up)	36,000	36,000
Grand Total		**12,08,000**	**5,16,000**

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

- Waste Generation is almost nil, however if generated will be weathered rocks mixed with loose soil that will be used for maintenance of Haul/approach Road.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be

constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside

- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask 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**"

<u>Preventive Measures:</u>

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 clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Stone Mining Project of M/s Asit Kumar Mandal Stone Works (Prop. : Sri Asit Kumar Mandal), Village : Garga, Tehsil : Nirsa, Distt. : Dhanbad, Jharkhand (3.72 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

I. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.

II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*Ek Ped Ma Ke Naam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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1. Chatnia Stone Mine of M/s Mahavir Infra Enterprises (Partners : Shri Brajkishore Tiwari & Shri Bhaskar Bhushan), Village : Chatnia, Block & Thana : Chatra, Distt. : Chatra, Jharkhand (1.38 Ha)

   (Proposal no.: SIA/JH/MIN/ 501134 /2024)

   The project vide proposal no. SIA/JH/MIN/ 501134 /2024 was issued ToR as it was categorized as B1 project as per earlier DMO, Chatra certificate issued vide memo no. 1104, dated 08.10.2024. Now as per fresh DMO, Chatra certificate issued vide memo no. 303, dated 05.03.2025, the cluster area less than 5 Ha. Hence, PAs have applied for fresh EC under B2 category and also requested to closer of earlier proposal no. SIA/JH/MIN/ 501134 /2024.

   Hence, the Committee agreed to accept the request for closer of earlier proposal no. SIA/JH/MIN/ 501134 /2024 and recommends for closer of the same.

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2. Chatnia Stone Mine of M/s Mahavir Infra Enterprises (Partners : Shri Brajkishore Tiwari & Shri Bhaskar Bhushan), Village : Chatnia, Block & Thana : Chatra, Distt. : Chatra, Jharkhand (1.11 Ha)

   (Proposal no.: SIA/JH/MIN/ 501114 /2024)

   The project vide proposal no. SIA/JH/MIN/ 501114 /2024 was issued ToR as it was categorized as B1 project as per earlier DMO, Chatra certificate issued vide memo no. 1103, dated 08.10.2024. Now as per fresh DMO, Chatra certificate issued vide memo no. 304 dated 05.03.2025, the cluster area less than 5 Ha. Hence, PAs have applied for fresh EC under B2 category and also requested to closer of earlier proposal no. SIA/JH/MIN/ 501114 /2024.

   Hence, the Committee agreed to accept the request for closer of earlier proposal no. SIA/JH/MIN/ 501114 /2024 and recommends for closer of the same.

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The meeting concluded with thanks to all present.

Ashok Kumar Dubey, IFS (Retd.)
Member

Dr. Ajay Govind Bhatt
Member

Niranjan Lal Agarwalla
Member

Dr. Raju Kumar
Member

Srikant Verma, IFS
Member Secretary

Ashok Kumar Singh, IFS (Retd.)
Chairman

The TORs prescribed for undertaking detailed EIA study are as follows:

A. Standard Terms of Reference

1. Executive Summary

2. Introduction
   i. Details of the EIA Consultant including NABET accreditation.
   ii. Information about the project proponent
   iii. Importance and benefits of the project

3. Project Description

   i. Cost of project and time of completion.
   ii. Products with capacities for the proposed project.
   iii. If expansion project, details of existing products with capacities and whether adequate land is available for expansion, reference of earlier EC if any.
   iv. List of raw materials required and their source along with mode of transportation.
   v. Other chemicals and materials required with quantities and storage capacities
   vi. Details of Emission, effluents, hazardous waste generation and their management.
   vii. Requirement of water, power, with source of supply, status of approval, water balance diagram, man-power requirement (regular and contract)
   viii. Process description along with major equipments and machineries, process flow sheet (quantative) from raw material to products to be provided
   ix. Hazard identification and details of proposed safety systems.
   x. Expansion/modernization proposals:

