

MINUTES OF THE 124TH MEETING OF STATE LEVEL EXPERT APPRAISAL COMMITTEE (SEAC), JHARKHAND HELD ON 23RD, 24TH, 25TH, 26TH AND 27TH JUNE, 2025.

The 124th meeting of State Level Expert Appraisal Committee (SEAC), Jharkhand was held on 23rd, 24th, 25th, 26th and 27th June, 2025 under the Chairmanship of Shri Ashok Kumar Singh IAS (Retd.) in the Conference Room at SEAC, Ranchi.

The following members were present:

1. Shri Ashok Kumar Singh, IAS (Retd.)	- Chairman
2. Shri Niranjali Lal Agarwala	- Member
3. Dr. Raju Kumar	- Member
4. Shri Ashok Kumar Dubey, IAS (Retd.)	- Member (Absent)
5. Dr. Ajay Gajend Bhatt	- Member
6. Shri Srikant Verma, IAS	- Member Secretary

The various projects applied in SEAC for the technical appraisal after the last SLAC meeting held on 07th, 08th, 09th, 10th and 11th May, 2025. These projects have been put up for discussions. Besides, these Projects, wherein PPs 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 :-

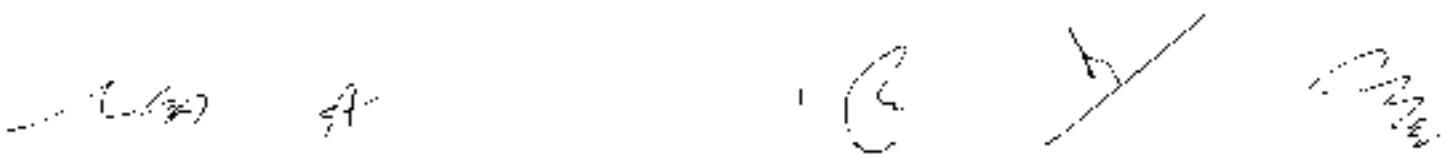
Day 1 : June 23rd, 2025 (Monday)

- A. Matter related to Nauaikola Sand Ghat in the river bed of Ajay of M/s Jharkhand State Mineral Development Corporation Ltd., Village : Nauaikola, Circle : Karmatand, Distt. : Jamtara, Jharkhand (6.28 Ha). (Proposal no.: SIA/JH/MIN/ 535981 /2025)**

In the previous meeting of SEAC convened on 07th to 11th May, 2025 this project was recommended for deferment.

The PAs through their consultant had requested for delisting of the proposal.

Accordingly, this project is being recommended for delisting.



B. Corrigendum EC for :

- i. **Dev Pahar Stone Mine of Shri Suresh Singh, Village : Dev Pahar, Thana : Borio, Distt. : Sahibganj, Jharkhand (2.124 Ha) (Proposal no.: SIA/JH/MIN/ 536002 /2025)**

The PA's vide online application no. SIA/JH/MIN/ 536002 /2025 has requested for necessary correction in Environmental Clearance issued vide letter no. EC/SEIAA/2024-25/3634 /2024/61, dated 16.04.2025 with regard to **Life of Mine** as it was erroneously provided by PAs, the revised details is being given below :-

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

EC application for : Proposed Capacity- 51136 Cum (Max.) / 143181 Tons.

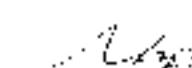
Project and Location Details:

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	10 years.
11	Man power	22 Person
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

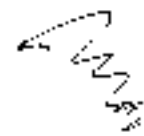
16	Nearest Water Body	Ganga River 9.53 Km in North Direction.
17	Nearest Habitation	Totuliyā Village – 0.81 Km in SW Direction
18	Nearest Rail Station	Karanpuratō Railway Station is at Aerial distance of 7 km in E direction.
19	Nearest Air Port	Deoghar Airport is at Aerial distance of 124 km SW direction.
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 097m, after that, this road connects to village road. The village road continues for 3.0 km and after this the road connects to SH-18 (Dumka – Sahibganj Road)

CO-ORDINATES

Point Name	Latitude	Longitude
1	25° 09' 03.65070176" N	087° 39' 52.14775076" E
2	25° 09' 04.19219787" N	087° 39' 53.00529544" E
3	25° 09' 04.94348705" 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' 55.83463205" E
7	25° 09' 06.80800923" N	087° 39' 56.03665109" E
8	25° 09' 05.79372724" N	087° 39' 56.32760519" E
9	25° 09' 04.77946412" N	087° 39' 56.01857929" E
10	25° 09' 03.81970575" N	087° 39' 56.96689550" E
11	25° 09' 02.85004520" N	087° 39' 57.31511172" E
12	25° 09' 02.22839192" N	087° 39' 57.69375459" E
13	25° 09' 01.59682765" N	087° 39' 58.07219747" E
14	25° 09' 00.88074352" N	087° 39' 57.64642423" E
15	25° 09' 00.45231058" N	087° 39' 56.84120812" 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' 59.44213127" N	087° 39' 55.93576981" E
20	25° 08' 59.25881650" N	087° 39' 55.60445720" E
21	25° 08' 59.22821475" N	087° 39' 55.37456698" E
22	25° 08' 59.10580432" N	087° 39' 54.81336415" E







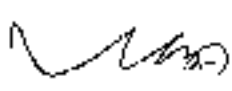
23	25° 08' 59.14864776" N	087° 39' 54.42119831" E
24	25° 08' 58.76305661" N	087° 39' 52.92014977" E
25	25° 08' 59.13640678" N	087° 39' 52.72406685" E
26	25° 08' 59.41794932" N	087° 39' 52.84577349" E
27	25° 08' 59.94431097" N	087° 39' 52.97424161" E
28	25° 09' 00.71549086" N	087° 39' 53.12975565" E
29	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. Khatryan & Register II.
3	DMO Cluster	: 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	Land Certificate	DMO, Sahibganj vide memo no. 322, 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	Open cast Mechanized Method
2	Quarry Area	2.124Ha (During plan period) Life of Mine – 10 year
3	Waste Generation	23421 cum. O.B (During plan period)
4	Stripping Ratio	07:10
5	Working Days	300
6	Bench 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 – 287.15 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	37968	7.3	106313	127	354	13691	46
2nd	48960	2.8	137088	163	457	7208	24

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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	0.69/km	528
TOTAL			1856

The SEAC considered the same and recommends for issuance of corrigendum EC with corrected details as stated above. Other terms & conditions mentioned in the previous EC letter no. EC/SEIAA/2024-25/3634 /2024/61, dated 16.04.2025 shall remain the same.

- ii. 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/536066 /2025)

The PA's vide online application no. SIA/JH/MIN/ 536066 /2025 has requested for necessary correction in Environmental Clearance issued vide letter no. EC/SEIAA/2024-25/3639 /2024/61, dated 15.04.2025 with regard to capacity of DG Set as it was erroneously provided by PA's, the revised details is being given below :

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

Proposed Capacity- 30210 Cum. (Max.) / 84588 Tons (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 Gura Prasad Yadav, Address Q.No - 79, Sector -15, Bokaro Steel City, District- Bokaro
4	Lease Area	2.17 Ha

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5	Type of Land	:	Non Forest Ralyati 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	:	40 KVA D.G. Set proposed
15	Crusher	:	Yes
16	Nearest Water Body	:	Amanat River – 3.26 km – N direction (arial distance).
17	Nearest Habitation	:	Chainpur
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' 51.61941203" N	086° 03' 17.22130659" E
11	23° 35' 51.65251248" N	086° 03' 17.60951995" E
12	23° 35' 51.40964199" N	086° 03' 17.85555778" E
13	23° 35' 51.45630398" N	086° 03' 18.17591444" E
14	23° 35' 51.85756426" N	086° 03' 18.04323555" E
15	23° 35' 52.40553557" N	085° 03' 17.92629211" E
16	23° 35' 52.24945294" N	086° 03' 18.59333258" E
17	23° 35' 52.56352453" N	086° 03' 18.75345013" E
18	23° 35' 53.02649239" N	086° 03' 18.90211466" E
19	23° 35' 53.72418339" N	086° 03' 19.12129721" E
20	23° 35' 54.33248811" N	086° 03' 19.32045539" E
21	23° 35' 54.74962000" N	026° 03' 19.16339450" E
22	23° 35' 55.35177294" N	085° 03' 18.80675587" E
23	23° 35' 55.70813643" N	086° 03' 18.58393644" E
24	23° 35' 56.23042368" N	086° 03' 18.63262877" 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' 55.92066596" N	086° 03' 19.97228021" E
28	23° 35' 55.33842163" N	086° 03' 21.09707314" E
29	23° 35' 55.03276948" N	085° 03' 21.70490476" E
30	23° 35' 54.91485387" N	085° 03' 21.72137614" E
31	23° 35' 54.46117415" N	086° 03' 21.54211035" E
32	23° 35' 53.97029615" N	086° 03' 21.76596783" E
33	23° 35' 53.84818091" N	086° 03' 20.96106487" E
34	23° 35' 53.72625750" N	086° 03' 20.66380722" E
35	23° 35' 53.01360848" N	085° 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' 22.89462720" 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' 49.60148710" 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' 21.56316153" 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' 47.30903055" N	085° 03' 19.84926373" E
49	23° 35' 47.54632000" N	086° 03' 19.36435359" E
50	23° 35' 47.85574352" N	086° 03' 18.84376265" E

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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. 7950/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 Cluster	: DMO, Bokaro vide memo no. 375/Khanan, dated 07.03.2025 certified that 01 lot (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	7.17 Ha. (During plan period)	Life of Mine – 10 year
3	Waste Generation	24996 cum O.B (During plan period)	
4	Stripping Ratio	12:05	
5	Working Days	300	
6	Bench size	6 m x 6 m	
7	Elevation of Mine	252 to 256 m AMSL	
8	Ground Level Elevation	256 m AMSL	
9	Ultimate Working Depth	28 m & 221 m AMSL	
10	Water Table	(During pre-monsoon) 15.39 m 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 – 273.31 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	2.9	500%	60	167	3612	12
2nd	30210	2.8	84588	101	282	10890	36
3rd	29070	2.8	81396	97	271	10194	35
4th	27908	2.8	64142	76	214	0	0
5th	16744	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

The SEAC considered the same and recommends for issuance of corrigendum EC with corrected details as stated above. Other terms & conditions mentioned in the previous EC letter no. EC/SEIAA/2024-25/3639 /2024/31, dated 15.04.2025 shall remain the same.

- iii. 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/ 536079 /2025)

The PA's vide online application no. SIA/JH/MIN/ 536079 /2025 has requested for necessary correction in Environmental Clearance issued vide letter no. EC/SEIAA/2024-25/3644

/2024/16, dated 15.04.2025 with regard to Life of Mine as it was erroneously provided by FAs, the revised details is being given below :

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

EC application for : Proposed Capacity- 39744 Cum. (Max.) / 111283 Tons

Project and Location Details:

Sl	Parameter	Details
		Telo Stone Mine
1	Project Name	Project Type – Stone Mine
		M/S YAS Minerals
		Partners
2	Lessee	1. Shri Yogendra Prasad 2. Shri Arjun Prasad 3. Shri Suresh Prasad
		M/S YAS Minerals
		Partners
3	Lessee Address	Shri Yogendra Prasad S/o Shri Uma Charan Mahto, Vill + P.O. - Telo, Tola - Madap, Thana - Chandrapura, District- Bokaro 2. Shri Arjun Prasad S/o Late Tejab Chandra Kumar, Vill + P.O. - Telo, Tola- Labanch, Thana- Chandrapura, District- Bokaro 3. Shri Suresh Prasad S/o Late Jagdish Mahto, Vill + P.O- Telo, Marchaitans, Thana Chandrapura, District- Bokaro
4	Lease Area	1.75 Ha
5	Type of Land	Non Forest Rorayat Land
6	Project Cost	Capital Cost – Rs. 173.14 Lakhs 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	10 years.
11	Man power	30 Person
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	:	Jiridanga Village
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' 26.30477092" 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

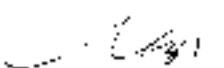
P25	23° 49' 01.55444355" N	086° 06' 26.68351677" E
P26	23° 49' 01.88344351" N	086° 06' 26.94763152" E
P27	23° 49' 02.06817502" N	086° 06' 27.18567676" E
P28	23° 49' 02.34407052" N	086° 06' 27.36278600" E
P29	23° 49' 02.59966063" N	086° 06' 27.53772105" E
P30	23° 49' 02.87005318" N	086° 06' 28.12472419" E
P31	23° 49' 02.07930354" N	086° 06' 28.75607893" E
P32	23° 49' 01.62155972" N	086° 06' 29.51177094" E
P33	23° 49' 01.341563913" N	086° 06' 30.13243268" E
P34	23° 49' 01.01463370" N	086° 06' 30.68346427" E
P35	23° 49' 00.54841385" N	086° 06' 30.47963188" E
P36	23° 49' 00.21044553" N	086° 06' 30.18718176" E
P37	23° 48' 59.69254765" N	086° 06' 29.92493254" E
P38	23° 48' 59.24262551" N	086° 06' 29.72044642" E
P39	23° 48' 58.61930344" N	086° 06' 29.53587911" E
P40	23° 48' 58.05963400" N	086° 06' 29.31659239" E

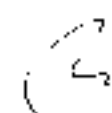
LAND DETAILS

Khata no.	Plot no.
103 & 210	1080, 1082 (A) & 1088

STATUTORY CLEARANCES

1. LOI / Lease docs	The Letter of Intent (LOI) has been issued by District Mining Officer, Bokaro vide memo no. 1753/Knanan, 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 Land" in R.S. Khatiyan & Register I
3. DMO Cluster	DMO, Bokaro vide memo no. 374/Knanan, 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 Wildlife	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. 21/5, 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 (Lol 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 – 10 year
3	Waste Generation	: 14208 cum. O-B (During plan period)
4	Stripping Ratio	: 01:01
5	Working Days	: 300
6	Bench: 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)

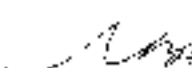
Production Details

Year	Production of Stone / Year			Per Day Production		Removal of Q.B.		
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum {O.B.	Production in CFT/Year
1st	53744	2.8	111283	132	371	14208	47	1403559.35
2nd	31680	2.8	83704	106	296	0	0	1118779.2
3rd	24480	2.8	68544	82	228	0	0	864511.7
4th	18144	2.8	50803	60	169	0	0	540753.36
5th	20736	2.8	58061	69	194	0	0	732291.84
Total	134784	2.8	377395	132 {Max.}	371 {Max.}	14208	47	4759806.96

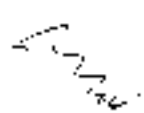
LAND USE

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	0.033	Plantation
3	Bumping	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	0.827	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

The SEAC considered the same and recommends for issuance of corrigendum EC with corrected details as stated above. Other terms & conditions mentioned in the previous EC letter no. EC/SEIAA/2024-25/3644 /2024/16, dated 15.04.2025 shall remain the same.

- iv. **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/ 536072 /2025)**

The PA's vide online application no. SIA/JH/MIN/ 536072 /2025 has requested for necessary correction in Environmental Clearance issued vide letter no. EC/SEIAA/2024-25/3641 /2024/21, dated 15.04.2025 with regard to **Life of Mine** as it was erroneously provided by PAs, the revised details is being given below .

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

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

	2) 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) Smt Bhudev Chandra Mahata S/o Kishan Lal Mahata R/o V.P. P.O. - Bhogdih, Thana - Chandankuan Dist - Bokaro, Jharkhand
4	Lease Area	2.41 Ha
5	Type of Land	Non Forest Fallow Land
6	Project Cost	Capital Cost - Rs. 146.74 Lakhs Returning Cost - Rs. 19.99 Lakhs
7	FMP Budget	Capital Cost - Rs. 166.48 Lakhs Returning Cost - Rs. 5.59 Lakhs
8	New or Expansion	New
9	Mineable Reserves	cum: 113622 cum Tonnes, 55228 tons
10	Mine Life	10 years.
11	Man power	25 Person
12	Water Requirement	5.52 KL/D (Drinking) 0.375 KL/D (Fire Suppression) 0.444 KL/D Plantation: 4 x 0.04 KL/D
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	Colut Village 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 - 1570 Dated: 05.07.2022, 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 14 Km 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' 22.60957789" N	086° 15' 12.21952022" E

3
29

h

2022

Uda A

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' 35.25674084" 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' 20.78467984" 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' 34.48893582" 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' 33.73039866" N	086° 15' 21.63587940" E
P45	23° 41' 33.58430899" N	086° 15' 21.80660430" E
P46	23° 41' 33.53882495" N	086° 15' 22.00370169" E
P47	23° 41' 33.49433315" N	086° 15' 22.27769720" E
P48	23° 41' 33.24317877" N	086° 15' 22.07065430" E
P49	23° 41' 32.93255305" N	086° 15' 21.75490294" E
P50	23° 41' 32.80826935" N	086° 15' 21.51790652" E
P51	23° 41' 32.35876601" N	086° 15' 21.33628664" E
P52	23° 41' 32.15345703" N	086° 15' 21.25732130" E
P53	23° 41' 31.90866417" N	086° 15' 21.3368169" E
P54	23° 41' 31.57701009" N	086° 15' 21.27311435" E
P55	23° 41' 31.27170016" N	086° 15' 21.32366584" E
P56	23° 41' 31.23745908" N	086° 15' 21.3757693" E
P57	23° 41' 31.09532147" N	086° 15' 21.25722130" E
P58	23° 41' 31.04114623" 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' 21.203880455" E
P61	23° 41' 30.78918417" N	086° 15' 20.61433621" E
P62	23° 41' 30.52781782" N	086° 15' 20.50150662" E
P63	23° 41' 30.11709904" N	086° 15' 20.38408033" E
P64	23° 41' 29.92821221" N	086° 15' 20.822780287" 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' 28.95756738" N	086° 15' 20.41286206" E
P68	23° 41' 29.02331147" N	086° 15' 20.272817742" E
P69	23° 41' 29.17281088" N	086° 15' 19.92185488" E
P70	23° 41' 29.43403170" N	086° 15' 20.02670026" 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' 20.08185391" E
P74	23° 41' 30.67058094" N	086° 15' 20.27374895" E
P75	23° 41' 31.21527678" N	086° 15' 20.71257478" E
P76	23° 41' 31.42293026" 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' 31.86136905" N	086° 15' 18.14165709" 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' 30.52455315" N	086° 15' 17.63421316" E

A

B

C

D

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' 31.80170764" 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 Cluster	:	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	:	Divisional 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	OSR	This project is mentioned in approved OSR of Bokaro District (SI no. 16, Page no. 87)
7	Gram Sabha	ROO 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 Assistant Director, Geology, District Geological Office, Koderma vide letter No. 53, dated 07.03.2025
9	Qualified Person	Sanjiv Kumar Mukhopadhyay vide letter dated 25.03.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	Open cast/Mechanized Method
2	Quarry Area	2.41 Ha Life of Mine - 10 year
3	Waste Generation	3526 Cum
4	Stripping Ratio	44.05
5	Working Days	300
6	Bench size	6 m x 6 m
7	Elevation of Mine	183m - 170m AMSL
8	Ground Level	178 AMSL
9	Elevation	
10	Ultimate Working Depth	162.7 m AMSL
11	Water Table	Post Monsoon - 17.7 m AMSL Pre Monsoon - 21.26 m AMSL
12	Topography of Mine	Area represents gently sloping land.
13	Explosive Requirement	36.95 kg slurry explosive
14	Diesel/Fuel requirement	150 - 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	345	13746	46

23/11/23 A

23/11/23

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	0.11km	188
	TOTAL		1568

The SEAC considered the same and recommends for issuance of corrigendum EC with corrected details as stated above. Other terms & conditions mentioned in the previous EC letter no. EC/SEIAA/2024-25/3641 /2024/21, dated 15.04.2025 shall remain the same.

- v. Bekhuri Stone Mine of M/s Dhanbad Wine (Prop. : Shri Shankar Singh), Village : Bekhuri, Thana : Taljhari, Distt. : Sahibganj, Jharkhand (1.549 Ha) (Proposal no.: SIA/JH/MIN/ 536103 /2025)

The PA's vide online application no. SIA/JH/MIN/ 536103 /2025 has requested for necessary correction in Environmental Clearance issued vide letter no. EC/SEIAA/2024-25/2653 /2024/32, dated 15.04.2025 with regard to Life of Mine as it was erroneously provided by PAs, the revised details is being given below :

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

EC Application for: Proposed Capacity: 55.84DCum. / annum or 1,56,352 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Bekhuri 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, B/o P.O. : P.S. : Mahipat, Distt. Jamtara (Jharkhand).
4	Lessee Area	1.549 Ha
5	Type of Land	Non Forest Rayer Land
6	Project Cost	Capital Cost: Rs. 118.14Lakhs Recurring Cost: Rs. 19.45Lakhs
7	BMP Budget	Capital Cost: Rs. 8.57Lakhs Recurring Cost: Rs. 5.78Lakhs
8	New or Expansion	New
9	Mineable Reserves	cum. 5,06,560cum Tonnes: 14,18,868 tons
10	Mine Life	10 years.

11	Man power	: 33 Person
12	Water Requirement	: 5.934 KLD (Drinking: 0.495 KLD, Dust Suppression: 0.96 KLD, Plantation: 3.759 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 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	: Deopghar 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' 23.91739674" 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' 19.52742144" E	25° 02' 21.94194561" N
23	087° 42' 18.89341975" E	25° 03' 22.14757242" N
24	087° 42' 18.12854975" E	25° 03' 22.46805148" N

LAND DETAILS

Khata no.	Plot no.
01 & 10	2 (P) & 3 (P)

STATUTORY CLEARANCES

1. FOL / 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. CG	The CG, Talihar vide letter no. 09/2017 dated 12.09.2017 has mentioned the plot no. of the project is not recorded as "Jungle-land" in R.B. Khatryn & Register II.
3. DMO Cluster	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-In-charge Wildlife Sanctuary, Lethwa (Sahibganj) vide letter no. 1383, dated 29.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Lethwa Bird Sanctuary
5. DFO Territorial	Divisional Forest Officer, Sahibganj Forest Division vide letter no. 2951, dated 01.10.2020 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site
6. CSR	This project is mentioned in approved CSR 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 Mukhonadhyay 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
3	Waste Generation	: 54080 cum
4	Stripping Ratio	: 13:08
5	Working Days	: 300
6	Bench: 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

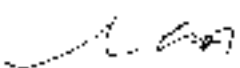
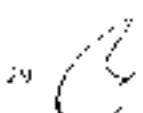
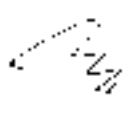
2	Offices/ Store etc	0.000	0.000	0.000	0.000	Plantation included in Mining Area
3	Dumping	0.000	0.050	0.000	0.000	Water body included within safety zone
4	Mining Road	0.000	0.000	0.000	0.000	
5	Garland drain	0.000	0.026	0.000	0.026	
6	Settling Tank	0.000	0.000	0.000	0.000	
7	Green belt	0.000	0.000	0.000	0.000	Green Belt Plantation
8	Safety Zone	0.000	0.383	0.000	0.383	
9	Stone Stock yards	0.000	0.000	0.000	0.000	
10	Unutilized	1.549	0.000	0.000	0.000	
11	Crozier	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	540
2	Along Approach Road	0.240km	613
	TOTAL		1253

The SEAC considered the same and recommends for issuance of corrigendum EC with corrected details as stated above. Other terms & conditions mentioned in the previous EC letter no. EC/SEIAA/2024-25/3653 /2024/42, dated 15.04.2025 shall remain the same.

- vi. **Tetaria Stone Deposit of M/s Md. Alam and Brothers (Prop. : Mr. Mahatab Alam), Village : Tetaria, Thana : Taljharl, Distt. : Sahibganj, Jharkhand (2.93 Ha) (Proposal no.: SIA/JH/MIN/ 536001 /2025)**

The PA's vide online application no. SIA/JH/MIN/ 536001 /2025 has requested for necessary correction in Environmental Clearance issued vide letter no. EC/SEIAA/2024-25/3596 /2024/55, dated 16.04.2025 with regard to **Life of Mine** as it was erroneously provided by PAs, the revised details is being given below

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

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:	Mahatab Alam
3	Lessee Address	M/5 Md Alam And Brothers Proprietor: Mahatab Alam 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 Expansion	New
9	Mineable Reserves	6,05,286 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	: Gilaman Village
18	Nearest Rail Station	: Taljhari Railway Station, at 6.61 Km – NE direction (aerial distance)
19	Nearest Airport	: Deoghar Airport (Deoghar), 120.21 Km – NW direction (aerial distance)
20	Nearest Forest	: DFO, Sahibganj, letter no - 1075 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 approach road is 0.24km, after that this road connects to NH-53 at distance 8.77 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°42'2.250" E
11	25°2'34.059" N	87°42'1.921" E
12	25°2'34.013" N	87°42'2.002" 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 "Tungle-Jhari" in R.S. Khatyan & Register II.

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10/5/24

3	DMO Cluster	:	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 – 10 year
3	Waste Generation	:	18,288cum. O.B (During plan period)
4	Stripping Ratio	:	49:10
5	Working Days	:	300
6	Benchest 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	3.00	2,08,735	12,748	19,122	3662
2nd	69,548	3.00	2,08,543	5340	8010	3660
3rd	69,365	3.00	2,08,093	1768	2652	3650
4th	69,427	3.00	2,08,279	Nil	Nil	3655
5th	69,557	3.00	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 Barrier	Nil
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

The SEAC considered the same and recommends for issuance of corrigendum EC with corrected details as stated above. Other terms & conditions mentioned in the previous EC letter no. EC/SEIAA/2024-25/3596 /2024/55, dated 16.04.2025 shall remain the same.

- vii. **Amba Stone Mine of Shri Sanjay Kumar Sah, Village : Amba, Thana : Masaliya, Distt. : Dumka, Jharkhand (1.28 Ha). (Proposal no.: SIA/JH/MIN/ 531889 /2025)**

The PA's vide online application no. SIA/JH/MIN/ 531889 /2025 has requested for necessary correction in EC Issued vide letter no. EC/SEIAA/2024-25/3373 /2024/467, dated 06.01.2025 with regard to capacity of DG Set as it was erroneously provided by PAs, the revised details is being given below :

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

EC Application for: Proposed Capacity: 24,867 Cum. / annum or 67,141 TPA

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Amba Stone Mine
2	Lessee.	: Proprietor- Shri Sanjay Kumar Sah
3	Lessee Address	: S/o Shri Munilal Sah R/o Vill + Post- Palajori, Thana- Palajori, Dist- Deoghar, Jharkhand
4	Lease Area	: 1.28 Ha
5	Type of Land	: Non Forest Baiyati Land
6	Project Cost	Capital Cost: Rs. 101.59 Lakhs Recurring Cost: Rs. 9.3 Lakhs
7	EMP Budget	Capital Cost: Rs. 8.772Lakhs Recurring Cost: Rs. 5.809 Lakhs

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8	New or Expansion	New
9	Mineable Reserves	cum. 79648 Cum tonnes. 624759 tons
10	Mine life	5 years
11	Man power	1/Person
12	Water Requirement	6.17KLD (Drinking, 0.25 KLD. Dust Suppression, 2.02KLD Plantation, 3.90 KLD)
13	Water Source	From Nearby villages by tankers
14	OG Set / power	30 KVA O.G. Set proposed
15	Crusher	Yes
16	Nearest Water Body	Jepra river at 14.52 km North direction
17	Nearest Habitation	Amraa Village in SW Direction
18	Nearest Rail Station	Jama Railway Station at aerial distance of 22 km at NE direction
19	Nearest Air Port	Deophar Airport at aerial distance of 42 km at North West direction
20	Nearest Forest	More than 250 m, as per Division Forest Officer Dumka letter no. 2187 Dated 22/08/2022
21	Road & Highways	The distance of Approach Road is 505m, after that the road connects to Village Road continuing about 0.83 km after that the road connects to a MDR.