      a. Copy of all the Environmental Clearance(s) including Amendments thereto obtained for the project from MOEF/SEIAA shall be attached as an Annexure. A certified copy of the latest Monitoring Report of the Regional Office of the Ministry of Environment, Forest and Climate Change as per OM no. F.no. IA3-22/10/2022-IA.III [E 177258], dated 08th June, 2022 on the status of compliance of conditions stipulated in all the existing environmental clearances including Amendments shall be provided. In addition, status of compliance of Consent to Operate for the ongoing / existing operation of the project from SPCB shall be attached with the EIA-EMP report.
      b. In case the existing project has not obtained environmental clearance, reasons for not taking EC under the provisions of the EIA Notification 1994 and/or EIA Notification, 2006 shall be provided. Copies of Consent to Establish/No Objection Certificate and Consent to Operate (in case of units operating prior to EIA Notification 2006, CTE and CTO of FY 2005-2006) obtained from the SPCB shall be submitted. Further, compliance report to the conditions of consents from the SPCB shall be submitted.

4. **Site Details**

i. Location of the project site covering village, Taluka/Tehsil, District and State, Justification for selecting the site, whether other sites were considered.

ii. A toposheet of the study area of radius of 10km and site location on 1:50,000/1:25,000 scale on an A3/A2 sheet. (including all eco-sensitive areas and environmentally sensitive places)

iii. Details w.r.t. option analysis for selection of site

iv. Co-ordinates (lat-long) of all four corners of the site. .

v. Google map-Earth downloaded of the project site.

vi. Layout maps indicating existing unit as well as proposed unit indicating storage area, plant area, greenbelt area, utilities etc. If located within an Industrial area/Estate/Complex, layout of Industrial Area indicating location of unit within the Industrial area/Estate.

vii. Photographs of the proposed and existing (if applicable) plant site. If existing, show photographs of plantation/greenbelt, in particular.

viii. Landuse break-up of total land of the project site (identified and acquired), government/ private - agricultural, forest, wasteland, water bodies, settlements, etc shall be included. (not required for industrial area)

ix. A list of major industries with name and type within study area (10km radius) shall be incorporated. Land use details of the study area

x. Geological features and Geo-hydrological status of the study area shall be included.

xi. Details of Drainage of the project upto 5km radius of study area. If the site is within 1 km radius of any major river, peak and lean season river discharge as well as flood occurrence frequency based on peak rainfall data of the past 30 years. Details of Flood Level of the project site and maximum Flood Level of the river shall also be provided. (mega green field projects)

xii. Status of acquisition of land. If acquisition is not complete, stage of the acquisition process and expected time of complete possession of the land.

xiii. R&R details in respect of land in line with state Government policy

5. **Forest and wildlife related issues (if applicable):**

i. Permission and approval for the use of forest land (forestry clearance), if any, and recommendations of the State Forest Department. (if applicable)

ii. Landuse map based on High resolution satellite imagery (GPS) of the proposed site delineating the forestland (in case of projects involving forest land more than 40 ha)

iii. Status of Application submitted for obtaining the stage I forestry clearance along with latest status shall be submitted.

iv. The projects to be located within 10 km of the National Parks, Sanctuaries, Biosphere Reserves, Migratory Corridors of Wild Animals, the project proponent shall submit the map duly authenticated by Chief Wildlife Warden showing these features vis-à-vis the project location and the recommendations or comments of the Chief Wildlife Warden-thereon

v. Wildlife Conservation Plan duly authenticated by the Chief Wildlife Warden of the State Government for conservation of Schedule I fauna, if any exists in the study area

vi. Copy of application submitted for clearance under the Wildlife (Protection) Act, 1972, to the Standing Committee of the National Board for Wildlife.

6. **Environmental Status**

i. Determination of atmospheric inversion level at the project site and site-specific micro- meteorological data using temperature, relative humidity, hourly wind speed and direction and rainfall.

ii. AAQ data (except monsoon) at 8 locations for PM10, PM2.5, SO2, NOX, CO and other parameters relevant to the project shall be collected. The monitoring stations shall be based CPCB guidelines and take into account the pre-dominant wind direction, population zone and sensitive receptors including reserved forests.

iii. Raw data of all AAQ measurement for 12 weeks of all stations as per frequency given in the NAQQM Notification of Nov. 2009 along with - min., max., average and 98% values for each of the AAQ parameters from data of all AAQ stations should be provided as an annexure to the EIA Report.