CO-ORDINATES

Point Name	Longitude	Latitude
1	087° 01' 03.76112158" E	24° 11' 08.45702444" N
2	087° 01' 09.06234310" E	24° 11' 08.96736762" N
3	087° 01' 09.44780650" E	24° 11' 09.67043639" N
4	087° 01' 09.89714790" E	24° 11' 10.38172038" N
5	087° 01' 10.26146350" E	24° 11' 10.99896623" N
6	087° 01' 10.62578410" E	24° 11' 11.61621175" N
7	087° 01' 10.11389007" E	24° 11' 11.92735479" N
8	087° 01' 10.40212330" E	24° 11' 12.40801708" N
9	087° 01' 10.59055653" E	24° 11' 12.88868009" N
10	087° 01' 11.22671975" E	24° 11' 12.98712964" N
11	087° 01' 11.76194193" E	24° 11' 12.28557900" N
12	087° 01' 12.33847744" E	24° 11' 11.95103699" N
13	087° 01' 12.74762742" E	24° 11' 12.51822043" N
14	087° 01' 13.15677759" E	24° 11' 13.07540320" N
15	087° 01' 13.93926884" E	24° 11' 12.68835404" N
16	087° 01' 14.03850020" E	24° 11' 12.21785988" N

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(Handwritten signatures and marks)

17	087° 01' 14.13763156" E	24° 11' 11.74696523" N
18	087° 01' 14.28119021" E	24° 11' 11.19654084" N
19	087° 01' 14.42474887" E	24° 11' 10.64611579" N
20	087° 01' 14.12518826" E	24° 11' 10.03072633" N
21	087° 01' 13.82562765" E	24° 11' 09.41533605" N
22	087° 01' 13.54488048" E	24° 11' 08.83859363" N
23	087° 01' 13.19161271" E	24° 11' 08.21163998" N
24	087° 01' 12.83834495" E	24° 11' 07.58468546" N
25	087° 01' 12.55998801" E	24° 11' 07.09067675" N
26	087° 01' 12.23149603" E	24° 11' 07.67522369" N
27	087° 01' 12.16334448" E	24° 11' 08.10619593" N
28	087° 01' 12.34586775" E	24° 11' 08.81501652" N
29	087° 01' 12.23149603" E	24° 11' 10.08366101" N
30	087° 01' 11.84728556" E	24° 11' 10.33573304" N
31	087° 01' 11.18125525" E	24° 11' 09.93063912" N
32	087° 01' 10.81906800" E	24° 11' 09.40405931" N
33	087° 01' 10.49964363" E	24° 11' 08.93965146" N
34	087° 01' 10.15883783" E	24° 11' 08.44415683" N
35	087° 01' 09.81803202" E	24° 11' 07.94866166" N
36	087° 01' 09.28957680" E	24° 11' 08.20284312" N

LAND DETAILS

Khata no.	Plot no.
5, 9 & 21	410, 411 & 415

STATUTORY CLEARANCES

1	LOI / Lease docs	The Letter of Intent (LOI) has been issued by District Mining Officer, Dumka vide letter no. 971/M, dated 17.08.2024.
2	CO	The CO, Masaliya (Dumka) vide letter no. 62/Ra., dated 27.01.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyon & Register II.
3	DMO Cluster	DMO, Dumka vide memo no. 1001/M, dated 28.08.2024 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. 562, dated 23.03.2024 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.

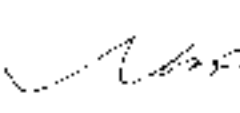
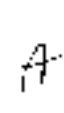
		2187, dated 22.08.2022 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	CSE	This project is mentioned in approved DSR of Dumsa District (Sl. no. 53, Page no. 159)
7	Gram Sabha	Gram Sabha conducted on 05.07.2022
8	Mine Plan Approval	Approved by District Mining Officer, Dumka vide letter No. 1207/KI, dated 22.10.2024
9	Qualified Person	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

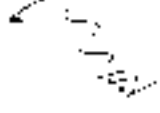
Working Details

1	Mining Method	Opencast Semi Mechanized Method
2	Quarry Area	1.2814 Life of Mine – 5 years
3	Waste Generation	12416 cum
4	Stripping Ratio	03.05
5	Working Days	300
6	Bench size	2 m x 3 m.
7	Elevation of Mine	240m – 235m AMSL
8	Ground Level	237 AMSL
9	Elevation Ultimate Working Depth	27 m AMSL
10	Water Table	Post Monsoon – 55 m AMSL Pre Monsoon – 50m AMSL
11	Topography of Mine	Area represents gently sloping land.
12	Explosive Requirement	26.7 kg Slurry explosives/day
13	Diesel/Fuel requirement	ESD – 246 liters / day (73.5 KL/year)

Production Details

Year	Production of stone / Year			Per Day Production		Removal of O.B.	
	Cum	TF	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.)
1st	19760	2.7	53552	66	175	12416	41

2nd	24867	2.7	67141	83	224	0	0
3rd	21645	2.7	58441	72	195	0	0
4th	7114	2.7	19207	24	64	0	0
5th	6262	2.7	16908	21	56	0	0
Total	79648		215050	83 (max)	224 (max)	12416	41

Land Use pattern

Sl. No.	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	Mining Activities	0.000	0.693	0.693	Water body
2	Offices/ Store etc.	0.000	0.000	0.000	Plantation
3	Dumping	0.000	0.039	0.039	Plantation
4	Mining Road	0.000	0.000	0.000	Water body
5	Garland drain	0.000	0.036	0.036	-
6	Settling Tank	0.000	0.014	0.014	-
7	Green belt	0.000	0.000	0.000	Green Belt
8	Safety Zone	0.000	0.373	0.373	Plantation
9	Stone Stock yards	0.000	0.000	0.000	
10	Unutilized	1.28	0.000	0.000	
11	Crusher	0.00	0.125	0.125	
Total		1.280	1.280	1.280	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone/ Dumping	0.412 Ha	659
2	Along Approach Road	0.505m	642
TOTAL			1,301

The SEAC considered the same and recommends for Issuance of corrigendum EC with corrected details as stated above. Other terms & conditions mentioned in the previous EC letter no. EC/SEIAA/2024-25/3373 /2024/467, dated 06.01.2025 shall remain the same.

- viii. 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/ 537010 /2025)

The PA's vide online application no. SIA/JH/MIN/ 537010 /2025 has requested for necessary correction in EC issued vide letter no. EC/SEIAA/2024-25/3602 /2024/44, dated 16.04.2025. The PAs had erroneously mentioned the Proposed Production capacity as 71904.26 cum/annum or 2,02241.32 TPA in place of Proposed Capacity- 14994.99 cum/annum or 40, 486.47 TPA.

The SEAC considered the same and recommends for issuance of corrigendum EC with corrected details as stated above. Other terms & conditions mentioned in the previous EC letter no. EC/SEIAA/2024-25/3602 /2024/44, dated 16.04.2025 shall remain the same.

- ix. Barmartola Itra Stone Block of M/s F.D. Enterprises & Construction Pvt. Ltd., Village : Itra, Tehsil : Kuru, Distt. : Lohardaga, Jharkhand (0.81 Ha). (Proposal No. SIA/JH/MIN/ 536110 /2025).

The PA's vide online application no. SIA/JH/MIN/ 536110 /2025 has requested for necessary correction in EC issued vide letter no. EC/SEIAA/2023-24/3003 /2023/376, dated 02.11.2023. The PAs had erroneously mentioned Earth work / Soil Mining in place of Stone Mining. Further the production table mentioned the capacity as Cum per year in place of Tonnes per year, the revised details is being given below :

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

EC Application for : Proposed production capacity for Stone Mining (9095.55 cum Per Annum / 24558 Tonnes Per Annum)

PROJECT and LOCATION Details:

Sl	Parameter	Details
1	Project Name	Barmartola Itra Stone Block
2	Tessee:	M/s F.D. Enterprises & Construction Pvt. Ltd
3	Lease Address	Village: Itra, Tehsil: Kuru, Distt.: Lohardaga
4	Lease Area	0.81 Ha Acres: 2.00
5	Type of Land	Non Forest & Government Land

6	Project Cost	:	37.00 Lakhs
7	EMP Budget	:	Capital: 34.157 Lakhs Recurring: 0.787 Lakh / year
8	CSR / CER Budget	:	NIL
9	New or Expansion	:	New Project
10	Mineable Reserves	:	Cu.M.: 90956 Tonnes: 245581
11	Mine Life	:	10 years
12	Man power	:	10
13	Water Requirement	:	32.20 KLD=1.20 KLD (Drinking & Domestic Uses) + 1.00 KLD (Plantation) KLD + 30 KLD (Dust Suppression).
14	Water Source	:	Hired water tankers from authorize source.
15	DG Set / power	:	0 KVA
16	Crusher	:	--
17	Nearest Water Body	:	South Koel River, Approx. 3.50 Km towards North East direction
18	Nearest Habitation	:	Lohardaga approx. 5 Km
19	Nearest Rail Station	:	Lohardaga Railway Station, 19Km.
20	Nearest Air Port	:	Birsa Airport Ranchi, approx. 50 km away.
21	Nearest Forest	:	Huddu Pahar open mix jungle, 300m away.
22	Road & Highways	:	National Highway is about 5 Km away.

CO-ORDINATES

1	Latitude	From 23°29'21.91"N	To 23°29'25.51"N
2	Longitude	From 84°53'35.45"E	To 84°53'40.23"E

LAND DETAILS :

KHATA No.	PLOT No.
203 (new)	1643 (new)
172 (old)	1334 (old)

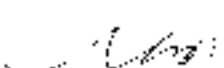
STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by Director of Mines, Deptt. of Mines & Geology, Govt. of Jharkhand vide letter no. Kha. Ni (Nilami)-12/2022/ 1995, dated 20.09.2022.
2	CO	:	The CO, Kuru vide letter no. 1047, dated 01.12.2022 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R S. Khatiyan & Register II.

3	DMO Cluster	DMO, Lonardaga vide memo no. 1144/M, dated 30.09.2023 certified that no other mining lease area exists within 500 m radius from proposed project site
4	DFO Wildlife	DFO Wildlife Division, Ranchi vide letter no. 908, dated 01.10.2022 certified that the proposed project site is outside Eco Sensitive Zone of Palat Wildlife Sanctuary.
5	DFO Territorial	Divisional Forest Officer, Lonardaga Forest Division vide letter no. 2712, dated 13.10.2022 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 Lonardaga district (SI No. 04, Page no. 41).
7	Gram Sabha	BDO, Kuma vide letter no. 1255/3a, dated 02.12.2022 informed that Gram Sabha conducted on 07.11.2022
8	Mine Plan Approval	Approved by BMC, Lonardaga vide letter No. 471/M dated 08.10.2022.

Working Details

1	Mining Method	Open cast Mechanized Mining
2	Quarry Area	5 years = 0.93 ha Life of Mine = 10 Year
3	Waste Generation	5 years = Life of Mine = 10 Year
4	Stripping Ratio	NA
5	Working Days	200
6	Benchies, size & No	6m x 6m
7	Elevation of Mine	Highest elevation: 690m AMSL Lowest elevation: 688m AMSL
8	Ground Level Elevation	699 m AMSL to 684m AMSL
9	Ultimate Working Depth	691 m AMSL
10	Water Table	648.73 m AMSL (Post Monsoon) Source-Approved DSR (Stone)
11	Topography of Mine	Undulatory
12	Explosive	No
13	Reconnaissance	







13	Diesel/Fuel requirement	:	300 Litres /day	

Production Details

Year	Annual Production (Cum)	Annual Production (Tonne)
1st	9095.555	24558.00
2nd	9095.555	24558.00
3rd	9095.555	24558.00
4th	9095.555	24558.00
5th	9095.555	24558.00
Total	45,477.775	1,22,790.00

Land Use

Type of land use	Present Land Use (In Ha.)	At the end of Plan Period (In Ha.)	At the end of life of mines (In Ha.)	Conceptual Stage
Quarry	0.07	0.53	0.57	Converted in Water Body
Infrastructure	0.00	0.01	0.00	--
Road	0.01	0.01	0.01	Public Use
Garland Drain	0.00	0.02	0.00	--
Green Belt Within Safety Barrier	0.23	0.23	0.23	Plantation
Settling tank	0.00	0.1	0.00	--
Total area in use	0.31	0.81	0.81	
Balance area unused	0.50	0.00	0.00	
Total Applied area	0.81	0.81	0.81	

Protection Measures for Post Mine Closure Action Plan

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

A warning sign board will be erected at the site giving general information about the hazards at the site.

The periphery of the water reservoir pit will be secured by constructing a parapet wall or gabion walls.

Plantation is also proposed at the backfilled area along with around the benches.

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION	Area (Ha.)	No. of Trees
1	Safety Zone	0.73	250
2	Approach Road	0.03	80
Total		0.26	330

The SEAC considered the same and recommends for issuance of corrigendum EC with corrected details as stated above. Other terms & conditions mentioned in the previous EC letter no. EC/SEIAA/2023-24/3003 /2023/329, dated 02.11.2023 shall remain the same.

- k. 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/ 536606 /2025}

The FA's vide online application no. SIA/JH/IND1/ 53606 /2025 has requested for necessary correction in amendment EC issued vide letter no. EC/SEIAA/2024-25/4591 /2024/73, dated 16.04.2025. The amendment EC issued had inadvertently mentioned the for letter number in place of the previous EC letter no. EC/SEIAA/2022-23/2674/2022/257, dated 01.09.2023.

The SEAC considered the same and recommends for issuance of corrected EC as stated above. Other terms & conditions mentioned in the previous EC letter no. EC/SEIAA/2022-23/2674 /2022/257, dated 01.09.2023 shall remain the same along with following specific condition :

- In compliance of OM no I No. IA3-22/3/2024-PA II (E-24/594) 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 Nann" and the details of the same shall be uploaded in the Merial FF Portal (<https://merilff.mca.gov.in>). 10% of the total green belt proposed shall be allocated under this clause.

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[Handwritten signatures and initials]

C. Corrigendum ToR for Demba Stone Mine of M/s Mahaveer Engicons Pvt. Ltd., Village : Demba, Thana : Jirwabari, Distt. : Sahibganj, Jharkhand (4.84 Ha.) (Proposal no.: SIA/JH/MIN/ 541951 /2025)

The PA's vide online application no. SIA/JH/MIN/ 541951 /2025 has requested for necessary correction in ToR issued vide letter no. EC/SEIAA/2024-25/3563 /2024/660, dated 20.03.2025. The PAs had erroneously mentioned the Proposed Production capacity and mineable reserve, the revised details is being given below :

ToR Application for: Proposed Capacity- 1,55,588 cum/annum or 4,20,088 TPA.

Project and Location Details:

S/	Parameter	Details
1	Project Name	: Demba Stone Mine
2	Lessee:	: Proponent: M/S Mahaveer Engicons Pvt. Ltd. Director: Shri Rajkumar Pandey
3	Lease Address	: Village : Demba, Thana : Jirwabari, Distt. : Sahibganj, Jharkhand.
4	Lease Area	: 4.84 ha. 11.95 Acres
5	Type of Land	: Non-Forest (Raiyati Land)
6	Project Cost	: Rs. 113.04 Lakhs
7	EMP Budget	: Capital: Rs. 7.49 Lakhs Recurring: 5.73 Lakhs / year
8	New or Expansion	: DEIAA to SEIAA (re-appraisal of DEIAA/EC)
9	Mineable Reserves	: 3597895.60 Tons
10	Mine Life	: Upto the lease period i.e. 18.01.2018 to 17.01.2028.
11	Man power	: 40
12	Water Requirement	: 5.84 KLD (Drinking: 0.600 KLD, Dust Suppression: 0.64 KLD, Plantation: 4.60 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 – 7.60 Km in NE direction (aerial distance).
17	Nearest Habitation	: Demba Village 1.51km East direction.
18	Nearest Railway Station	: Karamtola Railway Station at 3.50 km (aerial distance) NW direction
19	Nearest Air Port	: Deoghar Airport 123.60 Km (aerial distance) at SW direction.
20	Nearest Forest	: More than 250m, as per DFO Territorial, Sahibganj, vide letter no.: 1/62 Dated: 12/09/2017
21	Road & Highways	: NH-33 at 2.72 km (aerial distance) in North-East direction

The SEAC considered the same and recommends for issuance of corrigendum ToR with corrected details as stated above. Other terms & conditions mentioned in the previous ToR letter no. EC/SEIAA/2024-25/3563 /2024/660, dated 20.03.2025 shall remain the same.

2. **Kordar Stone Mine of M/s Mahadev Black Stone Company (Partner : Shri Bhagwan Bhagat), Village : Kordar, Tehsil : Sahibganj, Distt. : Sahibganj, Jharkhand (2.83 Ha).**

(Proposal no.: SIA/JH/MIN/ 538465 /2025)

The above mentioned project was considered in the light of section 11 of EIA Notification, 2006 and OM no. IA3-22/19/2023-IA.III (E-226246), dated 19.02.2025 of MoEF&CC, Govt. of India for transferability of Environmental Clearance. The Environmental Clearance granted by then DEIAA, Sahibganj vide its letter no. EC/DEIAA/2016-17/118, dated 26.12.2016 in the favour of **Kordar Stone Mine of M/s Mahadev Black Stone Company (Partner : Shri Dipak Kukreja) on plot no. 01 (P), 15 (P), 16 (P), 17 (P) & 22 (P), Khata no. 05 & 12, Village : Kordar, P.O. : Ranga, Thana : Taljhari, Distt. : Sahibganj, Jharkhand (2.835 Ha).**

The PAs vide online application no. SIA/JH/MIN/ 538465 /2025 has requested to transfer of Environmental Clearance Kordar Stone Mine of M/s Mahadev Black Stone Company (Partner : Shri Bhagwan Bhagat) for which he has submitted "No Objection Certificate" affirming that the Environmental Clearance will be transfer in favour of "**Kordar Stone Mine of M/s Mahadev Black Stone Company (Partner : Shri Bhagwan Bhagat)**" and they do not have any objection regarding the transfer of Environmental Clearance all the terms & conditions of Environmental Clearance dated 26.12.2016 shall be complied by **Kordar Stone Mine of M/s Mahadev Black Stone Company (Partner : Shri Bhagwan Bhagat)**. Deputy Commissioner, Sahibganj vide GRN no. 2211430161, dated 28.05.2022 for the period of 07.06.2022 to 06.06.2032 for an area 7.00 Acre or 2.83 Ha.

The DMO, Sahibganj also certify vide memo no. 896/M, dated 17.05.2025 that the said project falls under grid no. 98 and production is within the over all permissible production limit.

It is observed that Deputy Commissioner, Sahibganj transferred the lease deed in the name of **Kordar Stone Mine of M/s Mahadev Black Stone Company (Partner : Shri Bhagwan Bhagat)** and as per direction of OM no. IA3 22/19/2023-IA.III (E-226246), dated 19.02.2025 of MoEF&CC, Govt. of India application for transfer of EC after of period of 24 months from the date of transfer / acquisition/ demerger / change in name etc. of the company, the PAs shall apply on PARIVESH Portal with detailed justification for delay in applying for transfer of EC with the Certified Compliance Report (CCR) for the project from the concerned Regional Office of the Ministry (MoEF&CC, Govt. of India).

In the light of above direction of MoEF&CC, Govt. of India PAs have obtained the CCR from MoEF&CC, Regional Office, Ranchi issued vide F. no. 111 12/ROR-2025/246, dated 22.04.2025. The PAs have also submitted the action taken report to MoEF&CC, Regional Office, Ranchi vide letter dated 01.05.2025.

The PAs have also provided detailed justification to SEAC stating that the mines has not been in operation since 31.03.2020 untill the present period. The PAs were also not aware as to whether the transfer of LC would be undertaken prior to re-appraisal DEIAA ECs.

The PAs stated that they have initiated the process of re-appraisal of DEIAA EC and transfer of EC after approval of updated DSR in 120th meeting of SEIAA held on 28th and 29th January, 2025 based on the recommendation of SEAC.

Accordingly, SEAC accepted the justification and recommends for condonation of the reason of delay in the process of transfer of Environmental Clearance issued vide letter no. EC/DEIAA/2016-17/118 dated 26.12.2016 in favour of Kordar Stone Mine of M/s Mahadev Black Stone Company (Partner : Shri Bhagwan Bhagat) with the same terms & condition under which prior environmental clearance was granted by then DEIAA, Samagari for the same validity period.

3. Proposed Residential Complex namely "The Skyline" of Dhatre Udyog Limited, Village : Dindli, Tehsil : Gambaria, Distt. : Saraikela - Kharsawan, Jharkhand.

(Proposal no.: SIA/IH/ INFRA2 /535335 /2025)

A copy of a complaint dated 14.05.2025 from a group of persons addressed to the Municipal Commissioner, Adityapur Municipal Corporation, Adityapur, Jharkhand regarding the siting of the project has been received by SEIAA 26.05.2025.

Accordingly, the Member Secretary, SEAC to write a letter to Municipal Commissioner, Adityapur Municipal Corporation, Adityapur, Jharkhand alongwith the copy of the complaint received to provide his opinion on the contents of the complaints.

Accordingly, the project will be taken up for consideration after getting report from the Municipal Commissioner, Adityapur Municipal Corporation.

4. **Bindri Bandarkola Stone Mine of M/s Swastik Stone Crusher {Partner : Shri Ajay Choudhari}, Village : Bindri Bandarkola, Tehsil : Borlo, Distt. : Sahibganj, Jharkhand (2.832 Ha).**

(Proposal no.: SIA/JH/MIN/ 540706 /2025)

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

This is a new project which has been taken for appraisal on 29.06.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity – 388066 Tonnes per year or 138595 cum per year

Project and Location Details:

Sl. No.	Parameter	Details	
1	Project Name	Bindri Bandarkola Stone Mine	
2	Lessee:	M/s Swastik Stone Crusher, Partner: Sri Ajay Choudhary	
3	Lessee Address	Address: S/o Late Rajendra Kumar Choudhary, R/o Soran Bhawan, Modl Road Near Gadia Nagar Hall, P.S. + Dist – Jhujhnu (Rajasthan) & Others	
4	Mine Lease Area	2.832 Ha.	7.0 Acre
5	Type of Land	Non-Forest Raiyati Land	
6	Project Cost	Capital: Rs. 1864000	
7	EMP Budget	Capital: Rs. 546000	Recurring: Rs. 744120 per year
8	New or Expansion	New	
9	Mineable Reserves	1175275 Cum	3290770 Tonnes
10	Mine Life	10 Years	
11	Man power	37	
12	Water Requirement	18.06 KLD	
13	Water Source	By authorised hired water tankers	
14	DG Set / power	-	
15	Crusher	No crusher	
16	Nearest Water Body	Ganga River (13.80 Km)	
17	Nearest Habitation	Hathikhuta Village at a distance of 1.5 Km	
18	Nearest Rail Station	Taljhari Railway Station at a distance of 10.25Km	

19	Nearest Air Port	: Deoghar at a distance of 116.50 Km
20	Nearest Forest	: Nearest forest is 272 m away as per Divisional Forest Officer, Sahibganj reserved / protected forest is more than 250 meter from proposed project site.
21	Road & Highways	: 70 m Approach Road

CO ORDINATES

PILLAR NO	LATITUDE	LONGITUDE
P1	25°03'11.18113200" N	87°38'41.07648120" E
P2	25°03'11.70404780" N	87°38'42.36376880" E
P3	25°03'12.77699000" N	87°38'43.65005280" E
P4	25°03'12.87567000" N	87°38'45.24644040" E
P5	25°03'13.52439000" N	87°38'46.84282800" E
P6	25°03'14.17510840" N	87°38'48.42921560" E
P7	25°03'14.82182280" N	87°38'50.02560320" E
P8	25°03'15.05947880" N	87°38'50.45534520" E
P9	25°03'15.01353020" N	87°38'50.91577440" E
P10	25°03'11.70703800" N	87°38'51.50789520" E
P11	25°03'11.18846960" N	87°38'50.26285120" E
P12	25°03'10.77990120" N	87°38'49.01781120" E
P13	25°03'09.93299760" N	87°38'46.04418680" E
P14	25°03'09.71064800" N	87°38'45.15077360" E
P15	25°03'08.64077680" N	87°38'43.77062760" E
P16	25°03'08.06380210" N	87°38'42.36948160" E
P17	25°03'09.27860400" N	87°38'41.38500000" E
P18	25°03'10.32854400" N	87°38'42.42984280" E

LAND DETAILS

Khata no.	Plot no.
45	536 IP

STATUTORY CLEARANCES

1	LOI / Lease docs	The Letter of Intent (LOI) has been issued by District Mining Officer, Sahibganj vide letter no. 683/M. dated 24.04.2025
2	CO	The CO, Bor o. Sahibganj, vide letter no. 747/Ba., dated 05.10.2024 has mentioned the plot no. of the project is not recorded as "Jungle Jhar" in P.S. Khatriyan & Register II.
3	DWD Cluster	DWC, Sahibganj vide memo no. 721/M. dated 26.04.2025 cert fied

		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. 104, dated 13.01.2025 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 letter no. 3287, dated 19.12.2024 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. 720/M, dated 26.04.2025 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 28.09.2024.
8	Mine Plan Approval	Approved by District Mining Officer, Sahibganj vide Letter No. 818/M, dated 10.05.2025.
9	Grid Certificate	DMO, Sahibganj vide memo no. 940/M, dated 02.06.2025 certified that said project falls under grid no. 55 and Hon'ble NGT does not decided the production capacity of that Grid.
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	: Semi-mechanized "OTFM" Method
2	Quarry Area	: 2.248 Ha. Life of Mine – 10 years
3	Waste Generation	: 133295 cum
4	Stripping Ratio	: 1:0.08
5	Working Days	: 300
6	Bench: size & No	: 6m to 6m and 7 in numbers
7	Elevation of Mine	: 180 m AMSL to 150 m AMSL
8	Ground Level Elevation	: 150 m AMSL
9	Ultimate Working Depth	: 130 m AMSL
10	Water Table	: 125 m AMSL
11	Topography of Mine	: Area represents gently sloping land.
12	Explosive Requirement	: 162 kg/day (To be handle by licensed external Agency)
13	Diesel/Fuel requirement	: 776 litre/day

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	%F.	Tonnes	Cum	Tonnes	Cum	Tonnes
1 st	110505	2.8	409414	368	1011	44520	148
2 nd	108385	2.8	403478	351	1012	29150	97
3 rd	138595	2.8	482066	467	1294	59625	199
4 th	136740	2.8	383672	456	1276	0	0
5 th	137370	2.8	384356	458	1281	0	0
Total	631495	2.8	1768196	462(MAX)	1294(MAX)	133795	199(MAX)

Land Use

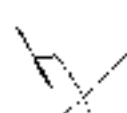
Sl. No.	Pattern of Utilization	Present/ Existing land use pattern in Ha	Proposed Land use for current plan period (ha.)	Land to be remaining period of the life of the mine (Ha.)	Land use at the conceptual stage i.e. end of mine life in (Ha.)	Area to be converted in the conceptual period Water Body Included in Quarry Included in Safety Zone Plantation
1	Mining	0.000	2.201	2.248	2.248	
2	Quarry Dumping	0.000	0.047	0.000	0.000	Body Included in Quarry
3	Gravelled drain	0.000	0.037	0.037	0.037	Included in Safety Zone
4	Safety Zone	0.000	0.547	0.547	0.547	Plantation
5	Unutilized	2.832	0.000	0.000	0.000	Plantation
Total		2.832	2.832	2.832	2.832	

ENVIRONMENT MANAGEMENT

Green Belt Development

Location	Area (Ha.) or Length (m)	Plantation		Calculation	Timeline
		No. of tree			
Safety Zone	0.547	876.00		1600 tree per hectare	1st Year
Approach Road	100	100		2m X 2m spacing	1st year
Gravelled Drain	0.037	50.00		1600 tree per hectare	End of Mine
TOTAL		1036.00			
Species: Neem, Peepal, Arjun, Ashoka, Gulmohar, Banyan, Bamboo - Bambusa, Natans, Tootla, Strinus & other Native Species					

- Gravel 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.

Signature:  Date:  12/12/2023

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 (in Lakhs) of Environment Management Plan (EMP)		
Particulars	Capital	Recurring
Plantation of "876" number of trees @Rs.300 per tree for plant & @Rs. 50 per tree for maintenance	262800.00	43800.00
Water Facility for Horticulture "5.256" KLD & Dust Suppression "11.328" KLD (Annual Water Demand "4975.2"KL @4KL per Tanker, total number of tankers required ("1244") and per tanker cost @Rs. 500)	0.00	622000.00
Garland Drain & Desiltation Pond	283200.00	28320.00
Environment Monitoring & Compliance	0.00	50000.00
Total	546000.00	744120.00

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.	3 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 rocks (overburden) generated during the 1st to 4th year of the mining plan period will be temporarily dumped on the south eastern side of the lease area from the 5th year onwards, this overburden will be progressively backfilled into Section A-A to begin land reclamation.

Upon completion of the life of the mine, the remaining overburden will be backfilled into the exhausted quarry void, facilitating land restoration and environmental stabilization. Any

excess overburden will be used for the maintenance and stabilization of the haul road approach road, and adjoining slopes.

The excavated basalt stone, being a saleable mineral, will be systematically extracted, sized as per market demand and transported to the end users through a designated transportation route. The quantity of saleable mineral has been detailed in the year wise production plan.

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. Decanted water will be allowed to flow into natural drainage.
- Garband drain would be provided on upper contour around the quarry. Water collected in Garband 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 settling.
- Sewage from rest shelter would be treated in Septic Tank & disposed.

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 provided on the site where drilling has to be done.

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

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

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

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

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

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

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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 or moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the drill or drill 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 drillor. 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 drillor to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

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

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

Noise Generation during drilling

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- Handwritten text: "LAM A"
- Handwritten text: "B"
- Handwritten diagram: A cross-section of a drill bit with a central hole, labeled "A" and "B".
- Handwritten diagram: A cross-section of a drill bit with a central hole, labeled "A" and "B".