iv. Surface water quality of nearby River (100m upstream and downstream of discharge point) and other surface drains at eight locations as per CPCB/MoEF&CC guidelines.

v. Whether the site falls near to polluted stretch of river identified by the CPCB/MoEF&CC, if yes give details.

vi. Ground water monitoring at minimum at 8 locations shall be included.

vii. Noise levels monitoring at 8 locations within the study area.

viii. Soil Characteristic as per CPCB guidelines.

ix. Traffic study of the area, type of vehicles, frequency of vehicles for transportation of materials, additional traffic due to proposed project, parking arrangement etc.

x. Detailed description of flora and fauna (terrestrial and aquatic) existing in the study area shall be given with special reference to rare, endemic and endangered species. If Schedule- I fauna are found within the study area, a Wildlife Conservation Plan shall be prepared and furnished.

xi. Socio-economic status of the study area.

7. **Impact and Environment Management Plan**

i. Assessment of ground level concentration of pollutants from the stack emission based on site-specific meteorological features. In case the project is located on a hilly terrain, the AQIP Modelling shall be done using inputs of the specific terrain characteristics for determining the potential impacts of the project on the AAQ. Cumulative impact of all sources of emissions (including transportation) on the AAQ of the area shall be assessed. Details of the model used and the input data used for modelling shall also be provided. The air quality contours shall be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any.

ii. Water Quality modelling - in case of discharge in water body

iii. Impact of the transport of the raw materials and end products on the surrounding environment shall be assessed and provided. In this regard, options for transport of raw materials and finished products and wastes (large quantities) by rail or rail-cum road transport or conveyor- cum-rail transport shall be examined.

iv. A note on treatment of wastewater from different plant operations, extent recycled and reused for different purposes shall be included. Complete scheme of effluent treatment. Characteristics of untreated and treated effluent to meet the prescribed standards of discharge under E(P) Rules.

v. Details of stack emission and action plan for control of emissions to meet standards.

vi. Measures for fugitive emission control.

vii. Details of hazardous waste generation and their storage, utilization and management. Copies of MOU regarding utilization of solid and hazardous waste in cement plant shall also be included. EMP shall include the concept of waste-minimization, recycle / reuse / recover techniques, Energy conservation, and natural resource conservation.

viii. Proper utilization of fly ash shall be ensured as per Fly Ash Notification, 2009. A detailed plan of action shall be provided.

ix. Action plan for the green belt development plan in 33 % area i.e. land with not less than 2500 trees per ha. Giving details of species, width of plantation, planning schedule etc. shall be included. The green belt shall be around the project boundary and a scheme for greening of the roads used for the project shall also be incorporated.

x. Action plan for rainwater harvesting measures at plant site shall be submitted to harvest rainwater from the roof tops and storm water drains to recharge the ground water and also to use for the various activities at the project site to conserve fresh water and reduce the water requirement from other sources.

xi. Total capital cost and recurring cost/annum for environmental pollution control measures shall be included.

xii. Action plan for post-project environmental monitoring shall be submitted.

xiii. Onsite and Offsite Disaster (natural and Man-made) Preparedness and Emergency Management Plan including Risk Assessment and damage control. Disaster management plan should be linked with District Disaster Management Plan.

8. Occupational health

i. Plan and fund allocation to ensure the occupational health & safety of all contract and casual workers

ii. Details of exposure specific health status evaluation of worker. If the workers' health is being evaluated by pre designed format, chest x rays, Audiometry, Spirometry, Vision testing (Far & Near vision, colour vision and any other ocular defect) ECG, during pre placement and periodical examinations give the details of the same. Details regarding last month analyzed data of above mentioned parameters as per age, sex, duration of exposure and department wise.

iii. Details of existing Occupational & Safety Hazards. What are the exposure levels of hazards and whether they are within Permissible Exposure level (PEL). If these are not within PEL, what measures the company has adopted to keep them within PEL so that health of the workers can be preserved,

iv. Annual report of heath status of workers with special reference to Occupational Health and Safety.