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 Etc. 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, SE certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintenance 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.
- Overtaking 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 /ippers/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

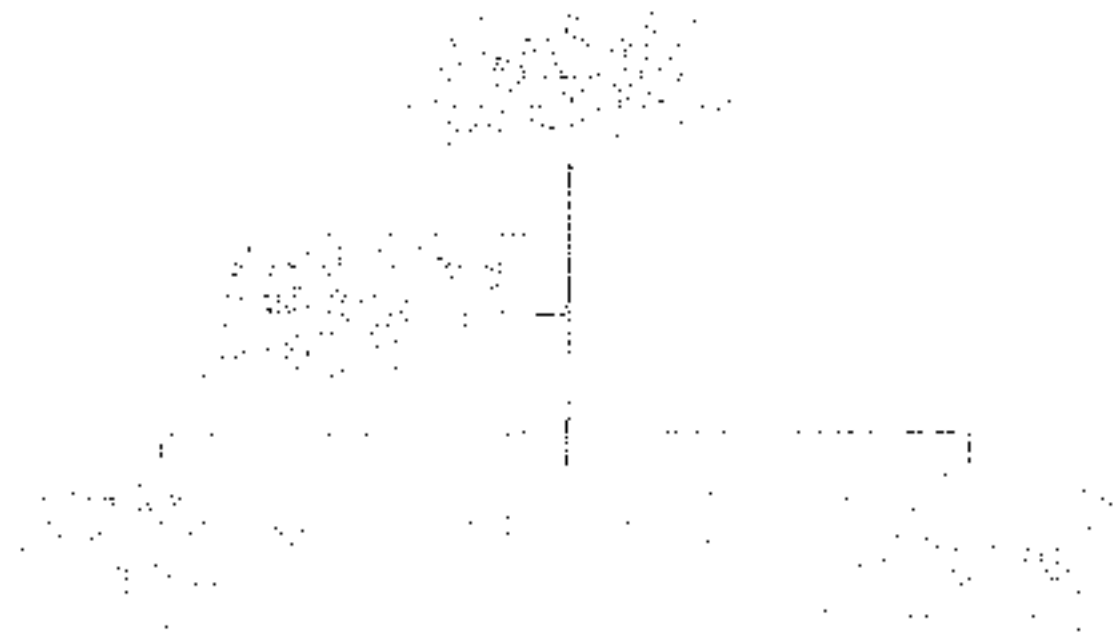
The EMP Cell objectives are:

- 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)

- Associate in development of EIA & EMP with consultants
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Arrange 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

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- 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:

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1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP & comply to statutory compliance
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 contours / 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. Hereafter 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 then 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 Mine of M/s Swastik Stone Crusher (Partner : Shri Ajay Choudhary), Village : Bindri Bandarkola, Tehsil : Borio, Distt. : Sahibganj, Jharkhand (2.832 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. In consideration of the comments regarding distance in the certificate issued by the DFO, Sahibganj regarding Man - Animal conflict in the area the PAs have submitted an undertaking that if any mitigation plan is prepared and implemented by DFO, Sahibganj the PAs will contribute their share of the funds, to the extent of their CSR budget on demand by the DFO, Sahibganj.
- II. In compliance of OM no F No. JA3-22/3/2024-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. 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 be submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted 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.

5. Bindri Bandarkola Stone Deposit of M/s Swastik Mining Agency (Partner : Shri Uttam Kumar Singh), Village : Bindri Bandarkola, Tehsil : Borio, Distt. : Sahibganj, Jharkhand (2.873 Ha).

(Proposal no.: SIA/JH/MIN/ 538519 /2025)

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

This is a new project which has been taken for appraisal on 26.06.2025

Project Sector: 11a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

LC Application for Proposed Capacity – 234000 Tonnes per year or 80667 cum per year

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Bindri Bandarkola Stone Deposit
2	Lessee:	M/s Swastik Mining Agency.
3	Partner:	Partner: Shri Uttam Kumar Singh & others
4	Lessee Address	Address: At- Gudhaghat, P.O. – P.S. Rajmahal District Sahibganj
4	Mining Lease Area	2.873 Ha 7.10 Acres
5	Type of Land	Non-Forest Private Land
5	Project Cost	Capital: Rs. 2624100
7	LCF Budget	Capital: Rs. 563600 Recurring: Rs. 740780 per year
8	New or Expansion	New
9	Mineral Reserves	851327.78 Cum 2204585 Tonnes
10	Mine Life	10 Years
11	Man power	22
12	Water Requirement	17.30 KLD
12	Water source	By authorised lined water tankers
14	OG Set / power	
15	Crusher	No crusher
16	Nearest Water Body	Ganga River at a distance of 11 Km
17	Nearest Habitation	Bathanga Basti at a distance of 7.75 km
18	Nearest Rail Station	Lajpuri Railway Station at a distance of 7.5 Km
19	Nearest Air Port	Deoghar at a distance of 191 Km

20	Nearest Forest	: Divisional Forest Officer, Sahibganj certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
21	Road & Highways	: SH- 18 Sahibganj – Dumka Road at a distance of 4 Km

CO-ORDINATES

PILLAR NO	LATITUDE	LONGITUDE
P1	25°04'09.4876" N	87°39'53.1519" E
P2	25°04'14.3236" N	87°39'54.6433" E
P3	25°04'09.8372" N	87°40'00.2351" E
P4	25°04'05.0878" N	87°39'58.8402" E

LAND DETAILS

Khata no.	Plot no.
39	436 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	: The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 495/M, dated 19.03.2025
2	CO	: The CO, Borio, Sahibganj vide memo no. 669/Ra., dated 12.09.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatyan & Register II.
3	DMO Cluster	: DMO, Sahibganj vide memo no. 681/M, dated 24.04.2025 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. 2285, dated 18.09.2024 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. 2365, dated 25.09.2024 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. 856/M, dated 14.05.2025 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 26.07.2024.
8	Mine Plan Approval	Approved by District Mining Officer, Sahibganj vide Letter No 645/M dated 09.04.2025
9	Grid Certificate	DMO, Sahibganj vide memo no. 910/M dated 15.05.2025 certified that said project falls under grid no. 55 and Forible NGT does not decided the production capacity of that Grid.
10	Qualified Person	Shri Vidya Prushan Mishra was present in the meeting and affirmed that the map plan has been prepared by him

Working Details

1	Mining Method	Semi-mechanized "RTFM" Method
2	Quarry Area	1.765 Ha Life of Mine 10 years
3	Waste Generation	57013 cum
4	Stripping Ratio	1:0.05
5	Working Days	300
6	Benchies size & No	6m to 6m and 12 m numbers
7	Elevation of Mine	302 m AMSL to 258 m AMSL
8	Ground Level Elevation	258 m AMSL
9	Ultimate Working Depth	250 m AMSL
10	Water Table	210 m AMSL
11	Topography of Mine	Area represents gently sloping and
12	Explosive Requirement	98 kg/day
13	Diesel/Fuel requirement	468 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
1 st	80953	216574	26884	4261	31145
2 nd	82661	223186	9598	4251	14048
3 rd	84427	227354	0	2745	2745
4 th	85743	221507	0	4513	4513
5 th	86567	234000	0	4561	4561
Total	420452	1135120	36582	20431	57013

Land Use

Land Utilization	Existing Land use (Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry	Nil	1.765	2.360 (0.277 ha area shall be backfilled, 0.714 ha area shall be left as water reservoir and 1.369ha shall be left as dead benches)
Waste Dump	Nil	0.292	Nil (Comes under quarry)
Road	Nil	0.011	0.00
Crusher	Nil	Nil	Nil
Safety zone	Nil	0.513	0.513
Plantation			
Total	0.000	2.581	2.873
Unused Area	2.873	0.292	0.0
Total Lease Area		2.873	

ENVIRONMENT MANAGEMENT

Green Belt Development

Plantation				
Location	Area (Ha.) or Length (m)	No. of tree	Calculation	Timeline
Safety Zone	0.513	821.00	1600 tree per hectare	1st Year
Approach Road	100	100	2m X 2m spacing	1st year
Dead Bench	1.369	2191.00	1600 tree per hectare	End of Mine
Backfilled area (level upto surface)	0.277	444.00	1600 tree per hectare	End of Mine
Total		3556.00		
Species: Neem, Peepal, Arjun, Ashoka, Gulmohar, Banyan, Bamboo - Bomhas, Nitans, Toolda, Strictus & other Native Species				

- 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 (in Lakhs) of Environment Management Plan (EMP)		
Particulars	Capital	Recurring
Plantation of "921" number of trees @Rs.200 per tree for plant & @Rs.50 per tree for maintenance	186500.00	46050.00
Water Facility for Horticulture "4.926" KLD & Dust Suppressor "11.492" KLD (Annual Water Demand "4925.4" KL @4KL per Tanker, total number of tankers required is "1232") and per tanker cost @Rs.500)	0.00	616000.00
Garland Drain & Depollution Pond	287300.00	28730.00
Environment Monitoring & Compliance	0.00	50000.00
Total	563800.00	140780.00

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 Station	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

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 57023 cum in-situ waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 28506 cum (in situ) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 28506 cum is to 35632.34 cum loose & 30287.97 cum compact waste shall be temporary dumped in southern part of coal cover 0.292ha area. A retaining wall shall be generated around the dump.

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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 Gaur 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/slides/impacts (Bodily injury)	Probable	Moderate	5
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: 1 Score 1 to 4 High Risk, 5 to 12 Medium Risk, 13 to 25 is low risk.

The risk scores 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

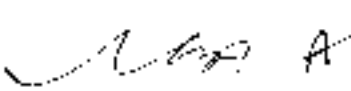
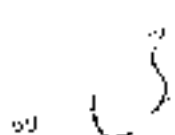
Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- 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 is so 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 structure/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.

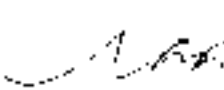
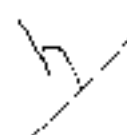
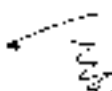
Handling of Explosives

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 mishaps, 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 Magazines.

 A   

- 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

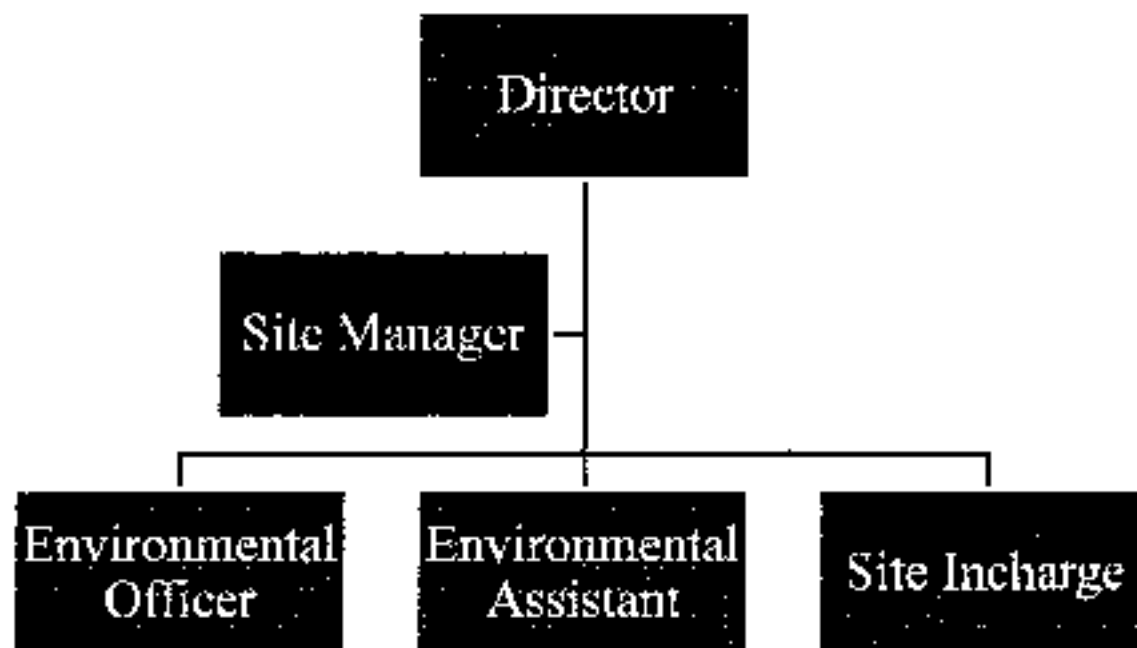
The EMP Cell objectives are:

- 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

LMP Cell Structure

The LMP 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)

- Associate in development of EIA & EMP with consultants
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Arrange environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards

Environmental Assistant (EA)

- Prepare quarterly reports
- 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 applying 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
3. 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:

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1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP & comply to statutory compliance
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 Swastik Mining Agency (Partner : Shri Uttam Kumar Singh), Village : Bindri Bandarkola, Tehsil : Borio, Distt. : Sahibganj, Jharkhand (2.873 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - I along with following specific conditions :

- In consideration of the comments regarding distance in the certificate issued by the DFO, Sahibganj regarding Man - Animal conflict in the area the PAs have submitted an undertaking that if any mitigation plan is prepared and implemented by DFO, Sahibganj the PAs will contribute their share of the funds, to the extent of their CSR budget or demand by the DFO, Sahibganj.
- II. In compliance of O.M no. F.No. IA3 22/3/2024 IA II (C 241394) 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 MEMPHL Portal (<https://memphl.namptl>). 10% of the total green belt proposed shall be allocated under this clause.
 - III. 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 PFT, Audiometry and other required tests. Summary findings of same to be submitted along with 6 monthly compliance.
 - VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
 - VIII. Keep vulnerable areas unmanned. Ensure rotation of cutes. 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.

6. Mundli & Belbhadri Stone Deposit of M/s Maa Vaishnavi Stone Works (Prop. : Shri Rajiv Kumar Bhagat), Village : Mundli & Belbhadri, Anchal : Mandro, Distt. : Sahibganj, Jharkhand (2.428 Ha).

(Proposal no.: SIA/JH/MIN/ 530525 /2025)

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

This is a new project which has been taken for appraisal on 23.06.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity – 129468 Tonnes per year 47951 Cum per Year

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Mundli & Belbhadri Stone Deposit
2	Lessee:	M/s Maa Vaishnavi Stone Works, Proprietor-Sri Rajiv Kumar Bhagat
3	Lessee Address	Address: At Mahadeovaran, P.O. + P.S. – Mirzachowki, District – Sahibganj, Jharkhand
4	Mine Lease Area	2.428 Ha. 6.00 Acre
5	Type of Land	Non-Forest Raiyati Land
6	Project Cost	Capital: Rs. 7140400
7	EMP Budget	Capital: Rs. 493600 Recurring: Rs. 668580 per year
8	New or Expansion	New
9	Mineable Reserves	1235532 Tonnes
10	Mine Life	10 Years
11	Man power	17
12	Water Requirement	15.41 KLD
13	Water Source	By authorised hired water tankers
14	DG Set / power	-
15	Crusher	No crusher
16	Nearest Water Body	Ganga river at a distance of 13 km on Northern side
17	Nearest Habitation	Belbhadri Village 0.90 Km
18	Nearest Rail Station	Mirzachowki Railway Station 2.0 Km
19	Nearest Air Port	Deoghar Airport 156.1 Km
20	Nearest Forest	Divisional Forest Officer, Sahibganj certified that the distance of reserved / protected forest is more than 250 meter from

proposed project site.

21 Road & Highways

NH-22 Sahibganj – Bhagalpur Road at about 2.0 Km

CO-ORDINATES

Pilar No.	Latitude	Longitude
1	25°14'29.4339" N	87°29'36.9586" E
2	25°14'24.4658" N	87°29'37.3871" E
3	25°14'24.4797" N	87°29'37.9893" E
4	25°14'23.2436" N	87°29'37.4256" E
5	25°14'23.1361" N	87°29'35.6022" E
6	25°14'23.8793" N	87°29'34.8377" E
7	25°14'23.3334" N	87°29'33.1275" E
8	25°14'23.7706" N	87°29'32.3515" E
9	25°14'24.2401" N	87°29'30.2248" E
10	25°14'25.5657" N	87°29'31.0638" E
11	25°14'28.0439" N	87°29'31.7249" E
12	25°14'28.1432" N	87°29'33.4982" E
13	25°14'25.3341" N	87°29'34.4735" E
14	25°14'25.383" N	87°29'35.5349" E
15	25°14'27.0294" N	87°29'34.9023" E
16	25°14'28.1608" N	87°29'35.0243" E
17	25°14'29.6945" N	87°29'34.9078" E

LAND DETAILS

Khata no.	Plot no.
05	53 (P)
23	181 (P)
10	183 (P)

STATUTORY CLEARANCES

- LO / Lease docs - The Letter of Intent (LOI) has been issued by District Mining Officer, Sahibganj vide letter no. 972/M, dated 21.09.2024.
- CO - The CO Mandra vile memo no. 137/Ra, dated 24.07.2020 has mentioned the plot no. of the project is not recorded as "Jungle" in R.S. Khariyan & Register I.
- DMD Cluster & Grid Certificate - DMO, Sahibganj, vide memo no. 757/M, dated 03.05.2023 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. 01 and production is within the overall permissible production limit.

4	DFO Wild Life	:	DFO – cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1380, 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. 1411, dated 29.09.2024 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 Sahibganj District (Page no. 162, Sl. No. 20).
7	Gram Sabha	:	Gram Sabha conducted on 12.02.2020.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 377/M, dated 28.02.2025.
9	Qualified Person	:	Shri Vrdya 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 "OTM" Method
2	Quarry Area	:	1.328 Ha. Life of Mine – 10 years
3	Waste Generation	:	12071 cum 32591.7 Tonnes
4	Stripping Ratio	:	1:0.02
5	Working Days	:	300
6	Bench: size & No	:	6m to 6m and 7 in numbers
7	Elevation of Mine	:	235 m AMSL to 215 m AMSL
8	Ground Level Elevation	:	215 m AMSL
9	Ultimate Working Depth	:	193 m AMSL
10	Water Table	:	160 m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	54 kg/day
13	Diesel/Fuel requirement	:	259 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
1 st Year	44816	121004	0	2359	2359

2 nd Year	45244	122158	0	2381	2331
3 rd Year	45529	122928	0	2396	2396
4 th Year	45814	123697	0	2411	2411
5 th Year	47951	124468	0	2524	2524
Total	229354	619255	0	12071	12071

Land Use

Land Utilization	Existing Land use (Ha)	At the end of plan Period	At Conceptual period (Ha)
Quarry	0.825	1.328	1.905 (0.109 Ha area shall be backfilled, 1.184 Ha converted in to water reservoir & 0.613 Ha shall be left as dead benches)
Waste Dump	Nil	0.122	Nil (comes under quarry)
Road	0.025	0.030	0.00
Safety Zone	Nil	0.522	0.522
Plantation			
Total	0.850	2.002	2.428
Unused Area	1.578	0.426	0.0
Total Lease Area			2.428

ENVIRONMENT MANAGEMENT

Green Belt Development

Location	Plantation Area (Ha) or Length (m)	No. of tree	Calculation	Timeline
Safety Zone	0.522	835.00	1600 tree per hectare	1st Year
Approach Road	100	100	2m X 2m spacing	1st year
Dead Bench	0.613	981.00	1600 tree per hectare	End of Mine
Backfilled area (level upto surface)	0.109	175.00	1600 tree per hectare	End of Mine
TOTAL		1992.00		

Species: Neem, Peepal, Arjun, Ashoka, Gujmar, Banyan, Bamboo - Bombax, Nutans, Ficus, Sterculia & other Native species

- 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 FDCI, Development, Department of Forest, Environment & Climate Change, Govt. of Charkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

Budgetary Provision (In Lakhs) of Environment Management Plan (EMP)		
Particulars	Capital	Recurring
Plantation of "836" number of trees @Rs 300 per tree for plant & @Rs. 50 per tree for maintenance	250800.00	41800.00
Water Facility for Horticulture "5.016" KLD & Dust Suppression "9.712" KLD (Annual Water Demand "4418.4" KL @4KL per Tanker, total number of tankers required ("1105") and per tanker cost @Rs. 500)	0.00	552500.00
Garland Drain & Desiltation Pond	242800.00	24280.00
Environment Monitoring & Compliance	0.00	50000.00
Total	493600.00	668580.00

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.	3 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

In this applied lease area, there is a quarry and OB not found in rest of the area. 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 12071 cum In-situ waste shall be generated during this plan period. The 50% of waste generated during the plan period c. 6036 cum (In situ) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 6036 cum in situ 7544.53 cum loose & 6412.85 cum compact waste shall be temporary dumped on the eastern part of the applied lease area and it will cover about 0.122 Ha area.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT
- Rain water 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. Devalled 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 decanting
- 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 machines & 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.

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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 boxes 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, whenever 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 works are (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
- Overtuning 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 / rippers/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 cleared 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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- 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:

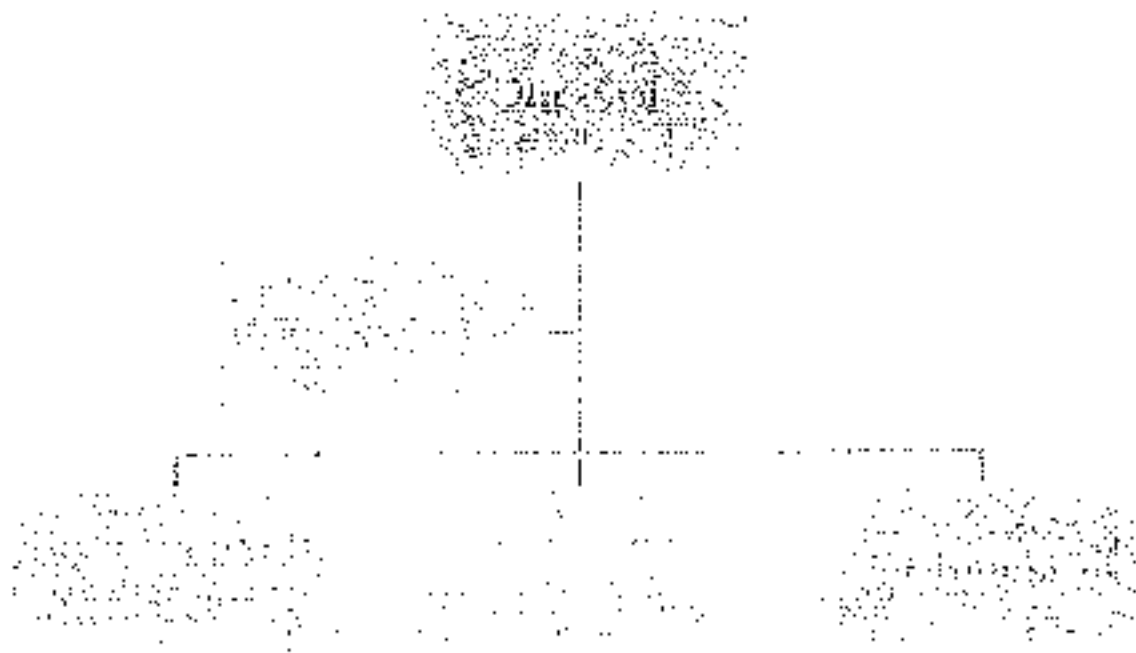
- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

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

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FMP Cell structure

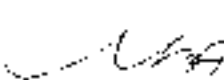
Roles and Responsibilities

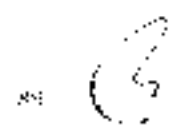
Environmental Officer (EO)

- Associate in development of EIA & FMP with consultants
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Arrange 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 & comply to statutory compliance
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. Surface 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 Authority 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. Hereafter 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 machinery / 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, then necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gazon 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 Mundli & Belbhadri Stone Deposit of M/s Maa Vaishnavi Stone Works (Prop. : Shri Rajiv Kumar Bhagat), Village : Mundli & Belbhadri, Anchal : Mandro, Distt. : Sahibganj, Jharkhand (2.428 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - I along with following specific conditions :

- I. In consideration of the comments regarding distance in the certificate issued by the DFO, Sahibganj regarding Man - Animal conflict in the area the PAs have submitted an undertaking that If any mitigation plan is prepared and implemented by DFO, Sahibganj the PAs will contribute their share of the funds, to the extent of their CSR budget on demand by the DFO, Sahibganj.
- 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. 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 PLF1, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted 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.

7. Kasar Bhita Stone Deposit of M/s Maa Vaishnavi Stone Works (Partner : Shri Rajesh Kumar Jaiswal & Others), Village : Kasar Bhita, Tehsil : Mandro, Distt. : Sahibganj, Jharkhand (2.428 Ha).

(Proposal no.: SIA/JH/MIN/ 541961 /2025)

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

This is a new project which has been taken for appraisal on 23.06.2025

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity : 242895 Tonnes per Year or 89961 Cum per Year

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Kasar Bhita Stone Deposit
2	Lessee	M/s Maa Vaishnavi Stone Works Partner : Shri Rajesh Kumar Jaiswal & Others
3	Lessee Address	Address : At Mahadevvaran, P.O: B.S. Mirzakhawki, District- Sahibganj, Jharkhand
4	Mine Lease Area	2.428 Ha. 6.0 Acre
5	Type of Land	Non-Forest Bariyat Land
6	Project Cost	Capital: Rs. 2500000
7	EMP Budget	Capital: Rs. 488600 Recurring: Rs. 646580 per year
8	New or Expansion	New
9	Minable Reserves	722278.15 Cum 1947451 Tonnes
10	Mine life	10 Years
11	Man power	21
12	Water Requirement	15.00 KLD
13	Water Source	By authorised hired water tankers
14	DG Set / power	
15	Crusher	No crusher
16	Nearest Water Body	Ganga river flows within 11 km towards the eastern side of the mine
17	Nearest Habitation	Kampanar Village at a distance of 1.2 Km
18	Nearest Rail Station	Karamtola Railway Station at a distance of 4 Km
19	Nearest Air Port	Dumka Airport at a distance of 226 Km
20	Nearest Forest	Nearest forest is 250 m away as per Divisional Forest Officer Sahibganj reserved / protected forest is more than 250 meter

		from proposed project site.
21	Road & Highways	NH 33 Sahibganj Rajmahal road is 4.2Km away

CO-ORDINATES

PILLAR NO	LATITUDE	LONGITUDE
P1	25°13'21.80" N	87°32'7.26" E
P2	25°13'18.25" N	87°32'6.84" E
P3	25°13'18.16" N	87°32'7.13" E
P4	25°13'16.36" N	87°32'10.21" E
P5	25°13'15.20" N	87°32'12.71" E
P6	25°13'17.76" N	87°32'13.89" E
P7	25°13'19.74" N	87°32'12.58" E
P8	25°13'20.76" N	87°32'12.11" E
P9	25°13'20.94" N	87°32'12.11" E
P10	25°13'21.17" N	87°32'11.09" E
P11	25°13'21.52" N	87°32'10.23" E
P12	25°13'20.70" N	87°32'9.67" E
P13	25°13'20.84" N	87°32'9.07" E
P14	25°13'21.16" N	87°32'9.07" E

LAND DETAILS

Khata no.	Plot no.
08	14 (P)
20	37 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	The Letter of Intent (Loi) has been issued by District Mining Officer, Sahibganj vide letter no. 691/M, dated 25.04.2025.
2	CO	The CO, Mandro vide memo no. 119/Ra., dated 02.03.2021 has mentioned the plot no. of the project is not recorded as "Jungle-Jhar" in R.S. Khatiyani & Register II.
3	DMO Cluster	DMO, Sahibganj vide memo no. 692/M, dated 25.04.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DDO Wild Life	DDO – cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 622, dated 27.03.2024 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 27, dated 04.11.2021 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	TSR & Gnd certificate	The DMO, Sahibganj has been certified vide memo no. 1072/M, dated 17.06.2025 that the project is mentioned in approved DPR of Sahibganj District as a potential area and also certified that said project falls under gnd no. 12 and hence it does not denude the product or limit of that Gnd.
7	Gram Sabha	Gram Sabha conducted on 13.12.2021.
8	Mine Plan Approval	Approved by District Mining Officer, Sahibganj vide Letter No. 1041/M, dated 14.06.2025
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	1.595 Ha Life of Mine = 10 years
3	Waste Generation	53468 cum
4	Stripping Ratio	1:0.65
5	Working Days	300
6	Benching size & No	6m to 6m and 11 in number
7	Elevation of Mine	214 m AMSL to 172 m AMSL
8	Ground Level Elevation	172 m AMSL
9	Ultimate Working Depth	148 m AMSL
10	Water Table	140 m AMSL
11	Topography of Mine	Area represents gently sloping land
12	Explosive Requirement	101 kg/day (To be handled by licensed external Agency)
13	Diesel/Fuel Requirement	426 ltr/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 Year	66713	180125	15080	3511	28591
2nd Year	68879	185973	7600	3525	11225

3rd Year	72200	194940	0	3800	3800
4th Year	77832	210145	0	4096	4096
5th Year	89961	242895	0	4735	4735
Total	375584	1014078	37680	19768	52448

Land Use

Land Utilization	Existing Land use (Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry	NIL	1.586	1.956 (0.275 ha area shall be backfilled, 0.423 ha area shall be converted into water reservoir and 1.259 ha left as dead benches).
Waste Dump	NIL	0.276	Nil (comes under quarry)
Road	NIL	0.002	0.00
Safety Zone	NIL	0.472	0.472
Plantation			
Total	0.000	2.336	2.428
Unused Area	2.428	0.092	0.0
Total Lease Area			2.428

ENVIRONMENT MANAGEMENT

Green Belt Development

Location	Area (Ha.) or Length (m)	Plantation		
		No. of tree	Calculation	Timeline
Safety Zone	0.472	756	1600 tree per hectare	1st Year
Approach Road	100	100	2m X 2m spacing	1st year
Dead Bench	1.259	2015	1600 tree per hectare	End of Mine
Backfilled area (level upto surface)	0.275	440	1600 tree per hectare	End of Mine
TOTAL		3311		
Species: Neem, Peepal, Arjun, Ashoka, Gulmohar, Banyan, Bamboo, Bombas, Mutans, Toolda, Strictus & other Native Species				

- 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 (in Lakhs) of Environment Management Plan (EMP)		
Particulars	Capital	Recurring
Plantation of "756" number of trees @Rs 300 per tree for plant & @Rs 50 per tree for maintenance	225800.00	37800.00
Water Facility for Horticulture "4.538" KLD & Dust Suppression "5.712" KLD (Annual Water Demand "4274.4" KL @4KL per tanker, total number of tanker required 1 "1069" and per tanker cost @Rs 500)	0.00	531500.00
Garland Drain & Desiltation Fund	242800.00	747800.00
Environment Monitoring & Compliance	0.00	50000.00
Total	469600.00	616580.00

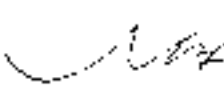
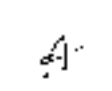
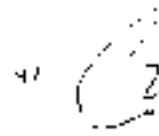
Environment Monitoring Plan (post operation)

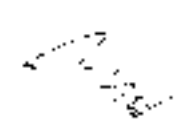
Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM ₁₀ , PM _{2.5} , SO ₂ , NO _x in the vicinity of the mine area, in the surrounding area covering project site only	3 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

In this applied lease area, the stone deposit is covered with 2m layer of intermixed soil which is 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 52448 cum in-situ waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 26224 cum (in situ) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 26224 cum in situ, 32779.75 cum loose & 27862.79 cum compact waste shall be temporary dumped on the southern part of the applied lease area and it will cover about 0.270 Ha area.



Water Quality Management

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

Air Quality Management

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

Mitigation measures-

Use of Sharp Drill Bits

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

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

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

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

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

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

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

RISK ASSESSMENT

The hazard identification and risk analysis 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
5	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	10
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

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

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

Low Risk Risk and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock fall 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 cressed
- 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)

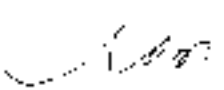
Drilling Operations

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 favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operation, 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 blasting 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 shot 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 mishaps, 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:

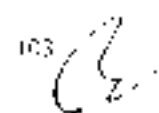
- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

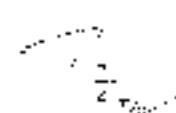
EMP Cell Structure

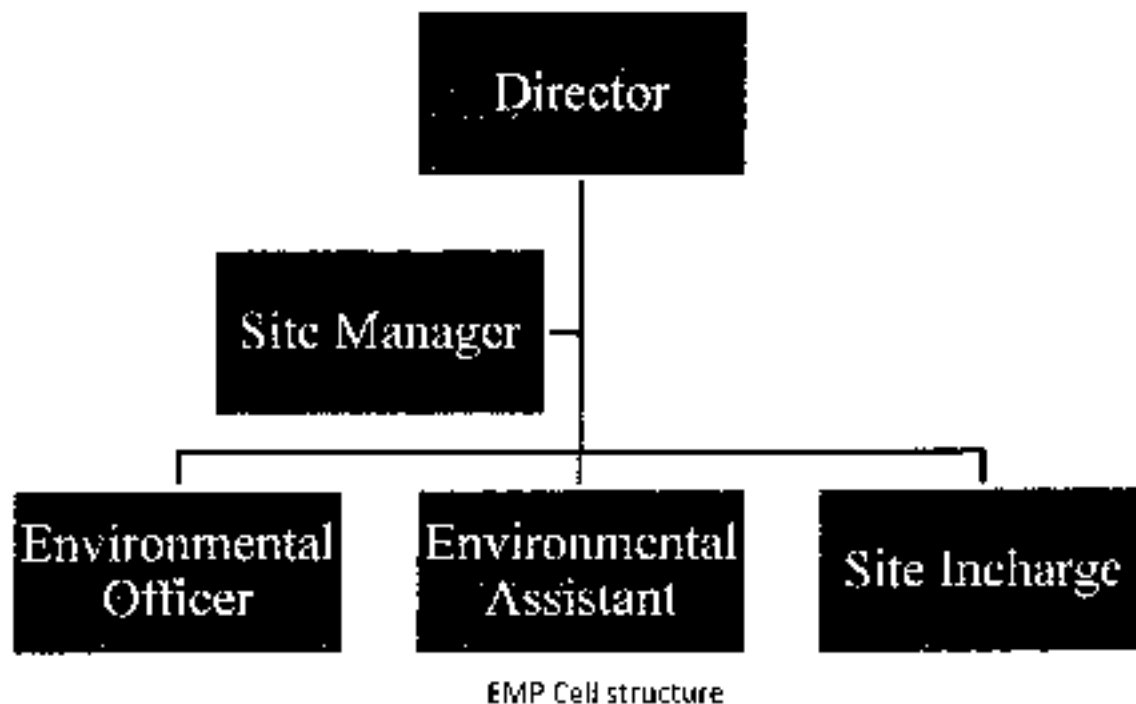
The EMP Cell consists of three members:

- 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









Roles and Responsibilities

Environmental Officer (EO)

- Associate in development of EIA & EMP with consultants
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Arrange 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

LAH A m. X 1.1.2021

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP & comply to statutory compliance
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 Kasar Bhita Stone Deposit of M/s Maa Vaishnavi Stone Works (Partner : Shri Rajesh Kumar Jaiswal & Others), Village : Kasar Bhita, Tehsil : Mandro, Distt. : Sahibganj, Jharkhand (2.428 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - 1 along with following specific conditions :

- i. In consideration of the comments regarding distance in the certificate issued by the DFO, Sahibganj regarding Man - Animal conflict in the area the PAs have submitted an undertaking that if any mitigation plan is prepared and implemented by DFO Sahibganj the PAs will contribute their share of the funds, to the extent of their CSR budget on demand by the DFO, Sahibganj.
- ii. In compliance of OM no. F.No. /A3-22/3/2024 (A.II) (6-241594) 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 Ek Ka Ghar" and the details of the same shall be uploaded in the Identikit Portal (<https://identikit.mef.gov.in/>). 10% of the total green belt proposed shall be allocated under this clause.
- iii. 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 PFT, Audiometry and other required tests. Summary findings of same to be submitted along with 5 monthly compliance.
- vii. Ensure use of Quality PPEs equivalent not less than RM make. Records of same to be maintained and submitted with 5 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.

8. Nawadih Stone Deposit of M/s Jai Mata Di Stone Enterprises (Partners : (i) Shri Ayush Chaurasia (ii) Md. Salauddin (iii) Shri Manoj Soren), Village : Nawadih, Anchal : Palojori, Distt. : Deoghar, Jharkhand (2.675 Ha).

[Proposal no.: SIA/JH/MIN/ 538350 /2025]

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

This is a new project which has been taken for appraisal on 23.06.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity –281637Tonnes per year or 104310 cum per year

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Nawadih Stone Deposit
2	Lessee:	M/s Jai Mata Di Stone Enterprises
3	Lessee Address	Address: At- Panch Mandir Road, Madhupur, Deoghar, Jharkhand
4	Mine Lease Area	2.675Ha. 6.61Acre
5	Type of Land	Non-Forest Raiyati Land
6	Project Cost	Capital: Rs. 2425200
7	EMP Budget	Capital: Rs. 707900 Recurring: Rs. 882150per year
8	New or Expansion	New
9	Mineable Reserves	1372334 Tonnes 508271 Cum
10	Mine life	5Years
11	Man power	24
12	Water Requirement	20.47 KLD
13	Water Source	By authorised hired water tankers
14	DG Set / power	-
15	Crusher	No crusher
16	Nearest Water Body	Ajay River at a distance of 10 Km in West direction
17	Nearest Habitation	Basahavillage at a distance of 1.55 Km in North-West direction.
18	Nearest Rail Station	Dhanpatdih Railway Station at a distance of 20 Km in North direction.
19	Nearest Air Port	Deoghar Airport at a distance of 36 Km in North-West

		direction.
20	Nearest Forest	Divisional Forest Officer, Dugliar certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
21	Road & Highways	NH - 134A at a distance of 9.5 Km in North direction.

Co-Ordinates:

SL NO	LATITUDE	LONGITUDE	SL NO	LATITUDE	LONGITUDE
1	24°12'52.76591" N	86°55'41.90887" E	49	24°12'46.19664" N	86°55'47.13859" E
2	24°12'52.41642" N	86°55'42.40121" E	50	24°12'46.74677" N	86°55'46.67642" E
3	24°12'51.85407" N	86°55'42.73854" E	51	24°12'45.45113" N	86°55'46.59560" E
4	24°12'51.71083" N	86°55'42.05573" E	52	24°12'45.86350" N	86°55'46.71607" E
5	24°12'51.31487" N	86°55'43.84319" E	53	24°12'45.17457" N	86°55'46.75361" E
6	24°12'50.69542" N	86°55'45.91234" E	54	24°12'45.21573" N	86°55'46.59300" E
7	24°12'49.36810" N	86°55'49.09400" E	55	24°12'45.23098" N	86°55'46.20236" E
8	24°12'48.48077" N	86°55'48.71338" E	56	24°12'45.28775" N	86°55'46.27256" E
9	24°12'48.42667" N	86°55'48.62578" E	57	24°12'45.38570" N	86°55'46.03622" E
10	24°12'48.19488" N	86°55'49.32406" E	58	24°12'45.44237" N	86°55'45.75450" E
11	24°12'48.14817" N	86°55'49.69523" E	59	24°12'45.45250" N	86°55'45.48278" E
12	24°12'47.89092" N	86°55'49.55502" E	60	24°12'45.56534" N	86°55'45.32012" E
13	24°12'47.86720" N	86°55'49.11178" E	61	24°12'46.12554" N	86°55'45.56664" E
14	24°12'47.94583" N	86°55'48.42935" E	62	24°12'46.26472" N	86°55'45.15370" E
15	24°12'47.90168" N	86°55'47.97157" E	63	24°12'46.63239" N	86°55'44.35147" E
16	24°12'47.75519" N	86°55'47.95194" E	64	24°12'47.04894" N	86°55'44.38502" E
17	24°12'47.63894" N	86°55'47.77687" E	65	24°12'47.39740" N	86°55'44.59307" E
18	24°12'47.65076" N	86°55'47.39480" E	66	24°12'47.74309" N	86°55'44.60858" E
19	24°12'47.94851" N	86°55'47.45374" E	67	24°12'47.90848" N	86°55'44.72176" E
20	24°12'48.08312" N	86°55'47.37290" E	68	24°12'47.28683" N	86°55'43.96158" E
21	24°12'48.13938" N	86°55'47.13383" E	69	24°12'47.09109" N	86°55'43.80230" E
22	24°12'48.17746" N	86°55'47.10450" E	70	24°12'46.93223" N	86°55'43.56793" E
23	24°12'49.07779" N	86°55'46.79508" E	71	24°12'46.90634" N	86°55'43.37058" E
24	24°12'48.85667" N	86°55'45.91312" E	72	24°12'46.55257" N	86°55'43.27770" E
25	24°12'48.90953" N	86°55'45.72113" E	73	24°12'47.27714" N	86°55'42.52052" E
26	24°12'48.56908" N	86°55'45.63804" E	74	24°12'47.65312" N	86°55'41.42413" E
27	24°12'48.56116" N	86°55'45.68240" E	75	24°12'47.49076" N	86°55'41.16485" E
28	24°12'48.15871" N	86°55'45.72764" E	76	24°12'47.34806" N	86°55'41.14787" E
29	24°12'47.84651" N	86°55'45.91074" E	77	24°12'47.36516" N	86°55'40.96963" E
30	24°12'47.69482" N	86°55'45.15752" E	78	24°12'47.48548" N	86°55'40.64830" E
31	24°12'47.72003" N	86°55'45.63873" E	79	24°12'47.82168" N	86°55'40.82200" E
32	24°12'47.63575" N	86°55'46.84984" E	80	24°12'47.80401" N	86°55'40.64042" E
33	24°12'47.54981" N	86°55'46.92963" E	81	24°12'48.23079" N	86°55'40.83441" E
34	24°12'47.47234" N	86°55'46.87806" E	82	24°12'48.92620" N	86°55'40.95350" E

35	24°12'47.36502' N	86°55'47.37997' E	83	24°12'48.94690" N	86°55'41.10733" E
36	24°12'47.00372' N	86°55'47.41298" E	84	24°12'48.89884" N	86°55'41.33813" E
37	24°12'46.61748' N	86°55'47.52109" E	85	24°12'48.88001" N	86°55'41.53886" E
38	24°12'46.64606" N	86°55'47.89816" E	86	24°12'48.87670" N	86°55'41.84656" E
39	24°12'46.30291" N	86°55'48.12064" E	87	24°12'48.81481" N	86°55'41.91038" E
40	24°12'46.30302" N	86°55'48.41893" E	88	24°12'48.93872" N	86°55'42.00575" E
41	24°12'46.51898" N	86°55'48.41605" E	89	24°12'49.06260" N	86°55'41.63048" E
42	24°12'46.49346" N	86°55'49.04076" E	90	24°12'49.37634" N	86°55'41.08530" E
43	24°12'46.62266" N	86°55'49.39244" E	91	24°12'49.82803" N	86°55'41.17228" E
44	24°12'46.20107" N	86°55'49.34575" E	92	24°12'49.84081" N	86°55'40.91617" E
45	24°12'46.05494" N	86°55'49.59444" E	93	24°12'50.07823" N	86°55'40.81192" E
46	24°12'45.77530" N	86°55'49.44918" E	94	24°12'50.87333" N	86°55'41.23643" E
47	24°12'45.93395" N	86°55'48.41353" E	95	24°12'51.77002" N	86°55'41.50790" E
48	24°12'45.98269" N	86°55'47.72968" E			

LAND DETAILS

Khata no.	Plot no.
10	900, 901, 904, 911, 913, 986 & 912
16	983/1043
12	920
27	989, 992 & 985
30	909, 905, 906, 919 & 917
31	983
46	914, 915 & 916

STATUTORY CLEARANCES

1	LOI / Lease docs	The Letter of Intent (LoI) has been issued by District Mining Officer, Deoghar vide letter no. 338/M, dated 29.03.2025.
2	CO	The CO, Palajori vide letter no. 613/Ra., dated 06.07.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatyan & Register II.
3	DMO Cluster	DMO, Deoghar vide memo no. 439/M, dated 19.04.2025 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. 1786, dated 13.08.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.

5	DFD Territorial	Divisional Forest Officer, Deoghar Forest Division vide letter no 1057, dated 22.08.2024 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 Deoghar District (Page no 44 Sl No. 13).
7	Gram Sabha	EDO Palojori vide letter no. 970/V, dated 24.07.2024 informed that Gram Sabha conducted on 09.07.2024.
8	Mine Plan Approval	Approved by The Assistant Director, Geology District Geological Office, Deoghar vide Memo No. 71/S, dated 19.04.2025.
9	Qualified Person	Sri 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	1.743 Ha Life of Mine – 5 years
3	Waste Generation	69900cum
4	Stripping Ratio	1:0.05
5	Working Days	300
6	Bench size & No	6m to 6m and 8 in numbers
7	Elevation of Mine	277m AMSL to 270 m AMSL
8	Ground Level Elevation	270m AMSL
9	Ultimate Working Depth	229 m AMSL
10	Water Table	220 m AMSL
11	Topography of Mine	Area represents gently sloping land.
12	Explosive Requirement	117 kg/day
13	Diesel/fuel requirement	563 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
1 st Year	98733	266578	25881	5196	31077

2 nd Year	100320	270864	17280	5280	22560
3 rd Year	102600	277020	0	5400	5400
4 th Year	102258	276097	0	5382	5382
5 th Year	104310	281637	0	5490	5490
Total	508221	1372195	43161	26748	69909

Land Use

Land Utilization	Existing Land use (Ha)	At the end of plan Period (Ha)	At Conceptual period (Ha)
Excavation	0.00	1.743 (0.186 Ha area shall be backfilled, 0.874 Ha converted into water reservoir and 0.683 Ha shall be left as dead benches).	1.743 (0.186 Ha area shall be backfilled, 0.874 Ha converted into water reservoir and 0.683 Ha shall be left as dead benches).
Waste Dump	Nil	Nil (waste dump to be removed and backfilled)	Nil (comes under quarry)
Road	Nil	0.00	0.00
Village Road Barrier	0.0	0.015	0.015
Safety Zone Plantation	Nil	0.917	0.917
Total	0.0	2.675	2.675
Unused Area	2.675	0.00	0.00
Total Lease Area	2.675		

ENVIRONMENT MANAGEMENT

Green Belt Development

Plantation				
Location	Area (Ha.) or Length (m)	No. of tree	Calculation	Timeline
Safety Zone	0.917	1468	1600 tree per hectare	1st Year
Approach Road	100.00	100	2m X 2m spacing	1st year
Dead Bench	0.683	1093	1600 tree per hectare	End of Mine
Backfilled area (level upto	0.186	298	1600 tree per	End of

Surface)		1 hectare	Mine
	TOTAL	2959	

- 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 n/a, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by FDCI. 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 (in Lakhs) of Environment Management Plan (EMP)		
Particulars	Capital	Recurring
Plantation of 1468" number of trees @Rs. 300 per tree for plant & @Rs. 50 per tree for maintenance	440400	73400
Water Facility for Horticulture "2.81" KLD & Dust Suppression "10.70" KLD (Annual Water Demand 1355"KL @4KL per Tanker, total number of tanker required ("1463") and per tanker cost @Rs. 500)	0	732000
Garland Drain & Desiltation Pond	267500	26750
Environment Monitoring & Compliance	0	50000
Total	707900	882150

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.	3 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

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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 69909 cum in-situ waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 34955 cum (Insitu) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 34955 cum insitu 43693.41 cum loose & 37139.40 cum compact waste shall be temporary dumped in South-Western part during the first years and during second, third, fourth and fifth year. The generated waste and waste materials of temporary dump shall be removed and used for backfilling of exhausted part of quarry in South-Eastern part and it will cover 0.386 Ha.

Water Quality Management

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

Air Quality Management

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

Mitigation measures:

Use of Sharp Drill Bits

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

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

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

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

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

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

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

RISK ASSESSMENT

The Hazard identification and risk analysis 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 (Body Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slice/Topping (Body Injury)	Probable	Moderate	6
6	Loading/Unloading	Body 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 scores 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.

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- 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

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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 drilling 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 minerals 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 MM? 1951.
- 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:

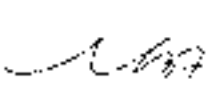
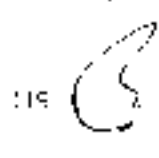
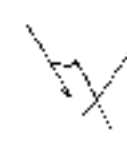
Introduction

The Environmental Management Plan (EMPI) 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 EMPI 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

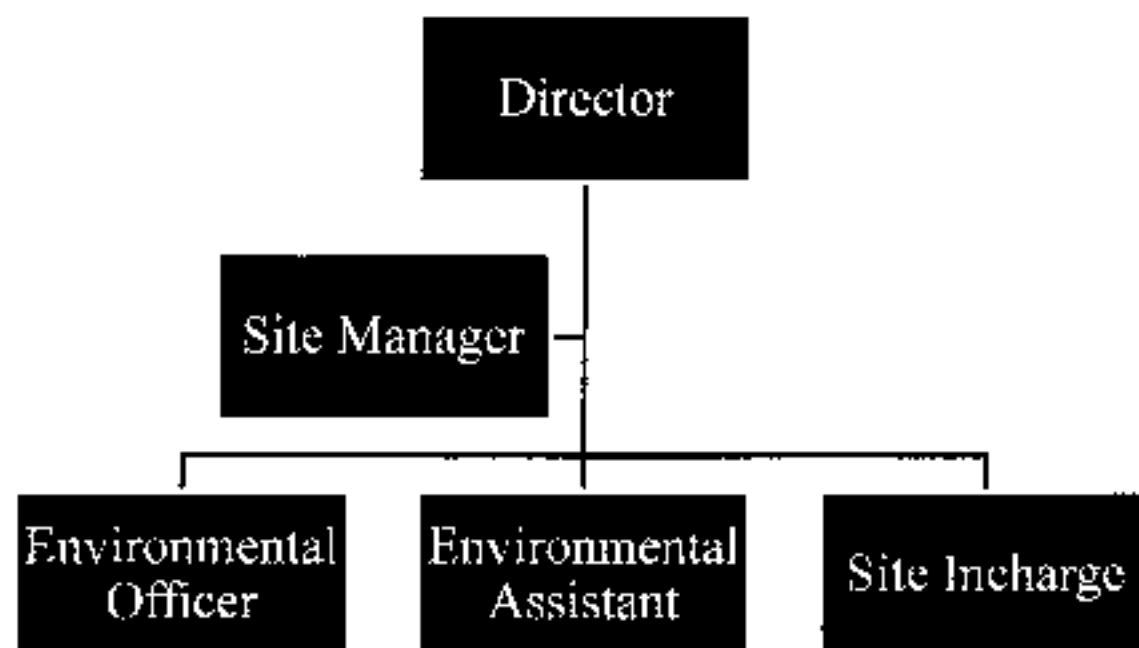
The EMP Cell objectives are:

- 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)

- Associate in development of EIA & EMP with consultants
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Arrange 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 EC

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

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- 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 & comply to statutory compliance
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 Nawadih Stone Deposit of M/s Jai Mata Di Stone Enterprises (Partners : (i) Shri Ayush Chaurasia (ii) Md. Salauddin (iii) Shri Manoj Soren). Village : Nawadih, Anchal : Palejori, Distt. : Deoghar, Jharkhand (2.675 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. In compliance of OM no. F.No. IA3-22/3/2024- A III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation or saplings shall be carried out in the demarked green belt area as the part of tree plantation campaign "Ek Pad Ma Ke Napan" 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 2 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 be 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.

9. Ukharia Stone Deposit of M/s Ambika Mining Company (Partners : (i) Shri Niranjan Kumar Singh (ii) Shri Pranav Kumar Singh (iii) Shri Lavkesh Kumar (iv) Shri Mukesh Kumar Singh (v) Shri Lalan Kumar), Village : Ukharia, Tehsil : Deoghar, Distt. : Deoghar, Jharkhand (1.821 Ha).

(Proposal no.: SIA/IH/MIN/ 538030 /2025)

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

This is a new project which has been taken for appraisal on 23.06.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity – 169128 Tonnes per year 62640 cum per year

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Ukharia Stone Deposit
2	Lessee:	: M/s Ambika Mining Company, Partner: - 1. Sri Niranjan Kumar Singh, 2. Sri Pranav Kumar Singh, 3. Sri Lavkesh Kumar, 4. Sri Mukesh Kumar Singh, 5. Sri Nitesh Kumar Singh & 6. Sri Lalan Kumar.
3	Lessee Address	: Permanent Address : VILLAGE+ PO- BIHAT (KHEMIKARANPUR), PS- BARAUNI DIST-BEGUSARAI, BIHAR.
4	Mine Lease Area	: 1.821 Ha. 4.50 Acre
5	Type of Land	: Non-Forest Raiyati Land
6	Project Cost	: Capital : Rs. 1966600
7	EMP Budget	: Capital : Rs. 454800 Recurring : Rs. 591660 per year
8	New or Expansion	: New
9	Mineable Reserves	: 775441Tonnes 287200.37 Cum
10	Mine Life	: 5 Years
11	Man power	: 20
12	Water Requirement	: 13.54 KLD
13	Water Source	: By authorised hired water tankers
14	DG Set / power	: -
15	Crusher	: No crusher
16	Nearest Water Body	: Jhiluwa river at a distance of 0.6km on western side
17	Nearest Habitation	: Katawatand Village
18	Nearest Rail Station	: Jasidih Railway Station (12 Km)

19	Nearest Air Port	Deoghar Airport (28 Km)
20	Nearest Forest	Divisional Forest Officer, Deoghar certified that the distance of reserved / protected forest is more than 250 meter from proposed project site
21	Road & Highways	NH-333- Chakia- Deoghar Road at about 3km on eastern side

CO-ORDINATES

PILLAR NO	LATITUDE	LONGITUDE
P1	24° 31' 4.589" N	86° 31' 32.122" E
P2	24° 31' 5.402" N	86° 31' 34.507" E
P3	24° 31' 6.243" N	86° 31' 35.071" E
P4	24° 31' 6.795" N	86° 31' 38.589" E
P5	24° 31' 6.520" N	86° 31' 39.215" E
P6	24° 31' 4.818" N	86° 31' 33.455" E
P7	24° 31' 5.634" N	86° 31' 35.457" E
P8	24° 31' 4.522" N	86° 31' 35.969" E
P9	24° 31' 3.856" N	86° 31' 37.084" E
P10	24° 31' 2.342" N	86° 31' 35.512" E
P11	24° 31' 2.695" N	86° 31' 35.151" E
P12	24° 31' 1.118" N	86° 31' 33.628" E
P13	24° 31' 2.053" N	86° 31' 32.341" E
P14	24° 31' 0.456" N	86° 31' 30.933" E
P15	24° 31' 0.967" N	86° 31' 30.089" E
P16	24° 31' 2.771" N	86° 31' 34.102" E

LAND DETAILS

Khata no.	Plot no.
05	51 & 52 (P)
04	67 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	The Letter of Intent (LOI) has been issued by District Mining Officer, Deoghar vide letter no. 403/M, dated 12.04.2025
2	CO	The CO, Deoghar vide letter no. 553/Ra, dated 25.03.2025 has mentioned the plot no. of the project is not recorded as "Jungle-land" in Khatiyan
3	DMO Cluster & DSR	DMO, Deoghar vide memo no. 537/M, dated 15.05.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site and also certified that this project is mentioned in approved DSR of Deoghar District as a potential

4	DFO Wild Life	Recourse Area (Zone - 1). DFO, Wildlife Division, Hazaribag vide letter no. 1097, dated 08.06.2023 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. 565, dated 25.04.2022 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	Gram Sabha	BDO, Deoghar vide letter no. 605/Vi., dated 27.04.2023 Informed that Gram Sabha conducted on 24.02.2022.
7	Mine Plan Approval	Approved by The Assistant Director, Geology, District Geological Office, Deoghar vide Memo No. 80/G, dated 15.05.2025.
8	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	: 1.253 Ha.	Life of Mine – 5 years
3	Waste Generation	: 41683 cum	
4	Stripping Ratio	: 1:0.05	
5	Working Days	: 300	
6	Bench: size & No	: 6m to 6m and 8 in numbers	
7	Elevation of Mine	: 292 m AMSL to 286 m AMSL	
8	Ground Level Elevation	: 286 m AMSL	
9	Ultimate Working Depth	: 244 m AMSL	
10	Water Table	: 235 m AMSL	
11	Topography of Mine	: Area represents small hillock.	
12	Explosive Requirement	: 71 kg/day (To be handle by licensed external Agency)	
13	Diesel/Fuel requirement	: 338 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
1 st Year	54475	147082	18570	2867	21437
2 nd Year	55572	150095	0	2925	2925
3 rd Year	56721	153045	7993	2983	10983
4 th Year	57781	156008	0	3041	3041
5 th Year	62940	169128	0	3297	3297
Total	287189	775410	26568	15115	41683

Land Use

Land Utilization	Existing Land use (Ha)	At the end of plan Period (ha)	At Conceptual period (Ha)
Excavation	0.066	1.253 (0.130ha area shall be Backfilled, 0.812ha converted into water reservoir & 0.311ha shall be left as dead benches)	1.253 (0.150ha area shall be Backfilled, 0.812ha converted into water reservoir & 0.311ha shall be left as dead benches)
Waste Dump	00	Nil (waste dump to be removed and backfilled)	Nil (comes under quarry)
Road Infrastructure	00	0.00	00
(Crusher)	00	0.00	00
Safety Zone	00	0.568	0.568 (plantation)
Plantation			
Total	0.066	1.821	1.821
House Area	1.755	0.00	0.00
Total Lease Area		1.821	

ENVIRONMENT MANAGEMENT

Green Belt Development

Location	Plantation		Calculation	Timeline
	Area (Ha.) or Length (m)	No. of tree		
Safety Zone	0.568	909	1600 tree per hectare 2m X 2m spacing	1st Year
Approach Road	100	100	1600 tree per hectare	1st year
Dead Bench	0.311	498	1600 tree per hectare	End of Mine
Backfilled area (level upto surface)	0.130	208	1600 tree per hectare	End of Mine

TOTAL	1715
Species: Neem, Peepal, Arjun, Ashoka, Gulmohar, Banyan, Bamboo: - Bombas, Nutans, Toolda, Strictus & other Native Species	

- **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 (in Lakhs) of Environment Management Plan (EMP)		
Particulars	Capital	Recurring
Plantation of "905" number of trees @Rs.300 per tree for plant & @Rs. 50 per tree for maintenance	272700.00	45450.00
Water Facility for Horticulture "5.454" KLD & Dust Suppression "7.284" KLD (Annual Water Demand "3821.4"KL @4KL per Tanker, total number of tanker required ("956") and per tanker cost @Rs. 500)	0.00	478000.00
Garland Drain & Desiltation Pond	182100.00	18210.00
Environment Monitoring & Compliance	0.00	50000.00
Total	454800.00	591660.00

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.	3 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

In this applied lease area, the stone deposit is covered with 2m layer of gummy 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 41683 cum in situ waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 20842cum (in situ) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 20842 cum in situ, 26052 cum loose & 22144.20 cum compact waste shall be temporary dumped in southern part during first & second years, and during third, fourth & fifth year the generated waste and waste materials of temporary dump shall be removed and used for backfilling of exhausted part of quarry in northern part and it will cover 2.120ha.