9. Corporate Environment Policy

i. Does the company have a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report.

ii. Does the Environment Policy prescribe for standard operating process / procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions? If so, it may be detailed in the EIA.

iii. What is the hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the environmental clearance conditions? Details of this system may be given.

iv. Does the company have 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? This reporting mechanism shall be detailed in the EIA report

10. Details regarding infrastructure facilities such as sanitation, fuel, restroom etc. to be provided to the labour force during construction as well as to the casual workers including truck drivers during operation phase.

11. 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.

12. Enterprise Social Commitment (ESC)

i. Adequate funds (at least 2.5 % of the project cost) shall be earmarked towards the Enterprise Social Commitment based on Public Hearing issues and item-wise details along with time bound action plan shall be included. Socio-economic development activities need to be elaborated upon.

13. Any litigation pending against the project and/or any direction/order passed by any Court of Law against the project, if so, details thereof shall also be included. Has the unit received any notice under the Section 5 of Environment (Protection) Act, 1986 or relevant Sections of Air and Water Acts? If so, details thereof and compliance/ATR to the notice(s) and present status of the case.

14. A tabular chart with index for point wise compliance of above TOR.

B. SPECIFIC TERMS OF REFERENCE FOR EIA STUDIES FOR METALLURGICAL INDUSTRIES (FERROUS & NON FERROUS)

1. Complete process flow diagram describing each unit, its processes and operations, along with material and energy inputs & outputs (material and energy balance).
2. Details on blast furnace/ open hearth furnace/ basic oxygen furnace/ladle refining, casting and rolling plants etc.
3. Details on installation/activation of opacity meters with recording with proper calibration system
4. Details on toxic metals including mercury, arsenic and fluoride emissions
5. Details on stack height requirement for integrated steel
6. Details on ash disposal and management -Non-ferrous metal
7. Complete process flow diagram describing production of lead/zinc/copper/ aluminium, etc.
8. Raw materials substitution or elimination
9. Details on smelting, thermal refining, melting, slag fuming, and Waelz kiln operation
10. Details on Holding and de-gassing of molten metal from primary and secondary aluminum, materials pre-treatment, and from melting and smelting of secondary aluminium
11. Details on solvent recycling
12. Details on precious metals recovery
13. Details on composition, generation and utilization of waste/fuel gases from coke oven plant and their utilization.
14. Details on toxic metal content in the waste material and its composition and end use (particularly of slag).
15. Trace metals Mercury, arsenic and fluoride emissions in the raw material.
16. Trace metals in waste material especially slag.
17. Plan for trace metal recovery
18. Trace metals in water

C. Other

1. Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the F.R for securing the TOR) should be brought to the attention of SEIAA, Jharkhand with reasons for such changes and permission should be sought, as the TOR may also have to be altered.
2. The Prescribed ToRs is valid as per O.M. F. No. IA3-22/10/2022-IA.III[E177258], dated 08.06.2022 of MoEF&CC, Govt. of India.

I. Statutory compliance

i. 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-IAJI (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). 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 ail 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 wall 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-IAII (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 PPshall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.

V. Mining Plan

i. The Project Proponent shall adhere to the working parameters of mining plan which was submitted at the time of EC appraisal wherein year-wise plan was mentioned for total excavation i.e. quantum of mineral, waste, over burden, inter burden and top soil etc.. No change in basic mining proposal like mining technology, total excavation, mineral & waste production, lease area and scope of working (viz. method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode, ultimate depth of mining etc.) shall not be carried out without prior approval of the Ministry of Environment, Forest and Climate Change, which entail adverse environmental impacts, even if it is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form to Short Term Permit (STP), Query license or any other name.

ii. The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance approved from Indian Bureau of Mines/Department of Mining & Geology as required under the Provision of the MMDR Act, 1957 and Rules/ Guidelines made there under. A copy of approved final mine closure plan shall be submitted within 2 months of the approval of the same from the competent authority to the concerned Regional Office of the Ministry of Environment, Forest and Climate Change for record and verification.

iii. The land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis-à-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self sustaining. The compliance status shall be submitted half-yearly to the MoEF&CC and its concerned Regional Office.