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. Decanted water will be allowed to flow into natural drainage
- Gulland drain would be provided on upper contour around the quarry. Water collected in Gulland 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 machines & transport vehicles would be repaired & maintained regularly.

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

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

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

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

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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 boxes 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

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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.

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

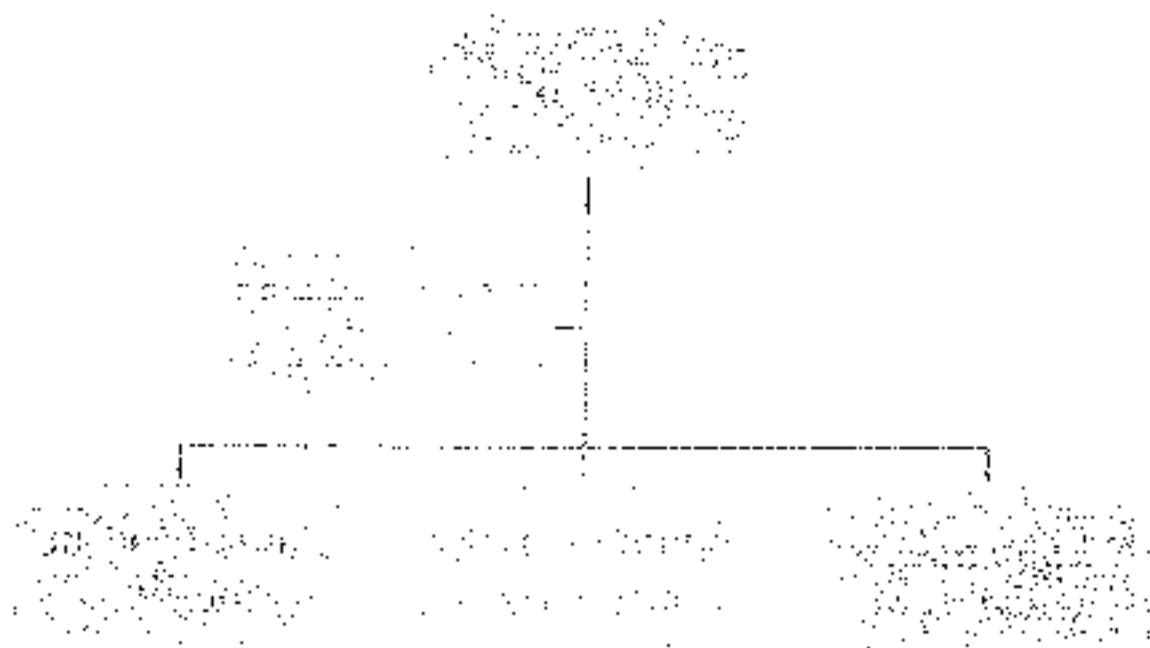
The EMP Cell objectives are:

- 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):

- Associate in development of EIA & EMP with consultants
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Arrange 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 & comply to statutory compliance
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 notified 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 machines / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
If any tree felling than necessary permission shall be taken from the competent authority.
- i. 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 animal's falling in to the water bodies created at the end of life of the mine.

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- 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 Ukharla Stone Deposit of M/s Ambika Mining Company (Partners : (i) Shri Niranjan Kumar Singh (ii) Shri Pranav Kumar Singh (iii) Shri Lavkesh Kumar (iv) Shri Mukesh Kumar Singh (v) Shri Lalan Kumar), Village : Ukharla, Tehsil : Deoghar, Distt. : Deoghar, Jharkhand (1.821 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - I 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 Mo 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.

10. **Laharjori Stone Deposit of M/s Jai Maa Sharde Stone Works** {Partners : (i) Shri Pappu Mandal (ii) Shri Jitendra Mandal (iii) Shri Sintu Kumar (iv) Md. Jasim Akhtar}. Village - Laharjori, Tehsil : Margomunda, Distt. : Deoghar, Jharkhand (1.667 Ha).

(Proposal no.: SIA/JH/MIN/ 541877 /2025)

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

This is a new project which has been taken for appraisal on 23.06.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity – 90262 Tonnes per Year or 33431 Cum per Year

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Laharjori Stone Deposit
2	Lessee:	M/s Jai Maa Sharde Stone Works Partner 1) Sri Pappu Mandal, 2) Sri Jitendra Mandal, 3) Sri Sintu Kumar & 4) Md. Jasim Akhtar
3	Lessee Address	Address: Village- Nandhri, Po- Budhat, Ps- Despur, Dist- Deoghar, Jharkhand
4	Mining Lease Area	1.667 Ha 4.12 Acre
5	Type of Land	Non-Forest Barsh Land
6	Project Cost	Capital: Rs. 2031000
7	IMP Budget	Capital: Rs. 494100 Recurring: Rs. 626000 per year
8	New or Expansion	New
9	Mineable Reserves	346832 Tonnes 128486.3 Cum
10	Mine Life	5 Years
11	Man power	15
12	Water Requirement	13.95 KLD
13	Water Source	By authorised hired water tankers
14	DG Set / power	
15	Crusher	No crusher
16	Nearest Water Body	Hant river at a distance of 5km from lease area on north eastern side
17	Nearest Habitation	Chajuriyatan Village
18	Nearest Rail Station	Madankata railway station which are about 10 Km
19	Nearest Air Port	Deoghar Airport 51 Km

20	Nearest Forest	:	Divisional Forest Officer, Deoghar certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
21	Road & Highways	:	State highway Madhupur- Jamtara road at about 1.4Km on northern side

CO-ORDINATES

PILLAR ID	LATITUDE	LONGITUDE	PILLAR ID	LATITUDE	LONGITUDE
P1	24°09'06.44252" N	86°35'57.08908" E	P32	24°09'03.13492" N	86°35'56.62608" E
P2	24°09'05.80464" N	86°35'58.24896" E	P33	24°09'02.93238" N	86°35'56.49544" E
P3	24°09'05.66370" N	86°35'58.63380" E	P34	24°09'02.79508" N	86°35'56.62712" E
P4	24°09'06.02572" N	86°35'58.88580" E	P35	24°09'02.43320" N	86°35'56.40792" E
P5	24°09'06.35515" N	86°35'59.19979" E	P36	24°09'02.11874" N	86°35'56.24484" E
P6	24°09'06.80396" N	86°35'59.75718" E	P37	24°09'02.20421" N	86°35'56.01955" E
P7	24°09'07.03206" N	86°36'00.12402" E	P38	24°09'02.33255" N	86°35'55.76132" E
P8	24°09'07.19906" N	86°36'00.82105" E	P39	24°09'02.47399" N	86°35'55.55839" E
P9	24°09'07.22729" N	86°36'01.08346" E	P40	24°09'02.03004" N	86°35'55.22226" E
P10	24°09'07.47385" N	86°36'01.93964" E	P41	24°09'01.89766" N	86°35'55.32112" E
P11	24°09'07.12174" N	86°36'02.17512" E	P42	24°09'01.56100" N	86°35'55.15807" E
P12	24°09'06.76944" N	86°36'02.34029" E	P43	24°09'01.28981" N	86°35'55.07455" E
P13	24°09'06.53710" N	86°36'02.31757" E	P44	24°09'00.92794" N	86°35'54.86474" E
P14	24°09'06.16669" N	86°36'02.13120" E	P45	24°09'00.82084" N	86°35'55.03852" E
P15	24°09'05.57622" N	86°36'01.68304" E	P46	24°09'00.45554" N	86°35'54.70872" E
P16	24°09'05.20135" N	86°36'01.43572" E	P47	24°09'00.07060" N	86°35'54.36114" E
P17	24°09'04.77328" N	86°36'01.13705" E	P48	24°09'00.33635" N	86°35'53.99934" E
P18	24°09'04.54561" N	86°36'00.93586" E	P49	24°09'00.67666" N	86°35'54.19046" E
P19	24°09'05.30644" N	86°35'59.93203" E	P50	24°09'00.87775" N	86°35'53.78669" E
P20	24°09'04.75099" N	86°35'59.42198" E	P51	24°09'01.73034" N	86°35'54.12624" E
P21	24°09'04.17175" N	86°35'58.99063" E	P52	24°09'02.03191" N	86°35'54.30343" E
P22	24°09'03.86802" N	86°35'59.30660" E	P53	24°09'02.49700" N	86°35'54.49420" E
P23	24°09'03.44923" N	86°35'58.91312" E	P54	24°09'02.25302" N	86°35'54.95435" E
P24	24°09'03.00380" N	86°35'58.46550" E	P55	24°09'02.64935" N	86°35'55.18748" E
P25	24°09'03.15328" N	86°35'58.37503" E	P56	24°09'02.87161" N	86°35'54.64864" E
P26	24°09'03.40045" N	86°35'58.14924" E	P57	24°09'03.16465" N	86°35'54.84930" E
P27	24°09'03.55504" N	86°35'58.05312" E	P58	24°09'03.61260" N	86°35'55.07761" E
P28	24°09'03.80783" N	86°35'58.00171" E	P59	24°09'04.19479" N	86°35'55.45550" E
P29	24°09'04.01861" N	86°35'57.66918" E	P60	24°09'04.91026" N	86°35'56.02650" E
P30	24°09'04.19904" N	86°35'57.25842" E	P61	24°09'05.69437" N	86°35'56.65186" E
P31	24°09'03.62603" N	86°35'56.90580" E			

LAND DETAILS

Khata no.	Plot no.
14	1305 & 1306
40	1320, 1321, 1322, 1325 1327, 1328, 1332, 1333 & 1334
46	1307, 1309, 1310, 1316 & 1319

STATUTORY CLEARANCES

1	LOI/Lease no.s	The Letter of Intent (LOI) has been issued by District Mining Officer, Deoghar vide letter no. 554/M, dated 20.05.2025.
2	CO	The CO, Margomunda vide letter no. 156/3a, dated 15.04.2025 has mentioned the plot no. of the project is not recorded as "Jungle Jhar" in R.D. Khariyan & register II and also mentioned that the habitation 16.7 houses within 500 meters of proposed project site, accordingly, PAs has submitted EM-2 for the same.
3	DMC Cluster	DMO, Deoghar vide memo no. 681/M, dated 16.06.2025 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 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, Deoghar Forest Division vide letter no. 95, dated 25.01.2025 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 Deoghar District (Page no. 44 Sl. No. 17).
7	Gram Sabha	BDO, Margomunda vide letter no. 385/Vi, dated 17.04.2025 informed that Gram Sabha conducted on 04.03.2025.
8	Mine Plan Approval	Approved by The Assistant Director, Geology, District Geological Office, Deoghar vide Memo No. 95, dated 16.06.2025.
9	Qualified Person	Shri. Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

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Working Details

1	Mining Method	: Semi-mechanized "OTFM" Method
2	Quarry Area	: 0.987 Ha. Life of Mine – 5 years
3	Waste Generation	: 31840 cum
4	Stripping Ratio	: 1:0.09
5	Working Days	: 300
6	Bench: size & No	: 6m to 6m and 4 in numbers
7	Elevation of Mine	: 270 m AMSL to 265 m AMSL
8	Ground Level Elevation	: 265 m AMSL
9	Ultimate Working Depth	: 245 m AMSL
10	Water Table	: 230 m AMSL
11	Topography of Mine	: Area represents gently sloping land.
12	Explosive Requirement	: 38 kg/day (To be handle by licensed external Agency)
13	Diesel/Fuel requirement	: 181 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
1 st Year	22199	59936	9381	1168	10549
2 nd Year	22800	61560	6660	1200	7860
3 rd Year	23313	62945	0	1227	1227
4 th Year	26690	72064	9039	1405	10144
5 th Year	33431	90262	0	1760	1760
Total	128432	346767	25080	6760	31840

Land Use

Land Utilization	Existing Land use (Ha)	At the end of plan Period (ha)	At Conceptual period (Ha)
Excavation	0.0	0.987 (0.141 Ha area shall be Backfilled, 0.492 Ha converted in to water reservoir & 0.354 Ha shall be left as dead benches)	0.987 (0.141 Ha area shall be Backfilled, 0.492 Ha converted in to water reservoir & 0.354 Ha shall be left as dead benches)
Waste Dump	00	Nil (0.255 Ha waste dump to be removed and backfilled)	Nil (0.255 Ha comes under quarry)
Safety Zone	00	0.680	0.680

Plantation			
Total	0.0	1.667	1.667
Unused Area	1.667	0.00	0.00
Total Lease Area		1.667	

ENVIRONMENT MANAGEMENT

Green Belt Development

Location	Plantation Area (ha) or Length (m)	No. of tree	Calculation 1600 tree per hectare 7m x 7m spacing 1600 tree per hectare 1000 tree per hectare	Timeline
Safety Zone	0.680	1088.00	hectare	1st Year
Approach Road	160.000	160.00	7m x 7m spacing	1st year
Dead Bench	0.354	567.00	hectare	End of
Backfilled area (level upto surface)	0.143	226.00	1000 tree per hectare	Mine
TOTAL		2041.00		

Species: Neem, Fennel, Arjun, Ashoka, Guimohar, Banyan, Bamboo, Boros, Nuan, Acacia, Shishu & other Native Species

- Gation 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 n/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCC, 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 (in Lakhs) of Environment Management Plan (EMP)		
Particulars	Capita	Recurring
Plantation of 1248 number of trees @Rs. 500 per tree for plant & @Rs. 50 per tree for maintenance	374400.00	62400.00
Water facility for Horticulture 6.528 KLD & Dust Suppression 6.568 KLD (Annual Water Demand 3958.8 KL @4KL per tanker, total number of tankers required 1990 and per tanker cost @Rs. 500)	0.00	495000.00
Garland Drain & Deviation Fund	166700.00	16670.00
Environment Monitoring & Compliance	0.00	50000.00
Total	541100.00	624070.00

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

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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.	3 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

In this applied lease area, the stone deposit is covered with 2m layer of gritty 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 31840 cum in-situ waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 15920cum (Insitu) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 15920 cum insitu 19899.75 cum loose & 16914.79 cum compact waste shall be used for dumping and backfilling. From the first year to third year, the waste shall be temporarily dumped in the northern part of the applied lease area and during fourth & fifth year the generated waste and waste materials of temporary dump shall be removed and used for backfilling of exhausted part of quarry in central part and it will cover 0.141ha.

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 Equipments – 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 Gadi road by using water Tankers
- Regular repair of Haul road
- All Trucks carrying stone outside lease area will have PUI 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	Hail by fly rock (Body Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	3
5	Bench formation	Fall / Slide / Toppling (Body Injury)	Probable	Moderate	6
6	Loading/Unloading	Body 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 drilling rig itself.

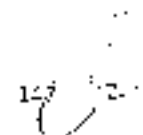
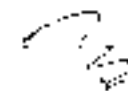
The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

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

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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:

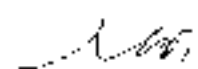
- Rough access roads
- Time pressure
- Inadequate brakes (possibly from lack of maintenance)
- Careless parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overtaking vehicles

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

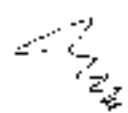
Transportation

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.



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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

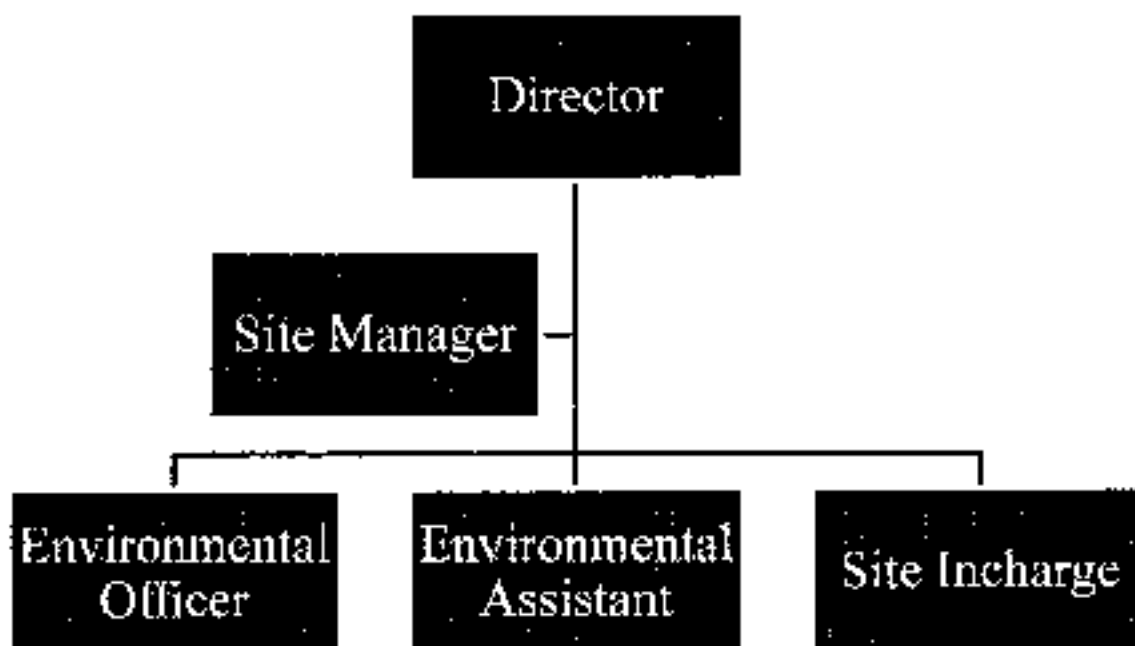
The EMP Cell objectives are:

- 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)

- Associate in development of EIA & EMP with consultants
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Arrange environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

Environmental Assistant (EA)

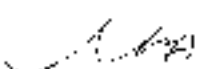
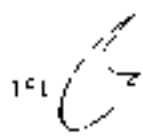
- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training 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 & comply to statutory compliance
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

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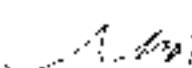
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- d. The Boundary Pillars of the proposed mine lease area will be maintained properly
 - e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
 - f. The plantation work will be completed 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 falling 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 animal falling in to the water bodies created at the end of life of the mine
- Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Laharjori Stone Deposit of M/s Jai Maa Sharde Stone Works (Partners : (i) Shri Pappu Mandal (ii) Shri Jitendra Mandal (iii) Shri Sintu Kumar (iv) Md. Jasim Akhtar), Village : Laharjori, Tehsil : Margomunda, Distt. : Deoghar, Jharkhand (1.667 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. In compliance of OM no. F.No. (A3-22/3/2024-A.III) (F-241564) 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 Pad Ma Ke Moon" and the details of the same shall be uploaded in the MeritIT Portal (<https://merititg.mca.gov.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 be 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. Chormurda Stone Deposit of Shri Ravi Shankar Kumar, Village : Chormurda, Anchal : Jarmundi, Distt. : Dumka, Jharkhand (1.374 Ha).

(Proposal no.: SIA/JH/MIN/ 541413 /2025)

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

This is a new project which has been taken for appraisal on 23.06.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity –63484 Tonnes per year or 23513 cum per year

Project and Location Details:

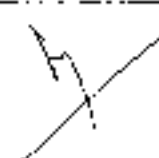
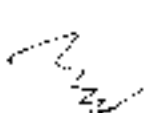
Sl	Parameter	Details
1	Project Name	: Chormurda Stone Deposit
2	Lessee:	: Sri Ravi Shankar Kumar
3	Lessee Address	: Address: 5/o - Sri Upendra Prasad Singh, House No- 298, Ward No.- 4, Williams Town, Sri Krshnapuri, P.O. + P.S. + District- Deoghar, Jharkhand
4	Mine Lease Area	: 1.374 Ha. 3.394Acre

5	Type of Land	Non Forest Riyati Land	
6	Project Cost	Capital: Rs. 1841500	
7	EMP Budget	Capital: Rs. 384300	Recurring: Rs. 496390 per year
8	New or Expansion	New	
9	Mineable Reserve	551732 tonnes	204345.19 Cum
10	Mine Life	10 Years	
11	Max power	17	
12	Water Requirement	11.11 KLD	
13	Water Source	By authorised hired water tankers	
14	DG Set / power	-	
15	Crusher	No crusher	
16	Nearest Water Body	Topra river at a distance of 2.5 km from applied area on eastern side.	
17	Nearest Habitation	Bikladli Village - 0.52 km	
18	Nearest Rail Station	Basakinath Railway Station at a distance of 8.3 km in North East direction	
19	Nearest Air Port	Deoghar Airport at a distance of 5.6 km in North-West direction	
20	Nearest Forest	Divisional Forest Officer, Dumka certified that the distance of reserved / protected forest is more than 250 meter from proposed project site	
21	Nearest Road	NH 154A- Dumka- Deoghar at about 6.5 km on Northern side.	
22	Road & Highways	NH 154A- Dumka- Deoghar at about 6.5 km on Northern side.	

Co-Ordinates:

PILLAR NO	LATITUDE	LONGITUDE	PILLAR NO	LATITUDE	LONGITUDE
P1	24°20'25.61100" N	87°00'09.81246" E	P17	24°20'24.82573" N	87°00'13.54500" E
P2	24°20'25.59503" N	87°00'11.88104" E	P18	24°20'24.86703" N	87°00'13.12509" E
P3	24°20'26.04293" N	87°00'13.12687" E	P19	24°20'24.76946" N	87°00'12.73370" E
P4	24°20'26.04988" N	87°00'15.13213" E	P20	24°20'24.76720" N	87°00'12.30775" E
P5	24°20'25.66682" N	87°00'15.88341" E	P21	24°20'24.14783" N	87°00'11.95423" E
P6	24°20'25.37538" N	87°00'16.72854" E	P22	24°20'23.55936" N	87°00'11.87536" E
P7	24°20'25.13278" N	87°00'16.63070" E	P23	24°20'23.50190" N	87°00'11.61308" E
P8	24°20'25.29668" N	87°00'16.20112" E	P24	24°20'23.06900" N	87°00'10.18239" E
P9	24°20'25.09657" N	87°00'15.34078" E	P25	24°20'23.46135" N	87°00'10.48945" E
P10	24°20'24.48373" N	87°00'15.04897" E	P26	24°20'23.78555" N	87°00'09.85205" E
P11	24°20'24.07481" N	87°00'16.16447" E	P27	24°20'23.88019" N	87°00'09.15112" E



P12	24°20'23.86111" N	87°00'16.11155" E	P28	24°20'24.00061" N	87°00'08.55968" E
P13	24°20'23.70746" N	87°00'14.97402" E	P29	24°20'24.08237" N	87°00'08.21696" E
P14	24°20'24.23472" N	87°00'14.13349" E	P30	24°20'24.93658" N	87°00'08.71376" E
P15	24°20'24.38311" N	87°00'14.13770" E	P31	24°20'26.16954" N	87°00'09.43081" E
P16	24°20'24.61538" N	87°00'13.91800" E			

LAND DETAILS

Khata no.	Plot no.
06	398 (P) & 400 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	: The Letter of Intent (LOI) has been issued by District Mining Officer, Dumka vide letter no. 635/M, dated 25.04.2025.
2	CO	: The CO, Jarmundi (Dumka) vide letter no. 434/Ra., dated 22.03.2025 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster	: DMO, Dumka vide memo no. 773/M, dated 02.06.2025 certified that 01 other mining lease area (2.41 Acre) exists within 500 m radius from proposed project site and total area is 5.804 Acre.
4	DFO Wild life	: DFO, Wildlife Division, Hazaribag vide letter no. 406, 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, Dumka Forest Division vide letter no. 559 dated 12.03.2025 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. 787/M, dated 03.06.2025 that this project is mentioned in approved DSR of Dumka District as a potential area (Page no. 190).
7	Gram Sabha	: Gram Sabha conducted on 11.12.2024.
8	Mine Plan Approval	: Approved by DMO, Dumka vide Letter No. 726/M, dated 23.05.2025.
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	Some mechanized "OI-M" Method
2	Quarry Area	0.806 Ha
3	Waste Generation	75031 cum
4	Stripping Ratio	1:0.09
5	Working Days	300
6	Bench size & No	6m to 6m and 6 in numbers
7	Elevation of Mine	233m AMSL to 228 m AMSL
8	Ground Level Elevation	228m AMSL
9	Ultimate Working Depth	200 m AMSL
10	Water Table	190 m AMSL
11	Topography of Mine	Area represents gently sloping land
12	Explosive Requirement	27 kg/day
13	Diesel/Fuel requirement	137 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
1 st Year	21318	50787	9240	1122	10362
2 nd Year	18497	49941	10230	974	11204
3 rd Year	20900	56440	0	1100	1100
4 th Year	21473	57841	0	1128	1128
5 th Year	23513	62484	0	1238	1238
Total	105698	278482	19470	5561	25031

Land Use

Land Utilization	Existing Land use (Ha)	At the end of plan Period (Ha)	At Conceptual period (Ha)
Excavation	0.0	0.502	0.850 (0.217 Ha area shall be backfilled, 0.533 Ha converted into water reservoir & 0.110 Ha shall be left as dead

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			benches)
Waste Dump	0.0	0.172	Nil (comes under quarry)
Road	0.0	0.006	0.00
Infrastructure (Crusher)	0.0	0.0	0.0
Safety Zone Plantation	0.0	0.514	0.514
Total	0.000	1.194	1.374
Unused Area	1.374	0.180	0.0
Total Lease Area		1.374	

ENVIRONMENT MANAGEMENT

Green Belt Development

Location	Plantation		Calculation	Timeline
	Area (Ha.) or Length (m)	No. of tree		
Safety Zone	0.514	823	1600 tree per hectare	1st Year
Approach Road	100.00	100	2m X 2m spacing	1st year
Dead Bench	0.110	176	1600 tree per hectare	End of Mine
Backfilled area (level upto surface)	0.217	348	1600 tree per hectare	End of Mine
TOTAL		1447		

- 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 (in Lakhs) of Environment Management Plan (EMP)		
Particulars	Capital	Recurring
Plantation of "823" number of trees @Rs.300 per tree for plant & @Rs. 50 per tree for maintenance	246900.00	41150
Water Facility for Horticulture "4.94" KLD & Dust Suppression "5.50" KLD (Annual Water Demand "3132"KL @4KL per Tanker, total number of tanker required ("783") and per tanker cost @Rs. 500)	0	391500.00

Garland Drain & Desiltation Pond	137400	13740
Environment Monitoring & Compliance	0	50000
Total	334300.00	496290.00

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	3 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

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.

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

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

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

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

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

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

RISK ASSESSMENT

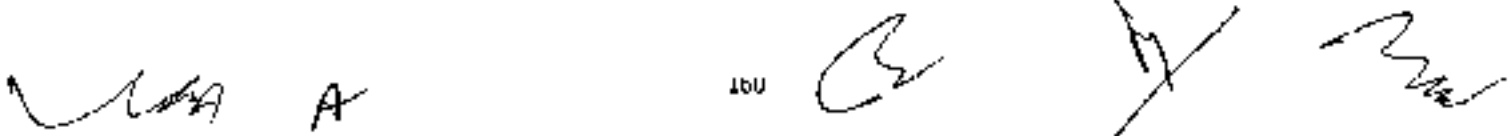
The hazard identification and risk analysis are done using qualitative method.

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"

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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 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

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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.
- 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 boxes 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:

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- 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

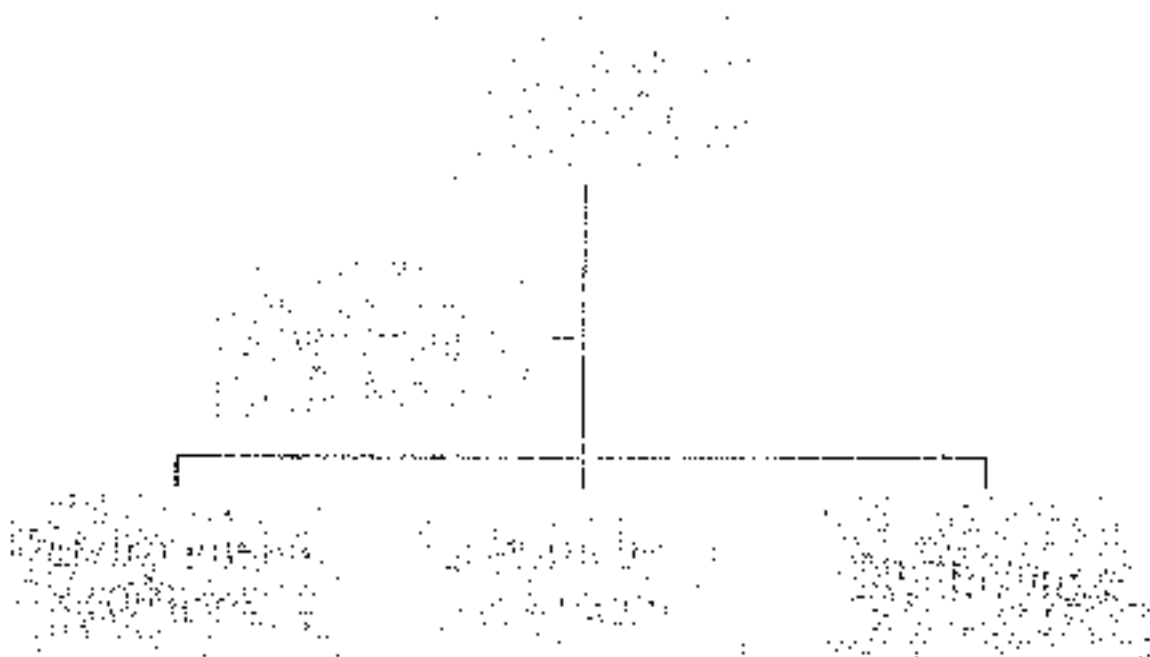
The EMP Cell objectives are:

- 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)

- Associate in development of EIA & EMP with consultants
- Monitor and report environmental performance
- Coordinate with regulatory authorities

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- Arrange 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

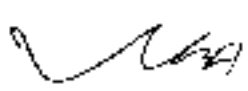
Director/Top Management Responsibilities

- 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

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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 & comply to statutory compliance

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 Concentration stage of the Mine.

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- 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 Chormuria Stone Deposit of Shri Ravi Shankar Kumar, Village : Chormuria, Anchal : Jarmundi, Distt. : Dumka, Jharkhand (1.374 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. In compliance of OM no. F.No. IA3-77/3/2024-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 be submitted along with 6 monthly compliance
- VI. Ensure use of Quality PPEs equivalent to 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. Bandarjori Stone Deposit of Shri Ravi Shankar Kumar, Village : Bandarjori, Anchal : Jarmundi, Distt. : Dumka, Jharkhand (2.242 Ha).

(Proposal no.: SIA/JH/MIN/ 541487 /2025)

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

This is a new project which has been taken for appraisal on 24.06.2025

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity = 103626 Tonnes per year or 38380 cum per year

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Bandarjori Stone Deposit
2	Lessee	Shri Ravi Shankar Kumar
3	Lessee Address:	Address: S/O. Shri Upendra Prasad Singh, House No- 798, Ward No-4, Williams Town, Shri Krishnapur F.O. - P.S. - District- Deoghar Jharkhand
4	Mine Lease Area	2.242 Ha / 5.540 Acre
5	Type of Land	Non-Forest Raviati Land
6	Project Cost	Capital: Rs. 2305700
7	EMP Budget	Capital: Rs. 629400 / Recurring: Rs. 789620 per year
8	Now or Expansion	New

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9	Mineable Reserves	: 949060 Tonnes	351503.70 Cum
10	Mine Life	: 10 Years	
11	Man power	: 20	
12	Water Requirement	: 18.07 KLD	
13	Water Source	: By authorised hired water tankers	
14	DG Set / power	: -	
15	Crusher	: Yes	
16	Nearest Water Body	: Tepra river at a distance of 0.9 km from applied area on N-S.	
17	Nearest Habitation	: Bandarjori Village – 0.5 km	
18	Nearest Rail Station	: Basukinath Railway Station at a distance of 6.3 km.	
19	Nearest Air Port	: Deoghar Airport at a distance of 54 km	
20	Nearest Forest	: Divisional Forest Officer, Dumka certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.	
21	Road & Highways	: NH 114A- Dumka- Deoghar at about 5.5km on northern side.	

CO-ORDINATES:

PILLAR NO	LATITUDE	LONGITUDE	PILLAR NO	LATITUDE	LONGITUDE
P1	24°20'57.16932" N	87°01'03.15923" E	P50	24°20'49.87169" N	87°00'56.41034" E
P2	24°20'56.87682" N	87°01'03.37282" E	P51	24°20'49.78565" N	87°00'56.50423" E
P3	24°20'56.60185" N	87°01'03.25308" E	P52	24°20'49.55770" N	87°00'56.40559" E
P4	24°20'56.54033" N	87°01'03.21910" E	P53	24°20'49.27380" N	87°00'56.32106" E
P5	24°20'56.28052" N	87°01'03.01811" E	P54	24°20'49.19003" N	87°00'56.59024" E
P6	24°20'56.13659" N	87°01'03.17978" E	P55	24°20'49.54618" N	87°00'56.81563" E
P7	24°20'55.81266" N	87°01'03.15415" E	P56	24°20'49.90142" N	87°00'57.13121" E
P8	24°20'55.78170" N	87°01'03.73018" E	P57	24°20'50.30142" N	87°00'57.43642" E
P9	24°20'55.54424" N	87°01'03.43016" E	P58	24°20'50.73385" N	87°00'57.62426" E
P10	24°20'55.22485" N	87°01'03.50486" E	P59	24°20'50.84743" N	87°00'57.40643" E
P11	24°20'54.53657" N	87°01'03.98744" E	P60	24°20'50.89909" N	87°00'57.20360" E

P12	24°20'54.08480" N	87°01'03.28004" E	P61	24°20'50.88188" N	87°00'57.03271" E
P13	24°20'53.85492" N	87°01'02.60695" E	P62	24°20'50.98772" N	87°00'56.74040" E
P14	24°20'53.14481" N	87°01'02.21354" E	P63	24°20'51.21435" N	87°00'56.76797" E
P15	24°20'52.60304" N	87°01'01.79652" E	P64	24°20'51.67939" N	87°00'56.97083" E
P16	24°20'52.15189" N	87°01'01.44890" E	P65	24°20'51.72098" N	87°00'57.15396" E
P17	24°20'52.14578" N	87°01'00.99815" E	P66	24°20'51.87293" N	87°00'57.24410" E
P18	24°20'52.36357" N	87°01'00.70802" E	P67	24°20'52.17130" N	87°00'57.34184" E
P19	24°20'51.94550" N	87°01'00.45444" E	P68	24°20'52.35025" N	87°00'57.29306" E
P20	24°20'51.80611" N	87°01'00.59953" E	P69	24°20'52.90080" N	87°00'57.52598" E
P21	24°20'51.06208" N	87°00'59.97180" E	P70	24°20'53.40048" N	87°00'57.95233" E
P22	24°20'51.17032" N	87°00'59.75120" E	P71	24°20'53.87284" N	87°00'58.20754" E
P23	24°20'51.23371" N	87°00'59.60089" E	P72	24°20'54.11108" N	87°00'58.23044" E
P24	24°20'50.89049" N	87°00'59.30543" E	P73	24°20'54.45517" N	87°00'58.19203" E
P25	24°20'50.16712" N	87°00'59.42635" E	P74	24°20'54.57127" N	87°00'59.36105" E
P26	24°20'50.55554" N	87°00'59.08752" E	P75	24°20'54.37334" N	87°00'59.88690" E
P27	24°20'49.43249" N	87°00'58.07016" E	P76	24°20'54.22279" N	87°01'00.10095" E
P28	24°20'48.95765" N	87°00'57.70838" E	P77	24°20'54.01118" N	87°00'59.94317" E
P29	24°20'48.59120" N	87°00'57.34930" E	P78	24°20'53.74536" N	87°00'59.83517" E
P30	24°20'48.84932" N	87°00'56.84371" E	P79	24°20'53.36599" N	87°00'59.71021" E
P31	24°20'49.63714" N	87°00'56.56858" E	P80	24°20'53.06752" N	87°00'59.30228" E
P32	24°20'48.77916" N	87°00'56.14252" E	P81	24°20'52.98205" N	87°00'59.89428" E
P33	24°20'48.95124" N	87°00'55.80925" E	P82	24°20'53.50002" N	87°01'00.27210" E
P34	24°20'48.52997" N	87°00'55.90779" E	P83	24°20'54.01777" N	87°01'00.61674" E
P35	24°20'48.52655" N	87°00'55.34626" E	P84	24°20'54.19970" N	87°01'00.93924" E
P36	24°20'48.75626" N	87°00'54.79809" E	P85	24°20'54.59337" N	87°01'01.43980" E
P37	24°20'49.07724" N	87°00'54.22705" E	P86	24°20'55.11425" N	87°01'00.85043" E
P38	24°20'49.36970" N	87°00'54.43740" E	P87	24°20'55.34657" N	87°01'01.72654" E
P39	24°20'49.77917" N	87°00'54.95583" E	P88	24°20'55.56595" N	87°01'01.72373" E

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P40	24°20'50.03722" N	87°00'55.23001" E	P89	24°20'55.75697" N	87°01'01.27585" E
P41	24°20'50.28151" N	87°00'55.43662" E	P90	24°20'55.93247" N	87°01'01.40826" E
P42	24°20'50.44322" N	87°00'55.51553" E	P91	24°20'56.07179" N	87°01'01.62239" E
P43	24°20'50.90777" N	87°00'55.77476" E	P92	24°20'56.08385" N	87°01'01.71725" E
P44	24°20'50.82234" N	87°00'55.99728" E	P93	24°20'56.51736" N	87°01'02.26661" E
P45	24°20'50.81374" N	87°00'56.16630" E	P94	24°20'56.45666" N	87°01'02.53376" E
P46	24°20'50.67607" N	87°00'56.42453" E	P95	24°20'56.45951" N	87°01'02.63125" E
P47	24°20'50.47386" N	87°00'56.78132" E	P96	24°20'56.84032" N	87°01'02.90330" E
P48	24°20'50.34912" N	87°00'56.58880" E	P97	24°20'57.10052" N	87°01'03.06764" E
P49	24°20'50.06526" N	87°00'56.43853" E			

LAND DETAILS

Khata no.	Plot no.
12	1029, 1030, 1078(P), 1079(P)
15	1054, 1073, 1065
16	1062
26	1064
27	1034(P), 1035, 1056, 1057, 1058(P), 1077(P), 1081, 1087
29	1063, 1074, 1075
32	1036, 1037, 1038
34	1061(P), 1076

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LOI) has been issued by District Mining Officer, Dumka vide letter no. 640/M, dated 28.04.2025.
2	CO	:	The CO, Jarmundi (Dumka) vide letter no. 435/Ra., dated 22.03.2025 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyani & Register II.
3	DMO Cluster	:	DMO, Dumka vide memo no. 759/M, dated 31.05.2025 certified that no other mining lease area exists within 500 m radius from

		proposed project site and total area is 5.540 Acre.
4	DFD Wildlife	DFD, Wildlife Division, Hazaribag vide letter no. 404, dated 08.03.2025 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFD Territorial	Divisional Forest Officer, Dumka Forest Division vide letter no. 560 dated 12.03.2025 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	The DFO, Dumka has been certified vide memo no. 786/M dated 03.06.2025 that this project is mentioned in approved DSR of Dumka District as a potential area (Page no. 190).
7	Gram Sabha	Gram Sabha conducted on 02.12.2024.
8	Mine Plan Approval	Approved by DFO, Dumka vide Letter No. 750/td, dated 24.05.2025.
9	Qualified Person	Shr. Adya Bhushan Misra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	Semi-mechanized (C/M) Method
2	Quarry Area	0.698 Ha
		Life of Mine = 10 years
3	Waste Generation	40250 cum
4	Stripping Ratio	1.0:0.9
5	Working Days	300
6	Benching size & No	6m to 8m and 6 in numbers
7	Elevation of Mine	221 m AMSL to 215 m AMSL
8	Ground Level Elevation	215 m AMSL
9	Ultimate Working Depth	184 m AMSL
10	Water Table	175 m AMSL
11	Topography of Mine	Area represents gently sloping land.
12	Explosive Requirement	43.125 kg/day
13	Diesel/Fuel requirement	207 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
1 st Year	32300	87210	20200	1700	9130
2 nd Year	32775	88493	10900	1725	12625
3 rd Year	33345	90032	0	1755	1755
4 th Year	36670	99009	0	1930	1930
5 th Year	38380	103626	0	2020	2020
Total	173470	468369	31100	9130	40230

Land Use

Land Utilization	Existing Land use (Ha)	At the end of plan Period (Ha)	At Conceptual period (Ha)
Excavation	0.0	0.698	1.377 {0.208 Ha area shall be backfilled, 0.614 Ha converted in to water reservoir & 0.555 aHa shall be left as dead benches}
Waste Dump	0.0	0.291	Nil (comes under quarry)
Road	0.0	0.023	0.00
Infrastructure (Crusher)		0.141	
Safety Zone Plantation	0.0	0.865	0.865
Total	0.000	2.018	2.242
Unused Area	2.242	0.224	0.0
Total Lease Area		2.242	

ENVIRONMENT MANAGEMENT

Green Belt Development

Plantation				
Location	Area (Ha.) or Length (m)	No. of tree	Calculation	Timeline
Safety Zone	0.865	1384	1600 tree per hectare	1st Year
Approach Road	100	100	2m X 2m spacing	1st year
Dead Bench	0.555	888	1600 tree per	End of

		Feature	Mine
Backfilled area (level up to surface)	0.208	1600 tree per hectare	End of Mine
	333		
TOTAL		2705	
Species: Neem, Peepal, Arjun, Ashoka, Gu. mohar, Banyan, Bamboo - Bambas, Nutans, Tootlaa, Stratus & other Native Species			

- Sapling 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 3x2 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as felling, 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.

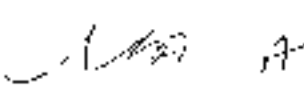
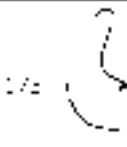
Environment Management Budget

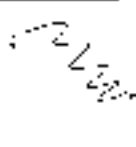
Budgetary Provision in Lakhs of Environment Management Plan (FME)		
Particulars	Capital	Recurring
Plantation of "1384" number of trees @Rs.200 per tree for plant & @Rs. 50 per tree for maintenance	415200.00	69200.00
Water supply for Horticulture "8304" KLD & Cost		
Suppression "8368" KLD (Annual Water Demand "51816" KLD @4.1 per tanker, total number of tankers required ("1248") and per tanker cost @Rs. 500)	0.00	648000.00
Garbed Drain & Desiltation Pond	224200.00	22420.00
Environmental Monitoring & Compliance	0.00	50000.00
Total	639400.00	789620.00

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.	1 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 stations	Six Monthly



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

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 40230cum in-situ waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 20115 cum (Insitu) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 20115 cum insitu 25143.75 cum loose & 21372.19 cum compact waste shall be used for dumping in northern part it will cover 0.291Ha.

Water Quality Management

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

Air Quality Management

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

Mitigation measures:

Use of Sharp Drill Bits

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

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

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

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

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

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

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

RISK ASSESSMENT

The hazard identification and risk analysis 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 1951)

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- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

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

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

Falls from the edge of a bench

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

Control Measures

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

Dust generation during drilling

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

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

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

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 operation is 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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- 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.

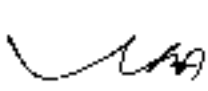
The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection 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

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Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipments 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 road 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 operation.
- Only trained drivers will be hired.

Organizational Structure:

Introduction

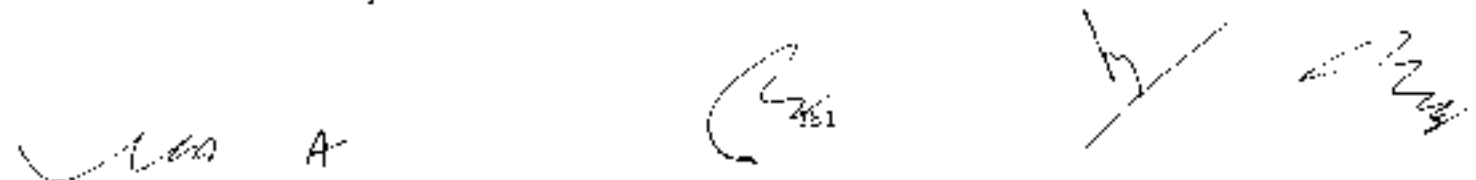
The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster 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

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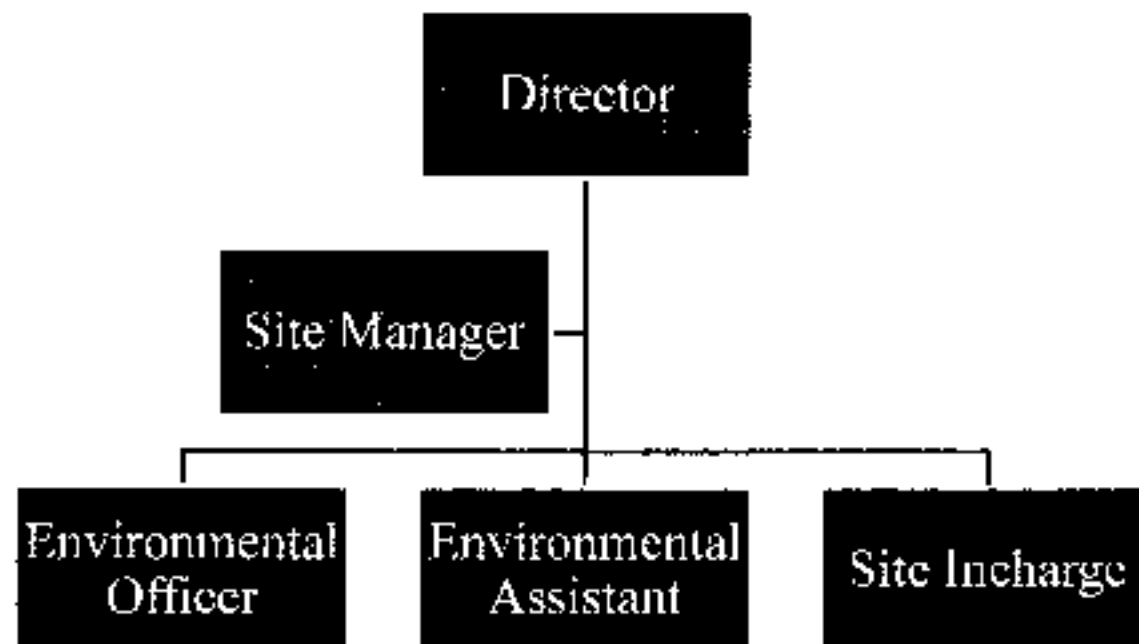
The EMP Cell objectives are:

- 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)

- Associate in development of EIA & EMP with consultants
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Arrange 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

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- 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

✓ EOP A

✓ 15.3

✓

✓

- 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 & comply to statutory compliance
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

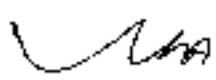
- Company Director
- Regulatory authorities

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.

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- 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 Bandarjori Stone Deposit of Shri Ravi Shankar Kumar, Village : Bandarjori, Anchal - Jarmundi, Distt. : Dumka, Jharkhand (2.242 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions.

- I. In compliance of O.M no. F.No. IAB 22/3/2014-A III (D-241554) dated 24.07.2014 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 "A Ped Mein Ka Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.mca.gov.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 PFT, Audiometry and other required tests. Summary findings of same to be 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. Telodih Stone Deposit of M/s Shiv Stone Works (Partners : Shri Shiv Shankar Saw & Shri Ashish Kumar Saw), Village : Telodih, Anchal : Deori, Distt. : Giridih, Jharkhand (1.428 Ha).

(Proposal no.: SIA/JH/MIN/ 541977 /2025)

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

This is a new project which has been taken for appraisal on 23.06.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity – 42014.70 Tonnes per year 15561 cum per year

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Telodih Stone Deposit
2	Lessee:	: M/ Shiv Stone Works, Partner -1. -Sri Shiv Shankar Saw & Sri Ashish Kumar Saw
3	Lessee Address	: Address : Barajori, P.O.: Khijarsota P.S.: Dhanwar, Jharkhand
4	Mine Lease Area	: 1.428 Ha. 3.53 Acre
5	Type of Land	: Non-Forest Riyatl Land
6	Project Cost	: Capital : Rs. 1908100 Recurring : Rs. 8416896.49 per year
7	EMP Budget	: Capital : Rs. 391200 Recurring : Rs. 506180 per year
8	New or Expansion	: New
9	Mineable Reserves	: 368898.30 Tonnes 136629 Cum
10	Mine Life	: 10 Years
11	Man power	: 15
12	Water Requirement	: 11.28 KLD
13	Water Source	: By authorised hired water tankers
14	DG Set / power	: -
15	Crusher	: No crusher
16	Nearest Water Body	: Usri River – 1 Km
17	Nearest Habitation	: Telodih Village – 1Km
18	Nearest Rail Station	: Duriatanr Railway Station (9 Km)
19	Nearest Air Port	: Deoghar Airport. i (103 Km)
20	Nearest Forest	: Divisional Forest Officer, Giridih certified that the distance of reserved / protected forest is more than 250 meter from

proposed project site

22 Road & Highways

SH - 13 Koderma - Jamsa Road about 8.5 Km

CO-ORDINATES

PILLAR ID	LATITUDE	LONGITUDE
P1	24°27'38.46254" N	86°09'45.57067" E
P2	24°27'39.40808" N	86°09'46.03147" E
P3	24°27'39.56276" N	86°09'45.10278" E
P4	24°27'39.90568" N	86°09'45.17107" E
P5	24°27'40.2037" N	86°09'45.29108" E
P6	24°27'40.28171" N	86°09'45.70235" E
P7	24°27'39.77986" N	86°09'49.82379" E
P8	24°27'39.59275" N	86°09'50.69970" E
P9	24°27'40.62807" N	86°09'51.34637" E
P10	24°27'40.70311" N	86°09'51.25311" E
P11	24°27'41.13778" N	86°09'51.43324" E
P12	24°27'41.09678" N	86°09'51.71947" E
P13	24°27'40.77267" N	86°09'51.83082" E
P14	24°27'40.53976" N	86°09'52.00007" E
P15	24°27'37.37621" N	86°09'52.06004" E
P16	24°27'37.52334" N	86°09'52.24846" E
P17	24°27'37.15805" N	86°09'52.44862" E
P18	24°27'38.56025" N	86°09'48.37218" E
P19	24°27'38.84927" N	86°09'48.73754" E
P20	24°27'38.01180" N	86°09'48.89366" E
P21	24°27'38.95547" N	86°09'48.79358" E
P22	24°27'38.10092" N	86°09'48.67456" E

LAND DETAILS

Khata no.	Plot no.
28	108 (P1 & 120 (P)
31	280 (P)

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STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Giridih vide letter no. 784/M, dated 12.08.2024.
2	CO	:	The CO, Deori, Giridih vide letter no. 204, dated 26.04.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in Khaliyan.
3	DMO Cluster	:	DMO, Giridih vide memo no. 440/M, dated 29.04.2025 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. 1301, dated 04.07.2023 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. 1781, dated 26.05.2023 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 (Page no. 79, Sl. no. 2).
7	Gram Sabha	:	Gram Sabha conducted on 12.06.2023.
8	Mine Plan Approval	:	Approved by The Assistant Director, Geology, District Geological Office, Koderma vide Letter No. 239, dated 21.12.2024.
9	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Semi-mechanized "OTFM" Method
2	Quarry Area	:	0.440 Ha. Life of Mine – 10 years
3	Waste Generation	:	20534.50 cum
4	Stripping Ratio	:	1:0.01
5	Working Days	:	300
6	Benchs: size & No	:	6m to 6m and 6 in numbers
7	Elevation of Mine	:	358 m AMSL to 354 m AMSL
8	Ground Level Elevation	:	354 m AMSL
9	Ultimate Working Depth	:	328 m AMSL

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10	Water Table	: 315 m AMSL
11	Topography of Mine	: Area represents gently sloping land
12	Explosive Requirement	: 20 kg/day
13	Diesel/Fuel requirement	: 96 litre/day

Production Details

Year	Production of Stone in cum	Production of Stone in Tonnes	Overburden in cum	Interminated waste in cum	Total Waste in cum
1 st Year	11172.33	30164.40	8540.00	588.00	9178.00
2 nd Year	12332.50	33216.75	6020.00	617.50	6667.50
3 rd Year	14133.00	36269.10	0.00	707.00	707.00
4 th Year	14497.00	39141.90	0.00	753.00	753.00
5 th Year	15561.00	42014.70	2452.33	813.00	3260.00
Total	66965.50	180806.85	17010.00	3524.50	70554.50

Land Use

Land Utilization	Existing Land use (Ha)	At the end of plan Period (Ha)	At Conceptual period (Ha)
Excavation	0.0	0.440	0.411 (0.124 Ha area shall be backfill, 0.460 Ha converted into water reservoir & 0.327 Ha shall be left as dead benches)
Waste Dump	00	0.777	Nil (comes under quarry)
Road	00	0.051	00
Infrastructure (Crusher)	00	0.00	00
Safety Zone	00	0.517	0.517
Plantation			
Total	00	1.235	1.438
Unused Area	1.428	0.193	0.00
Total Leave Area		1.428	

ENVIRONMENT MANAGEMENT

Green Belt Development

Location	Plantation			
	Area (Ha) or Length (m)	No. of tree	Calculation	Timeline
Safety Zone	0.517	328.00	1600 tree per hectare	1st Year
Approach Road	100	100	2m X 2m spacing	1st year
Dead Bench	0.327	523.33	1600 tree per hectare	End of Mine
Backfilled area (river)	0.124	199.00	1600 tree per hectare	End of Mine

upto surface)			
TOTAL	1651.00		
Species: Neem, Peepal, Arjun, Ashoka, Gulmohar, Banyan, Bamboo: - Bombas, Nutans, Toolda, Strictus & other Native Species			

- 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.

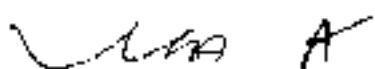
Environment Management Budget

Budgetary Provision (in Lakhs) of Environment Management Plan (EMP)		
Particulars	Capital	Recurring
Plantation of "828" number of trees @Rs.300 per tree for plant & @Rs. 50 per tree for maintenance	248400.00	41400.00
Water Facility for Horticulture "4.968" KLD & Dust Suppression "5.712" KLD (Annual Water Demand "3204"KL @4KL per Tanker, total number of tanker required ("801") and per tanker cost @Rs. 500)	0.00	400500.00
Garland Drain & Desiltation Pond	142800.00	14280.00
Environment Monitoring & Compliance	0.00	50000.00
Total	391200.00	506180.00

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.	3 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.	2 station	Six Monthly






	texture, water holding capacity, etc.		

Solid Waste Management

In the applied lease area, the stone deposit is covered with 3m 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 20524.50 cum in-situ 25566.13 cum loose & 21817.91 cum compact waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 10908.95 cum (loose) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 10908.95 cum waste shall be temporary dumped in western part of the area and it will cover 0.22 Ha area.

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. Decanted water will be allowed to flow into natural drainage.
- Gulland drain would be provided on lower contour around the quarry. Water collected in Gulland 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 Equipments – 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.

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

RISK ASSESSMENT

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

Hazard identification & Risk Analysis in Stone Mining operation

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

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

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

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

Preventive Measures:

Slope Failure

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

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

- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 126(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 hose 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.

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

Noise Generation during drilling

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

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

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

Blasting Operations

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

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during 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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- 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 rocks.

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, lighters, 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.

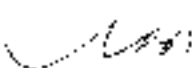
The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection 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.

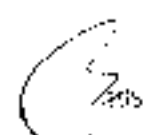
Accident at Site

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.

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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



- 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-Operations Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP & comply to statutory compliance
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
- a. 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.

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- 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 Telodih Stone Deposit of M/s Shiv Stone Works {Partners : Shri Shiv Shankar Saw & Shri Ashish Kumar Saw}, Village : Telodih, Anchal : Deorl, Distt. : Giridih, Jharkhand (1.428 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I 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 be 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. Mahadeodih Stone Deposit of M/s Johar Stone Works (Prop. : Shri Rakesh Kumar Singh),
Village : Mahadeodih, Anchal : Gandeey, Distt. : Giridih, Jharkhand (1.930 Ha).

{Proposal no.: SIA/JH/MIN/ 541922 /7025}

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

This is a new project which has been taken for appraisal on 23.05.2025

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity – 222026 MT per year or 82232 Cum per year

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Mahadeodih Stone Deposit
2	Tessee	M/s Johar Stone Works Proprietor : Shri Rakesh Kumar Singh
3	Tessee Address	Address : At Argaghat Road Rajput Mahalla, P.S - District : Giridih, Jharkhand
4	Mining Lease Area	1.930 Ha 4.77 Acre
5	Type of Land	Non Forest Rajpatti Land
6	Project Cost	Capital Rs. 1856900
7	EMP Budget	Capital Rs. 434800 Recurring Rs. 558100 per year
8	New or Expansion	New
9	Mineable Reserves	1075248 Tonnes
10	Mine Life	5 Years
11	Man power	28
12	Water Requirement	12.88 KLD
13	Water Source	By authorised hired water tankers
14	DG Set / tower	-
15	Crusher	No crusher
16	Nearest Water Body	Govt. River at a distance of 0.120 Km
17	Nearest Habitation	Mahadeodih Village
18	Nearest Rail Station	Giridih Railway Station at a distance of 7.00 Km
19	Nearest Air Port	Bogghar Airport at a distance of 84 Km
20	Nearest Forest	Divisional Forest Officer, Giridih certified that the distance of reserved / protected forest is more than 250 meter from

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		proposed project site.
21	Road & Highways	SH-13- Govindpur- Giridih Road at about 4Km on western side.