VI. Land reclamation

i. The Overburden (O.B.) generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by D.G.M.S w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of top soil/OB dumps. The topsoil shall be used for land reclamation and plantation.

ii. The reject/waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of the waste dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of waste dumps.

iii. The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.

iv. The slope of dumps shall be vegetated in scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and help in adaptation of plant species to the microclimate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer/ compactors thereby ensuring proper filling/ leveling of dump mass. In critical areas, use of geo textiles/ geo-membranes / clay liners / Bentonite etc. shall be undertaken for stabilization of the dump.

v. The Project Proponent shall carry out slope stability study in case the dump height is more than 30 meters. The slope stability report shall be submitted to concerned regional office of MoEF&CC.

vi. Catch drains, settling tanks and ponds of appropriate size shall be constructed around the mine working, mineral yards and Top Soil/OB/Waste dumps to prevent run off of water and flow of sediments directly into the water bodies (Nallah/ River/ Pond etc.). The collected water should be utilized for watering the mine area, roads, green belt development, plantation etc. The drains/ sedimentation

sumps etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly.

vii. Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining area which shall also help in providing adequate retention time period thereby allowing proper settling of sediments/ silt material. The sedimentation pits/ sumps shall be constructed at the corners of the garland drains.

viii. The top soil, if any, shall temporarily be stored at earmarked site(s) within the mine lease only and should not be kept unutilized for long. The physical parameters of the top soil dumps like height, width and angle of slope shall be governed as per the approved Mining Plan and as per the guidelines framed by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of dumps. The topsoil shall be used for land reclamation and plantation purpose.

VII. Transportation

i. No Transportation of the minerals shall be allowed in case of roads passing through villages/ habitations. In such cases, PP shall construct a 'bypass' road for the purpose of transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers.

ii. The Main haulage road within the mine lease should be provided with a permanent water sprinkling arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipments like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be

fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.

VIII. Green Belt

i. The Project Proponent shall develop greenbelt in 7.5m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 years starting from windward side of the active mining area. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.

ii. The Project Proponent shall carryout plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall also be adhered. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for protection and care of trees.

iii. The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensate those areas which are coming within the mine lease. The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted.

iv. The Project Proponent shall undertake all precautionary measures for conservation and protection of endangered flora and fauna and Schedule-I species during mining operation. A Wildlife Conservation Plan shall be prepared for the same clearly delineating action to be taken for conservation of flora and fauna. The Plan shall be approved by Chief Wild Life Warden of the State Govt.

v. And implemented in consultation with the State Forest and Wildlife Department. A copy of Wildlife Conservation Plan and its implementation status (annual) shall be submitted to the Regional Office of the Ministry.

IX. Public hearing and human health issues

i. The Project Proponent shall appoint an Occupational Health Specialist for Regular as well as Periodical medical examination of the workers engaged in the mining activities, as per the DGMS guidelines. The records shall be maintained properly.

PP shall also carryout Occupational health check-ups in respect of workers which are having ailments like BP, diabetes, habitual smoking, etc. The check-ups shall be undertaken once in six months and necessary remedial/ preventive measures be taken. A status report on the same may be sent to MoEF&CC Regional Office and DGMS on half-yearly basis.

ii. The Project Proponent must demonstrate commitment to work towards 'Zero 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

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.

xlii. A Disaster management Plan shall be prepared and included in the EIA/EMP Report.

xliii. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.

xliv. Besides the above, the below mentioned general points are also to be followed :-

a) Executive Summary of the EIA/EMP Report

b) All documents to be properly referenced with index and continuous page numbering.

c) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.

d) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF & CC / NABL accredited laboratories. All the original analysis / testing reports should be available during appraisal of the Project.

e) Where the documents provided are in a language other than English, an English translation should be provided.

f) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.

g) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF& CC vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.

h) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF & CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.

i) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.

j) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

xlv. After preparing the draft EIA (as per the generic structure prescribed in Appendix- III of the EIA Notification, 2006) covering the above mentioned issues, the proponent will get the public hearing conducted and take further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.

xlvi. The Prescribed ToRs is valid as per O.M. F. No. IA3-22/10/2022-IA.III[E177258], dated 08.06.2022 of MoEF&CC, Govt. of India.

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-peaking 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, 20L.6.,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 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 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, the 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. 1804(E) dated [illegible] of MoEF&CC, Govt. of India.