CO-ORDINATES

PILLAR ID	LATITUDE	LONGITUDE	PILLAR ID	LATITUDE	LONGITUDE
P1	24°09'24.67411" N	86°22'43.30744" E	21	24°09'22.57679" N	86°22'53.04432" E
P2	24°09'24.69287" N	86°22'43.48052" E	22	24°09'22.16070" N	86°22'53.73638" E
P3	24°09'24.52338" N	86°22'44.10484" E	23	24°09'21.23305" N	86°22'52.21546" E
P4	24°09'24.42686" N	86°22'44.70301" E	24	24°09'20.56363" N	86°22'50.99491" E
P5	24°09'24.10812" N	86°22'44.58968" E	25	24°09'20.88475" N	86°22'50.41585" E
P6	24°09'24.08252" N	86°22'44.64606" E	26	24°09'21.22859" N	86°22'49.50473" E
P7	24°09'24.15690" N	86°22'44.95512" E	27	24°09'21.33356" N	86°22'49.00285" E
P8	24°09'23.89327" N	86°22'45.70878" E	28	24°09'21.46090" N	86°22'47.91540" E
P9	24°09'23.70078" N	86°22'46.49963" E	29	24°09'21.56569" N	86°22'46.60979" E
P10	24°09'23.73898" N	86°22'46.89559" E	30	24°09'21.24126" N	86°22'46.37136" E
P11	24°09'24.00566" N	86°22'46.89808" E	31	24°09'21.53354" N	86°22'45.90530" E
P12	24°09'24.18224" N	86°22'47.48178" E	32	24°09'21.54265" N	86°22'46.02112" E
P13	24°09'24.32218" N	86°22'48.06941" E	33	24°09'21.73968" N	86°22'46.24144" E
P14	24°09'24.34709" N	86°22'48.35291" E	34	24°09'22.48438" N	86°22'45.50606" E
P15	24°09'24.23750" N	86°22'49.22868" E	35	24°09'22.60739" N	86°22'45.30014" E
P16	24°09'24.54041" N	86°22'50.23992" E	36	24°09'22.59054" N	86°22'44.32980" E
P17	24°09'24.35209" N	86°22'50.46442" E	37	24°09'22.47880" N	86°22'44.13626" E
P18	24°09'24.23970" N	86°22'50.34018" E	38	24°09'23.08626" N	86°22'43.90694" E
P19	24°09'23.89874" N	86°22'50.23373" E	39	24°09'23.88823" N	86°22'43.60415" E
P20	24°09'23.06639" N	86°22'51.97170" E			

LAND DETAILS

Khata no.	Plot no.
03	341
06	351 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	The Letter of Intent (LoI) has been issued by District Mining Officer, Giridih vide letter no. 511/M, dated 26.05.2025.
2	CO	The CO, Gandey, Giridih vide letter no. 265, dated 14.05.2025 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in Khatyan. During the appraisal it was seen that Usri River is situated at distance of 200 meters approx. For which detailed Environmental Management Plan has been prepared and submitted outlined mitigation measures to prevent any impact on

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1		Joni River due to mining activities and based on ZLD (Zero Liquid Discharge).
3	DMO Cluster	DMO, Giridih vide memo no. 603/M, dated 17.06.2025 certified that 01 other mining lease area 13.00 Acre exists within 500 meters radius from proposed project site and total area is 7.77 Acre.
4	DFO Wild Life	DFO, Wildlife Division, Hazaribag vide letter no. 308, dated 15.05.2025 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. 1324, dated 19.05.2025 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 (Page no. 71, Sl. no. 149).
7	Gram Sabha	EDO, Garhway, Giridih vide letter no. 1455, dated 13.05.2025 informed that Gram Sabha conducted on 12.05.2025.
8	Mine Plan Approval	Approved by The Assistant Director, Geology, District Geological Office, Bokaro vide memo no. 125, dated 16.06.2025.
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	1.489 Ha	Life of Mine - 5 years
3	Waste Generation	52560 cum	
4	Stripping Ratio	1:0.05	
5	Working Days	300	
6	Bench size & No	6 m to 6 m and 8 m numbers	
7	Elevation of Mine	294 m AMSL to 287 m AMSL	
8	Ground Level Elevation	287 m AMSL	
9	Ultimate Working Depth	245 m AMSL	
10	Water Table	230 m AMSL	
11	Topography of Mine	Area represents gently sloping and	
12	Explosive	93 kg/day	

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	Requirement	
13	Diesel/Fuel requirement	444 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
1 st Year	78052	210740	18720	4108	22828
2 nd Year	78584	212177	0	4136	4136
3 rd Year	79116	213613	1920	4164	6084
4 th Year	80256	216691	10960	4224	15184
5 th Year	82232	222026	0	4328	4328
Total	398240	1075248	31600	20960	52560

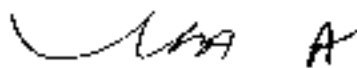
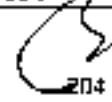
Land Use

Land Utilization	Existing Land use (Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)
Excavation	0.0	1.489 (0.117 Ha area shall be backfilled, 1.173 Ha converted in to water reservoir & 0.199 Ha shall be left as dead benches)	1.489 (0.117 Ha area shall be backfilled, 1.173 Ha converted in to water reservoir & 0.199 Ha shall be left as dead benches)
Waste Dump	0.0	Nil (0.333 Ha waste dump to be removed and backfilled)	Nil (0.333 Ha comes under quarry)
Safety Zone Plantation	0.0	0.441	0.441
Total	0.0	1.930	1.930
Unused Area	1.930	0.00	0.00
Total lease Area		1.930	

ENVIRONMENT MANAGEMENT

Green Belt Development

Location	Plantation			
	Area (Ha.) or Length (m)	No. of tree	Calculation	Timeline
Safety Zone	0.441	706.00	1600 tree per hectare	1st Year
Approach Road	100	100	2m X 2m spacing	1st year
Dead Bench	0.199	319.00	1600 tree per	End of Mine



Backfilled area (level upto surface)	1	1600 tree per hectare	1600	End of Mine
TOTAL	0.117	188.00	188.00	
Species: Neem, Peepal, Argun, Ashoka, Gulmohar, Banwan, Bambusa - Bambas, Nutans, Tegiaa, Strictus & other Native Species				

- 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 PUCI. Development Department of Forest, Environment & Climate Change Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

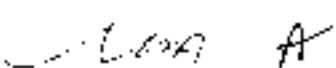
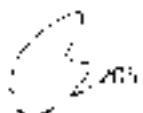
Environment Management Budget

Budgetary Provision in Lakhs of Environment Management Plan (LMP)		
Particulars	Capital	Recurring
Plantation of "806" number of trees @Rs 300 per tree for plant & @Rs 50 per tree for maintenance	241800.00	40300.00
Water Facility for Horticulture "4.236" KLD & Dust Suppression "7.77" KLD (Annual Water Demand "3586.8" KL @4KL per Tanker, total number of tankers required ("897") and per tanker cost @Rs 500)	0.00	448500.00
Garland Drain & Desiltation Pond	193000.00	19300.00
Environment Monitoring & Compliance	0.00	50000.00
Total	434800.00	558100.00

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	5 x 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

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 52560 cum in-situ 65700 cum loose & 55845 cum compact waste shall be generated during this plan period. From first to third year the generated waste shall be dumped in western part and during fourth & fifth year the generated waste and waste materials of past dumping shall be removed and used for backfilling of exhausted part of quarry in northern part and it will cover 0.117ha.

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.

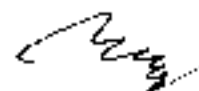
Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

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

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

- Regular water sprinkling on Gaul road by using water tankers.
- Regular repair of Gaul 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 Fitting 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 Low risk.

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

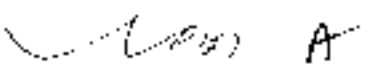
Low-Risk Rank and hence the risk is "Acceptable"

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.

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- 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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- 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 conger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/shooting 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



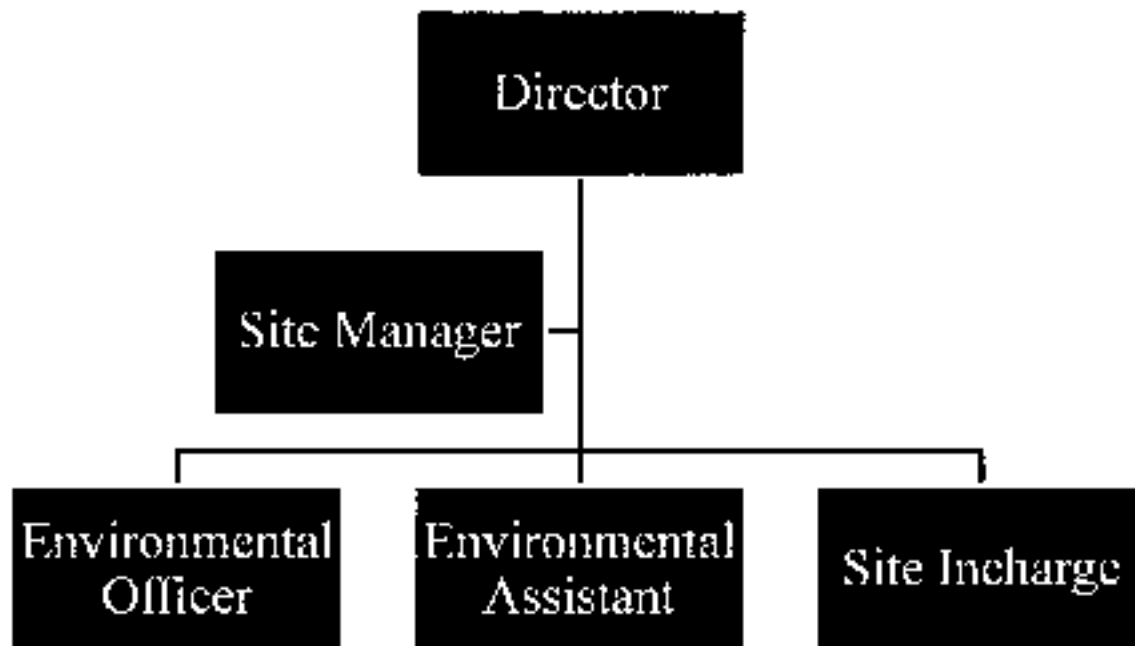
The EMP Cell objectives are:

- 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)

- Associate in development of EIA & EMP with consultants
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Arrange 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

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- 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

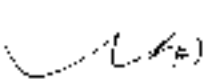
Key decision points include:

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

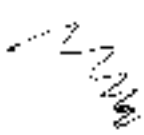
Documentation

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 & comply to statutory compliance
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.

2. 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.
3. 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 Mahadeodih Stone Deposit of M/s Johar Stone Works (Prop. : Shri Rakesh Kumar Singh), Village : Mahadeodih, Atnal : Gandey, Distt. : Giridih, Jharkhand (1.930 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. In compliance of OM no. F.No. A3-22/3/2024-IA.III (E-2411594) 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 Hekdo Ke Wagon" and the details of the same shall be uploaded in the Meritix Portal (<https://meritix.mining>). 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 and 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 on y.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 PPEF, Audiometry and other required tests. Summary findings of same to be submitted along with a 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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15. Chandradipa Stone Mine of Shri Sanjit Hembram, Village : Chandradipa, Anchal : Jamtara, Distt. : Jamtara, Jharkhand (0.931 Ha).

(Proposal no.: SIA/JH/MIN/ 537853 /2025)

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

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

The project has been granted EC by DEIAA, Jamtara vide letter no. 47/DFIAA, dated 26.11.2016.

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, Deohgar which has been taken up for consideration on 23.06.2025. 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 $\mu\text{g}/\text{m}^3$ PM_{2.5} -567 $\mu\text{g}/\text{m}^3$ SO₂ -18.2 NO₂ - 19.0 $\mu\text{g}/\text{m}^3$ 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. 600/M, dated 22.08.2024 by DMO, Jamtara is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide memo no. 2245, dated 03.12.2024.

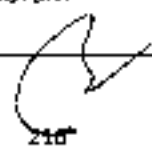
The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate regarding status of execution of compliance as no details have been provided. Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.

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

EC Application for: Proposed Capacity – 35500 Tonnes / Year or 119.07 Tonnes per day
Project and Location Details.

Sl	Parameter	Details
1	Project Name	Chandradipa Stone Mine
2	Lessee:	M/s Sanjit Hembram




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	Partner - 1. Shri Sanjay Hembram and 2. Shri Amrendra Tiwari
3	Lessee Address : At Station Road, P.S – Mihijani, District – Jamtara, Jharkhand
4	Mine Lease Area : 0.931 Ha Acres 2.30 Acre
5	Type of Land : Non-Forest Baiyali Land
6	Project Cost : Capital Rs 1518700
7	EMP Budget : Capital Rs 294720 Recurring: 383910 per year
8	New or Expansion : Re-appraisal of DFIAA EC
9	Mineable Reserves : Tonnes: 175446 tonnes
10	Mine life : Up to the lease period i.e. 18.08.2017 to 17.08.2027
11	Man power : 20
12	Water Requirement : 8.56 KLD
13	Water Source : By authorised hired water tankers
14	DB Set / power : 20KVA
15	Crusher : No crusher
16	Nearest Water Body : Ajay River at a distance of 4.5 km in East direction
17	Nearest habitation : Chandradipa Village at a distance of 600 meters in North direction
18	Nearest Rail Station : Jamtara Railway Station at a distance of 6.93 Km in North West direction
19	Nearest Air Port : Birsa Munda Airport, Ranchi at a distance of 165.26 Km in South-West direction.
20	Nearest Forest : Divisional Forest Officer, Jamtara certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
21	Road & Highways : NH-33 at a distance of 3.0 km in North-East direction

CO-ORDINATES

Latitude	23°53'55.80" N to 23°54'0.10" N
Longitude	86°49'37.30" E to 86°49'42.70" E

LAND DETAILS

Khata no.	Plot no.
107	675 (P) & 569 (F)

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STATUTORY CLEARANCES

1	LOI / Lease docs	: Lease deed : 18.08.2017 to 17.08.2027.
2	CO	: The CO, Jamtara vide letter no. 456/Ra, dated 05.05.2025 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyar.
3	DMO Cluster	: DMO, Jamtara vide memo no. 281/M, dated 08.05.2025 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. 2379, dated 28.11.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	: Divisional Forest Officer, Jamtara Forest Division vide letter no. 280, dated 21.02.2016 certified that the distance of forest land is more than 250 meter from proposed project boundary.
6	DSR	: This project is mentioned in approved DSR of Jamtara District (Sl. no. 11, Page no. 103).
7	Gram Sabha	: Gram Sabha conducted on 06.04.2016.
8	Scheme / Mine Plan Approval	: Mining scheme approved by Additional Director, Geology, Hazaribag vide Letter No. G/2022-23-303, dated 17.10.2022.
9	Previous Environmental Clearance (EC)	: Previous EC granted by DEIAA, Jamtara vide letter no. 47/DEIAA, dated 26.11.2016.
10	Compliance report of EC	: The compliance report of previous EC has been issued by JSPCB, Regional Office, Dumka vide memo no. 2245, dated 03.12.2024.
11	Consent to Establish (CTE)	: CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2045500 /2018 /212, dated 20.02.2018.
12	Consent to Operate (CTO)	: CTO issued by JSPCB vide ref. no. : JSPCB/RO/DMK/CTO-16258188 /2023/113, dated 15.06.2023 valid up to 27.04.2024.
13	Production Report	: Production report issued by DMO, Jamtara vide letter no. 600/M, dated 22.08.2024.
14	Qualified Person	: Shri A.K. Sinha vide letter dated 23.06.2025 affirmed that the mining scheme has been prepared by him.

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Working Details

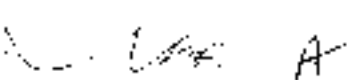
1	Mining Method	Opencast other than fully mechanized (OTFM) Method
2	Quarry Area	0.931 Ha
		Life of Mine - Up to the close period i.e. 18.08.2017 to 17.08.2027
3	Waste Generation	2465 cum
4	Stripping Ratio	1:0.03
5	Working Days	: 200
6	Bench size & No	6m to 6m and 3 in numbers
7	Elevation of Mine	: 256 m AMSL to 252 m AMSL
8	Ground Level	: 252 m AMSL
9	Elevation Ultimate Working Depth	: 237 m AMSL
10	Water Table	230 meter below the ground level
11	Topography of Mine	Area represents gently sloping land
12	Explosive Requirement	9 kg/day
13	Diesel/Fuel requirement	43 litre/day

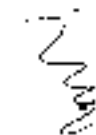
Production Details

Year	Production in CUM/year	Production in CUM/Day	Over Burden Production in CUM/Year	Production in Tons/Year	Production in Tons/Day
6 th	13002	43	2465	35102	117.0
7 th	13148	44	0	35500	118.33
8 th	12968	43	0	35312	116.73
9 th	12565	42	0	33035	113.12
10 th	12782	43	0	34512	115.04
Total	64467	43	2465	174061	115.04

Land Use

Pattern of Utilization	Land used in existing Plan period (Ha)	Land for Balance Period/Review period (Ha)	Total Land used at the end of the Mine (Ha)	Status of land at the end of life of the Mine
Mining Activities	0.461	0.461	0.461	Water Reservoir
Office/Store/Intra etc.	0.01	0.01	0.01	Green Belt
Dumping	0.03	0.03	0.03	Green Belt



Road	0.01	0.01	0.01	Green Belt
Garland Drain	0.00	0.00	0.00	Green Belt
Green Belt/Safety Zone	0.42	0.42	0.42	Green Belt
Stone Stock Yards	0.00	0.00	0.00	-
Unutilized	0.00	0.00	0.00	-
Total	0.931			

ENVIRONMENT MANAGEMENT

Green Belt Development

Plantation				
Location	Area (Ha.) or Length (m)	No. of tree	Calculation	Timeline
Safety Zone	0.420	672	1600 tree per hectare	1st Year
Approach Road	100	100	2m X 2m spacing	1st year
TOTAL		772		
Species: Neem, Peepal, Arjun, Ashoka, Gulmohar, Banyan, Bamboo: - Bombas, Nutans, Toolda, Strictus & other Native Species				

- 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 (EMP)

Budgetary Provision (in Lakhs) of Environment Management Plan (EMP)		
Particulars	Capital	Recurring
Plantation of "672" number of trees @Rs.300 per tree for plant & @Rs. 50 per tree for maintenance	201600.00	33600.00
Water Facility for Horticulture "4.032" KLD & Dust Suppression "3.724" KLD (Annual Water Demand "2326.8"KL @4KL per Tanker, total number of tankers required ("582") and per tanker cost @Rs. 500)	0.00	291000.00
Garland Drain & Desiltation Pond	93100.00	9310.00
Environment Monitoring & Compliance	0.00	50000.00
Total	294700.00	383910.00

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

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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	3 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 (2465 m³) 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 effort would be mitigated by following measures

✓ *Sharma* A *3/11* *11/11* *2/11/11*

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

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

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

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

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

RISK ASSESSMENT

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

Hazard identification & Risk Analysis in Stone Mining operation

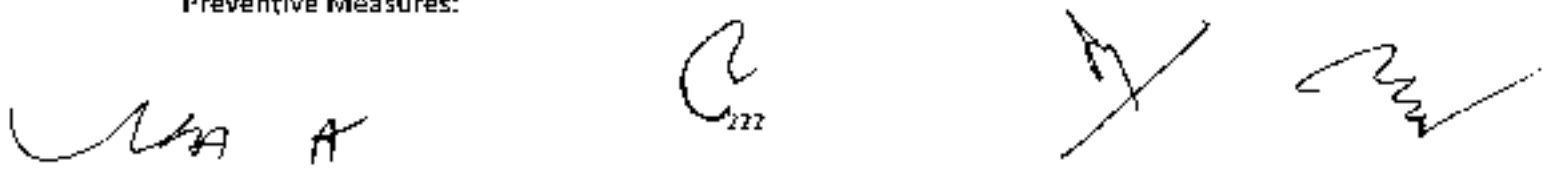
S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	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 1963)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1963)

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

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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.
- 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.

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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

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3/2/25

17/2/25

24/2/25

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



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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

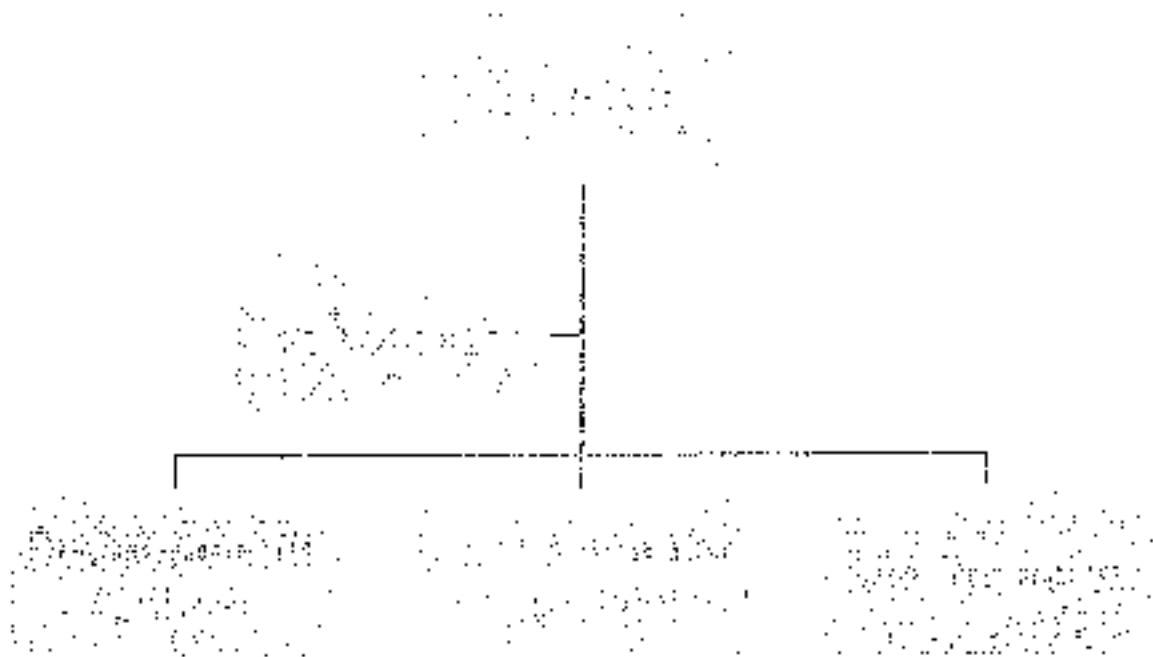
The EMP Cell objectives are

- 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

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Environmental Officer (EO)

- Associate in development of EIA & EMP with consultants
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Arrange 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

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The EMP process now 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 & comply to statutory compliance
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

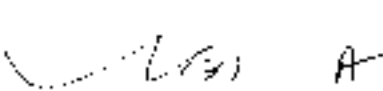
- Company Director
- Regulatory authorities

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 Chandradipa Stone Mine of Shri Sanjit Hembram, Village : Chandradipa, Anchal : Jamtara, Distt. : Jamtara, Jharkhand (0.931 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I 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.nlc.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 be submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted 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.

16. **Paharpur Stone Block of M/s Ravi Shankar Kumar (Prop. : Shri Ravi Shankar Kumar), Village : Paharpur, Tehsil - Dumri, Distt. : Giridih, Jharkhand (6.475 Ha).**

(Proposal no.: SIA/JH/MIN/ 541511 /2025)

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

This is a new project which has been taken for appraisal on 23.06.2025.

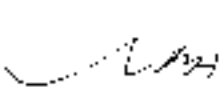
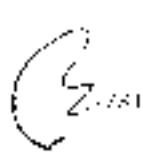
Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA Notification, 2006.

EC Application for: Proposed Capacity-221971 Cum/year or 599322 Tonnes /year

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Paharpur Stone Block
2	Lessee:	M/s Ravi Shankar Kumar Proprietor - Sh. Ravi Shankar Kumar

3	Lessee Address	: Address: At - House No. 298, Ward No. 4, Near Singh Barwell, Williams Town, SriKrishnapuri, Deoghar, District - Deoghar, Pin Code - 814112, State - Jharkhand
4	Mine Lease Area	: 6.475 Ha. 16.00 Acre
5	Type of Land	: Non-Forest Raiyat Land
6	Project Cost	: Capital: Rs. 2896700
7	EMP Budget	: Capital: Rs. 1011400 Recurring: Rs. 1419900 per year
8	New or Expansion	: New
9	Mineable Reserves	: 5992560 Tonnes 2219467 Cum
10	Mine Life	: 10 Years
11	Man power	: 65
12	Water Requirement	: 35.78 KLD
13	Water Source	: By authorised hired water tankers
14	DG Set / power	: -
15	Crusher	: No crusher
16	Nearest Water Body	: Jamunia river at a distance of 3.28 km in South direction flowing from North-West to South-East direction.
17	Nearest Habitation	: Bhiknadih Railway Station at a distance of 1 km in North direction.
18	Nearest Rail Station	: Nimiaghata railway station at a distance of 2.55 Km in South-West direction.
19	Nearest Air Port	: Birsa Munda Airport, Ranchi at a distance of 103.15 km in South-West direction.
20	Nearest Forest	: Divisional Forest Officer, Giridih certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
21	Road & Highways	: NH-19 is about 2.00 km in North direction.

CO-ORDINATES

Pillar No	Latitude	Longitude	Pillar No	Latitude	Longitude
P1	23°55'23.02900" N	86°06'00.51066" E	P21	23°55'14.64416" N	86°05'54.66368" E
P2	23°55'22.71727" N	86°06'00.90119" E	P22	23°55'16.24897" N	86°05'53.70734" E
P3	23°55'22.72094" N	86°06'01.52816" E	P23	23°55'17.17673" N	86°05'53.48566" E
P4	23°55'22.36422" N	86°06'02.31206" E	P24	23°55'17.64358" N	86°05'53.87546" E

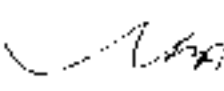
P5	23°55'22.19585" N	86°06'02.70073" E	P25	23°55'18.01458" N	86°05'53.89163" E
P6	23°55'22.07262" N	86°06'02.45916" E	P26	23°55'19.24756" N	86°05'54.93815" E
P7	23°55'21.93038" N	86°06'02.41333" E	P27	23°55'19.61108" N	86°05'54.91952" E
P8	23°55'21.62759" N	86°06'02.85537" E	P28	23°55'19.69871" N	86°05'55.19009" E
P9	23°55'21.13118" N	86°06'04.02851" E	P29	23°55'19.99268" N	86°05'55.44547" E
P10	23°55'20.41151" N	86°06'04.06880" E	P30	23°55'19.99428" N	86°05'55.73083" E
P11	23°55'17.77177" N	86°06'04.15375" E	P31	23°55'20.27863" N	86°05'55.79437" E
P12	23°55'19.85391" N	86°06'02.21238" E	P32	23°55'20.17247" N	86°05'56.02906" E
P13	23°55'14.77700" N	86°05'03.24241" E	P33	23°55'20.61937" N	86°05'56.09041" E
P14	23°55'13.39597" N	86°05'01.28200" E	P34	23°55'20.47429" N	86°05'56.88794" E
P15	23°55'13.36969" N	86°06'00.31741" E	P35	23°55'21.28707" N	86°05'53.50578" E
P16	23°55'13.62222" N	86°05'59.74336" E	P36	23°55'21.76456" N	86°05'53.04992" E
P17	23°55'13.25273" N	86°05'59.15033" E	P37	23°55'21.90821" N	86°05'53.35798" E
P18	23°55'13.46606" N	86°05'57.97345" E	P38	23°55'22.46120" N	86°05'53.77579" E
P19	23°55'13.19732" N	86°05'57.91542" E	P39	23°55'22.73689" N	86°05'59.84354" E
P20	23°55'13.58283" N	86°05'56.76727" E			

LAND DETAILS

Khata no. Plot no.
01 152 (P)

STATUTORY CLEARANCES

1. LCI / Lease docs The Letter of Intent (LoI) has been issued by Director of Mines Deptt. of Mines & Geology, Govt. of Jharkhand vide letter no. Kha. M (Nihm) 01/2022 / 709, dated 27.02.2022.
2. CO The CO, Dumri, Giridih vide letter no. 713, dated 12.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle Jhar." in Khatriyan.

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3	DMD Cluster	:	DMD, Giridih vide memo no. 466/M, dated 05.05.2025 certified that 03 other mining lease area (4.3483 Acre, 5.47 Acre & 4.6332 Acre) exists within 500 meters radius from proposed project site and total area is 30.4515 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 2229, dated 26.09.2023 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. 3428, 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 Giridih District (Page no. 88, Sl. no. 25).
7	Gram Sabha	:	Gram Sabha conducted on 26.09.2023.
8	Mine Plan Approval	:	Approved by The Assistant Director, Geology, District Geological Office, Bokaro vide memo no. 101, dated 06.05.2025.
9	Qualified Person	:	Shri Sahadev Singh vide e-mail dated 23.06.2025 affirmed that the mining plan has been prepared by him.

Working Details

1	Mining Method	:	Semi-mechanized "OTFM" Method
2	Quarry Area	:	5.717 Ha. Life of Mine – 10years
3	Waste Generation	:	58411 cum
4	Stripping Ratio	:	1:0.02
5	Working Days	:	300
6	Bench: size & No	:	6m to 6m and 10 in numbers
7	Elevation of Mine	:	300 m AMSL to 261m AMSL
8	Ground Level Elevation	:	261m AMSL
9	Ultimate Working Depth	:	213m AMSL
10	Water Table	:	206m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	250 kg/day
13	Diesel/Fuel requirement	:	1199 litre/day






Production Details

Year	Intercalated Waste	Production of Stone	
	in cum	in cum	in tonnes
1 st	11681	221946	599255
2 nd	11682	221949	599262
3 rd	11683	221971	599377
4 th	11682	221949	599261
5 th	11683	221971	599377
Total	58411	1109786	2996420

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 For od (in Ha)		
				Public use	Water Body	Plantation
Quarry	2.090 (with water logged)	0.717 (Including dumped)	0.717 (Including backfill)	---	4.498	1.219 (Dead bench plantation)
Greenbelt within Safety Barrier	Nil	0.758	0.758	---	-	0.758
Road	0.046	Nil	Nil	---	---	---
Total Area in Use	2.136	6.475	6.475	---	4.498	1.977
Balanced Area unused	4.349	Nil	Nil	---	---	---
Total Applied Area	6.475	6.475	6.475	---	4.498	---

ENVIRONMENT MANAGEMENT

Green Belt Development

Location	Plantation		Calculation	Timeline
	Area (Ha.) or Length (m)	No. of tree		
Safety Zone	0.758	213	1 hectare	1st Year
Approach Road	100	100	2m X 2m spacing	1st year
Dead Bench	1.219	1951	1600 tree per	End of

235

17

235

Backfilled area (level upto surface)	0.000	0	hectare 1600 tree per hectare	Mine End of Mine
TOTAL		3264		
Species: Neem, Peepal, Arjun, Ashoka, Gulmohar, Banyan, Bamboo: - Bombas, Nutans, Ioolda, Strictus& other Native Species				

- 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 PCCE, 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 (in Lakhs) of Environment Management Plan (EMP)		
Particulars	Capital	Recurring
Plantation of "1213" number of trees @Rs.300 per tree for plant & @Rs. 50 per tree for maintenance	363900.00	60650.00
Water Facility for Horticulture "18.9804" KLD & Dust Suppression "25.9" KLD (Annual Water Demand "13464.12"KL @4KL per Tanker, total number of tanker required ("3367") and per tanker cost @Rs. 500)	0.00	1683500.00
Garland Drain & Desiltation Pond	647500.00	64750.00
Environment Monitoring & Compliance	0.00	50000.00
Total	1011400.00	1858900.00

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.	3 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,	2 station	Six Monthly

	texture, water holding capacity, etc.		

Solid Waste Management

During quarry development in 1st year intercalated waste will be removed and this waste will be temporarily dumped [Area = 0.222 Ha, (L x W x H = 52m x 44m x 5m)] within the quarry & in 2nd year intercalated waste will be removed and this waste & existing temporary dumped materials will be temporarily dumped [Area = 0.467 Ha, (L x W x H = 72m x 67m x 5m)] within the quarry & in 3rd year intercalated waste will be removed and this waste & existing temporary dumped materials will be temporarily dumped [Area = 0.700 Ha, (L x W x H = 83m x 83m x 5m)] within the quarry & in 4th year intercalated waste will be removed and this waste & existing temporary dumped materials will be temporarily dumped [Area = 0.934 Ha, (L x W x H = 97m x 96m x 5m)] within the quarry & in 5th year intercalated waste will be removed and this waste & existing temporary dumped materials will be temporarily dumped [Area = 1.168 Ha, (L x W x H = 119m x 98m x 5m)] within the quarry. In conceptual period total removal intercalated waste & plan period existing temporary dumped materials will be backfill within 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. Deslanted water will be allowed to flow into natural drainage.
- Gariand drain would be provided on upper contour around the quarry. Water collected in Gariand 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 deslating.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

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

Mitigation measures:

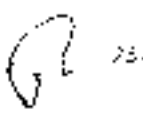
Use of Sharp Drill Bits

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

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

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







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

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

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

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

RISK ASSESSMENT

The hazard identification and risk analysis 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

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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 105(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

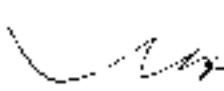
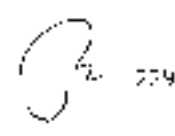
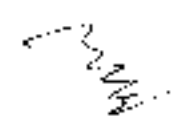
While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to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

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- 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.

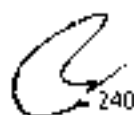
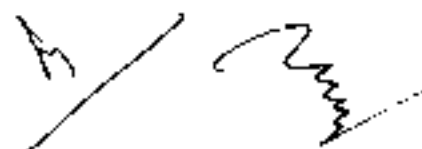
The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

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 DGM/S 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 is di 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 SI 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

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- 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.

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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

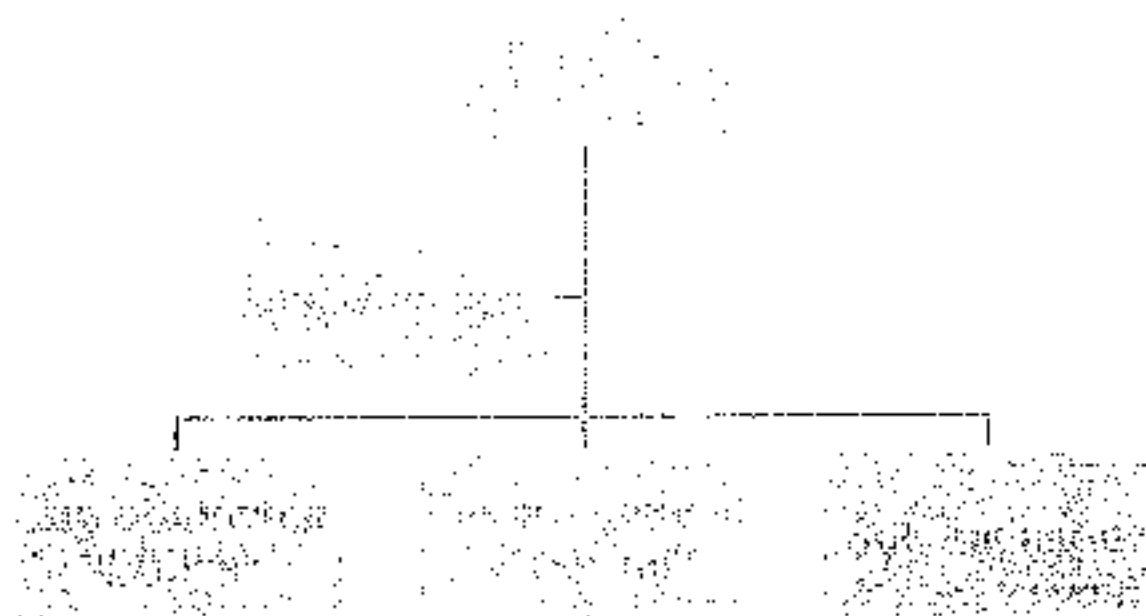
The EMP Cell objectives are:

- 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)

- Associate in development of EIA & EMP with consultants
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Arrange environmental training
- Manage environmental data collection
- Develop environmental policies

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- 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 & comply to statutory compliance
3. Closure and Rehabilitation Phase (6 months): Restore mined land

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.

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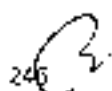
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- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report 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 gablon plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.06.2025, 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 II alongwith following specific condition :-

- I. In compliance of OM no. F.No. IA3-22/3/2024-IA.II (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 Mo 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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- A. Joint secretary, Deptt. of Forest, Environment & Climate Change, Govt. of Jharkhand
letter no. 1460, dated 28.04.2025.

As decided in the last meeting of SEAC, a letter no. 10, dated 17.06.2025 from the Member Secretary, SLAC was sent to complainant Shri. Kanhaiya Kumar Singh to be present in the meeting of SEAC on 24.06.2025. As he did not turn up on the requested date, the matter could not be taken up for discussion.

Hence, it will be taken up in the next meeting of SEAC.

B. Consideration of proposals :

1. Sikri Stone Mine of M/s Jai Mata Di Stone Works {Partners : Shri Vishwas Bharadwaj & Shri Aniteshanand Manav}, Village : Sikri, Thana : Simaria, Distt. : Chatra, Jharkhand (1.618 Ha).
{Proposal no.: SIA/JH/MIN/ 518710 /2025}

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.06.2025.

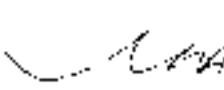
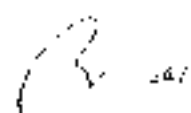
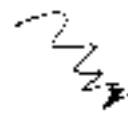
Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 19794 Cum. (Max.) /Tons 53444 (Max.) per year.

Project and Location Details:

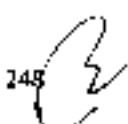
Sl	Parameter	Details
1	Project Name	Sikri Stone Mine M/S JAI MATA DI STONE WORKS
2	Lessee	(1) Shri Vishwas Bharadwaj (2) Shri Aniteshanand Manav
3	Lease Address	Village: Sikri, Thana: Simaria, District: Chatra, Jharkhand

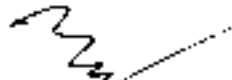
    

4	Mine Lease Area	:	1.618 Ha
5	Type of Land	:	Non-Forest Raiyati Land
6	Project Cost	:	Capital Cost: Rs.144.54 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 11.668 Lakhs Recurring Cost: Rs. 6.099Lakhs
8	New or Expansion	:	New
9	Mineable Reserves	:	80315 cum 216850 tons
10	Mine Life	:	5 years
11	Man power	:	21 Person
12	Water Requirement	:	8.96KLD (Drinking: 0.315 KLD, Dust Suppression: 1.83 KLD, Plantation: 6.81 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	60 KVA D.G. Set proposed
15	Crusher	:	No crusher
16	Nearest Water Body	:	Lilajan River – 1.182 km – East direction.
17	Nearest Habitation	:	Sikri 0.83 km at NE direction
18	Nearest Rail Station	:	Ranchi Railway Station is at aerial distance of 86.5 km SE direction
19	Nearest Air Port	:	Birsa Munda Airport (Ranchi) is at aerial distance of 89 km SE direction.
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer NOC, letter no.- 211 Dated- 31/01/2024
21	Road & Highways	:	A well motorable road is connected to the Mine Site at a distance of 458m SE direction. NH 22 Road is at aerial distance of 6.48Km West Direction.
22	Approach Road	:	Distance of Approach Road: 458 m

CO-ORDINATES

Point Name	Latitude	Longitude
1	24° 04' 08.61269370" N	085° 00' 12.76570633" E
2	24° 04' 08.74237898" N	085° 00' 11.92529415" E
3	24° 04' 08.81634205" N	085° 00' 11.16773013" E
4	24° 04' 08.35657141" N	085° 00' 10.89585832" E
5	24° 04' 07.89680030" N	085° 00' 10.62948651" E



6	24° 04' 07.85265559" N	085° 00' 10.36539528" E
7	24° 04' 07.87939068" N	085° 00' 10.35381024" E
8	24° 04' 07.87832890" N	085° 00' 09.65264617" E
9	24° 04' 07.94427926" N	085° 00' 08.70773585" E
10	24° 04' 08.01360393" N	085° 00' 07.71447956" E
11	24° 04' 08.07855422" N	085° 00' 06.78389764" E
12	24° 04' 08.13897146" N	085° 00' 05.91826316" E
13	24° 04' 08.21705758" N	085° 00' 05.00687469" E
14	24° 04' 08.32637812" N	085° 00' 04.06529144" E
15	24° 04' 08.64913395" N	085° 00' 03.99687403" E
16	24° 04' 09.21135297" N	085° 00' 03.96836677" E
17	24° 04' 09.34149619" N	085° 00' 03.45523614" E
18	24° 04' 09.58095962" N	085° 00' 02.94780695" E
19	24° 04' 09.79960007" N	085° 00' 02.96491132" E
20	24° 04' 09.97659456" N	085° 00' 02.81667358" E
21	24° 04' 09.47684509" N	085° 00' 02.67983875" E
22	24° 04' 08.70639694" N	085° 00' 02.36625892" E
23	24° 04' 08.42049289" N	085° 00' 01.87023264" E
24	24° 04' 08.88339190" N	085° 00' 01.45972824" E
25	24° 04' 08.62310517" N	085° 00' 00.83826993" E
26	24° 04' 09.28777557" N	085° 00' 00.73484560" E
27	24° 04' 09.94244503" N	085° 00' 00.63143127" E
28	24° 04' 09.78583691" N	085° 00' 01.15686704" E
29	24° 04' 10.49933218" N	085° 00' 01.47797278" E
30	24° 04' 10.40554575" N	085° 00' 01.62487675" E
31	24° 04' 10.52548544" N	085° 00' 01.76258924" E

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32	24° 04' 10.55547035" N	085° 00' 02.01801426" E
33	24° 04' 10.46384977" N	085° 00' 02.49602395" E
34	24° 04' 10.37222917" N	085° 00' 02.97403364" E
35	24° 04' 10.57879195" N	085° 00' 02.98133150" E
36	24° 04' 10.48217389" N	085° 00' 03.67097906" E
37	24° 04' 10.38555581" N	085° 00' 04.36062663" E
38	24° 04' 10.76894775" N	085° 00' 05.09953473" E
39	24° 04' 10.15233966" N	085° 00' 05.83844284" E
40	24° 04' 10.34557591" N	085° 00' 05.99534678" E
41	24° 04' 10.76869636" N	085° 00' 06.70698466" E
42	24° 04' 10.70206324" N	085° 00' 06.73607935" E
43	24° 04' 10.51215881" N	085° 00' 07.24328047" E
44	24° 04' 09.34274556" N	085° 00' 06.74337721" E
45	24° 04' 09.23280057" N	085° 00' 06.33104824" E
46	24° 04' 09.16949890" N	085° 00' 06.40402682" E
47	24° 04' 09.26278557" N	085° 00' 06.95866402" E
48	24° 04' 09.37273055" N	085° 00' 07.36643183" E
49	24° 04' 08.44599350" N	085° 00' 07.41113120" E
50	24° 04' 08.26688276" N	085° 00' 08.20513814" E
51	24° 04' 08.33298316" N	085° 00' 08.28687414" E
52	24° 04' 08.31659133" N	085° 00' 08.73934133" E
53	24° 04' 08.78968869" N	085° 00' 08.95827707" E
54	24° 04' 08.67641190" N	085° 00' 09.24289352" E
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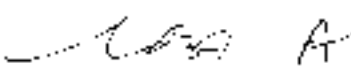
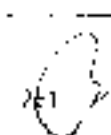
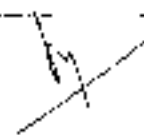
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60	24° 04' 09.81534386" N	085° 00' 10.76456193" E
61	24° 04' 10.51278349" N	085° 00' 10.91273462" E
62	24° 04' 10.43031491" N	085° 00' 11.06577541" E
63	24° 04' 10.43990342" N	085° 00' 11.84207120" E
64	24° 04' 13.51278349" N	085° 00' 11.92899588" E
65	24° 04' 10.66635205" N	085° 00' 12.41506707" E
66	24° 04' 10.81992056" N	085° 00' 12.89113927" E
67	24° 04' 10.46072634" N	085° 00' 13.65513276" E
68	24° 04' 09.86546504" N	085° 00' 13.36864331" E
69	24° 04' 09.27020297" N	085° 00' 13.08215387" E

LAND DETAILS

Khata no.	Plot no.
77	172 (P)
16	173
07	174 (P), 176 (P) & 228

STATUTORY CLEARANCES

1. LOI / Lease docs	The Letter of Intent (LOI) has been issued by District Mining Officer, Chatra vide letter no. 882/Khanan, dated 14.08.2024.
2. CO	The CO, Simanya vide letter no. 635, dated 27.10.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in 3.5. Khattyan & Register 'I'
3. DMO Cluster	DMO, Chatra vide memo no. 642, dated 22.05.2025 certified that 07 other mining lease area (4.00 Acre & 3.00 Acre) exists within 500 m radius from proposed project site and total area is 11.00 Acre.
4. DFO Wildlife	DFO, Wildlife Division, Hazarbag vide letter no. 229, dated


		27.02.2024 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. 211, dated 31.01.2024 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 Chatra District (Sl. no. 06, Page no. 68).
7	Gram Sabha	BDO, Simariya vide letter no. 1261, dated 26.07.2024 Informed that Gram Sabha conducted on 11.02.2024.
8	Mine Plan Approval	Approved by DMO, Chatra vide Letter No. 252/Khanan, dated 24.02.2025.
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 Semi-Mechanized Method	
2	Quarry Area	:	0.837 Ha	Life of Mine – 5 years
3	Waste Generation	:	7890cum	
4	Stripping Ratio	:	1:0.03	
5	Working Days	:	300	
6	Bench: size	:	5 m x 5 m	
7	Elevation of Mine	:	534 m – 528 AMSL	
8	Ground Level Elevation	:	528 AMSL	
9	Ultimate Working Depth	:	509m AMSL	
10	Water Table	:	498m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	14.85 kg Nitro mix explosives/day	
13	Diesel/Fuel requirement	:	HSD – 259.44 liters / day (77.83 KL/year)	

Production Details

Year	Production of Stone / Year		Removal of O.B.
	Cum	T.F. Tonnes	Cum

1st	17661	2.7	47683	5048
2nd	19794	2.7	53441	0
3rd	18723	2.7	50546	552
4th	13526	2.7	36520	2310
5th	10174	2.7	28548	0
Total	80275	2.7	216743	7890

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/end of mine life in (Ha)	Area to be converted in the conceptual period
1	Mining Activities	0.00	0.332	Water body
2	Garland chain	0.00	0.018	
3	Safety zone	0.00	0.732	Green Belt
4	Green Belt	0.00	0.090	Plantation
5	Unutilized	1.618	0.000	
	Total	1.618	1.618	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.732 Ha	1,830
2	Green belt	0.090 Ha	225
3	Along Approach Road	458 m	305
TOTAL			2,361

- 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 n/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCOI. Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

(Signature) A

(Signature)

(Signature)

(Signature)

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)	--	300000
2	Plantation 306 X 800 = Rs 2,44,800 (Gabion Plantation along approach road) No. of Trees to Be Planted in safety zone & Green belt (0.822 Ha.): 2,055 Trees Cost of plant: 2,055 Trees X 400= 8,22,000 (also includes Fertilizer, Pesticides, Maintenance)	10,66,800	1,06,680
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		11,66,800	6,09,900

Environment Monitoring Programme

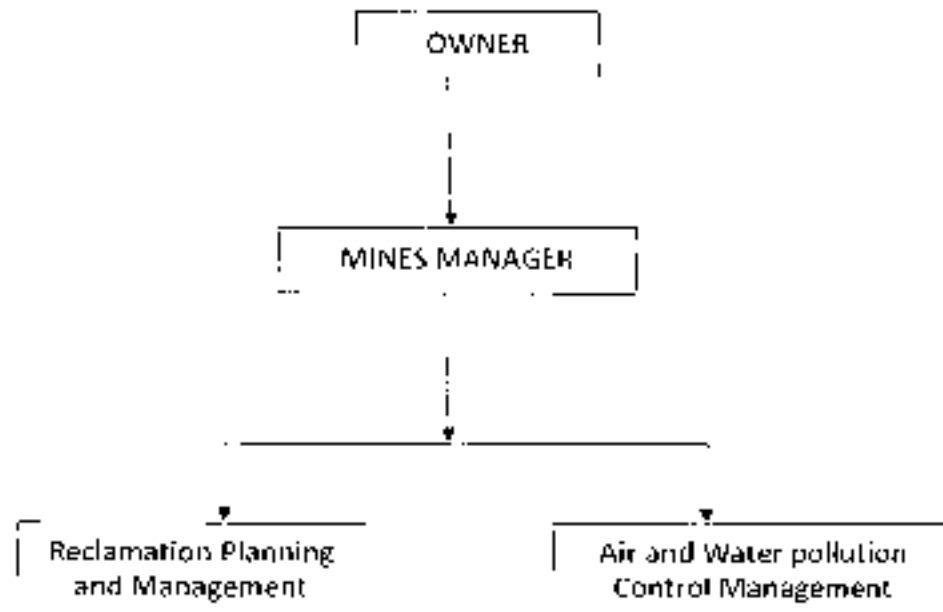
SL No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly

2.	Water	3 stations	6 Monthly
3.	Noise	3 stations	6 Monthly

Solid Waste Management

During first to fourth year / \$900mm. 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 quarry 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.
- Carland drain would be provided on upper contour around the quarry. Water collected in Carland 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.

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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 Haul Road by using water Tankers.
- Regular repair of Haul Road
- All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

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

Hazard Identification & Risk Analysis in Stone Mining operation

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

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

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

Preventive Measures:

Slope Failure

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

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 105(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

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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
- 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 mishaps, 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/pillage, 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.

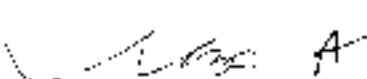
Undertaking submitted affirming:

- 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 Sikri Stone Mine of M/s Jai Mata Di Stone Works (Partners : Shri Vishwas Bharadwaj & Shri Aniteshanand Manav), Village : Sikri, Thana : Simariu, Distt. : Chatra, Jharkhand (1.618 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - I along with following specific conditions :

- I. In compliance of OM no. F.No. IA-1-22/3/2024 (A.III (L 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 Mo Ke Aashirvach" 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 at 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 be 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. Karudih Stone Mine of M/s Ishant Mining Pvt. Ltd. (Director : Shri Tuleshwar Saw), Village : Karudih, Thana : Pratappur, Distt. : Chatra, Jharkhand (2.00 Ha).

(Proposal no.: SIA/JH/MIN/ 540581 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.06.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 74370 Cum. (Max.) / 209790TPA (Max)

Project and Location Details:

Sl. no.	Parameter	Details
1	Project Name	Karudih Stone Mine
2	Lessee:	M/s Ishant Mining Pvt. Ltd. Shri Tuleshwar Saw
3	Lessee Address	Shri Tuleshwar Saw, son of Shri Gyani Saw, resident of Asdiya, Post - Kamta, Thana - Pratappur, District - Chatra, Jharkhand
4	Mine Lease Area	2.00Ha
5	Type of Land	Non-Forest Raiyati Land
6	Project Cost	Capital Cost: Rs. 145.64 Lakhs
7	EMP Budget	Capital Cost: Rs. 8.98 Lakhs Recurring Cost: Rs. 5.83

		Lakhs
8	New or Expansion	New
9	Mineable Reserves	CU/M : 641335 Tonnes: 1795878
10	Mine life	10 years
11	Man power	24 Person
12	Water Requirement	5.4 KLD (Drinking) 0.36 KLD, Dust Suppressor: 1.652 KLD, Plantation: 4.635 KLD
13	Water Source	Will be sourced by authorized vendor
14	DG Set / power	60 KVA D/G Set proposed
15	Crusher	No crusher
16	Nearest Water Body	The nearest water source is Bhunga River flowing SW at 2 km SW Direction from the Mine site
17	Nearest Habitation	Guna C. 58 km at SE direction.
18	Nearest Rail Station	Daltonganj Station is at aerial distance of 63 km SW direction
19	Nearest Air Port	Birsa Munda Airport - Ranchi is at aerial distance of 130 km SE direction.
20	Nearest Forest	More than 250 m, as per Division Forest Officer, Chatra. letter no. - 2244 Dated- 15/09/2023
21	Road & Highways	An approach road of approximately 338 meters originates from the mine site and connects to a village road. The village road extends for about 243 meters, which further connects to the Major District Road (MDR), specifically the Pratappur Road
22	Approach Road	The distance of approach road is 338 m

CO-ORDINATES

Point Name	Latitude	Longitude
1	24° 17' 40.72483542" N	084° 37' 08.54289137" E
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30	24° 17' 38.16010685" N	084° 37' 07.96722647" E
31	24° 17' 39.41961429" N	084° 37' 08.24567592" E

LAND DETAILS

Khata no.	Plot no.
1, 2, 10 & 25	94, 95, 96 & 97

STATUTORY CLEARANCES

1	LOI / Lease docs	The Letter of Intent (LOI) has been issued by District Mining Officer, Chatra vide letter no. 1144/Khanan, dated 19.10.2024.
2	CO	The CO, Pratappur vide letter no. 620, dated 17.08.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jharu" in R.S. Khariyan & Register II and also mentioned that the habitation (10-12 houses) within 500 meters of proposed project site, accordingly PAs has submitted EMP for the same.
3	DMO Cluster	DMO, Chatra vide memo no. 643, dated 22.05.2025 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. 18/9, dated 27.08.2024 certified that the proposed project site is outside Eco

		Sensitive Zone of Lawalong Wildlife Sanctuary
5	DFO Territorial	Divisional Forest Officer, Chatra North Forest Division vide letter no. 2244, dated 15.09.2023 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 Chatra District (S. no. 29, Page no. 79).
7	Gram Sabha	Gram Sabha conducted on 08.12.2023.
8	Mine Plan Approval	Approved by DNIO, Chatra vide Letter No. 111/Khanan, dated 22.05.2025
9	Qualified Person	Shri Malay Kumar Mochapadhyay was present in the meeting and affirmed that the mine plan has been prepared by him

Working Details

1	Mining Method	Opencast Semi Mechanised Method
2	Quarry Area	1.550Ha Life of Mine = 10 years
3	Waste Generation	45530cum
4	Stripping Ratio	1:0.04
5	Working Days	300
6	Bench size	5m x 5m
7	Elevation of Mine	162m - 267 m AMSL
8	Ground Level Elevation	267 m AMSL
9	Ultimate Working Depth	224 m AMSL
10	Water Table	213m AMSL
11	Topography of Mine	Area represents gently sloping land.
12	Explosive Requirement	75.02 kg slurry explosive Will be obtained from licenced Vendors
13	Diesel/Fuel requirement	HSD = 301.02 liters / day (90.30 KL/year)

Production Details

Year	Production of Stone / Year			Removal of D.B.
	Cum recoverable	T.F.	Tonnes	Cum
	95%			

1st	63650	2.8	179550	25245
2nd	74370	2.8	209790	20285
3rd	62505	2.8	175014	0
4th	64800	2.8	181440	0
5th	67095	2.8	187866	0
Total	332420		930776	45630

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 Quarry	-	1.530	1.560	1.560	Water body
2	Dumping	0.00	0.030	0.000	0.000	Comes under mining
3	Garland drain	0.00	0.030	0.030	0.000	-
4	Settling Tank	0.00	0.003	0.003	0.003	-
6	Safety Zone	0.00	0.407	0.407	0.437	Green Belt
7	Unutilized	2.000	0.000	0.000	0.000	-
	Total	2.000	2.000	2.000	2.000	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone/ Dumping/ Offices/ Store etc.	0.437 Ha	1093
2	Along Approach Road	338 m	452
TOTAL			1545

- Gao or 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 3x2 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	Fencing	100000	--
2	Plantation 452 X 800 = Rs. 361600 (Gaboon Plantation along approach road) 1098 X 400 = Rs. 437200 (Plantation within lease area). (also includes Fertilizer, Pesticides, Maintenance)	798800	79880
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.10,920 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.898800	Rs.583100

Source: Central Pollution Control Board
 Notification, New Delhi, the 22nd February, 2007

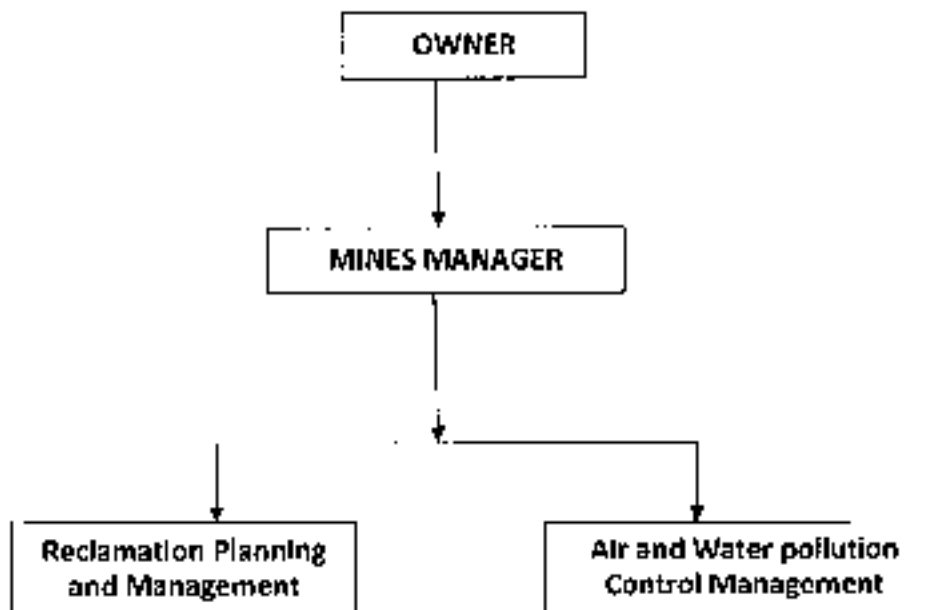
Environment Monitoring Programmed

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

45630cum. 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 quarry 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 Haul Road by using water Tankers.
- Regular repair of Haul Road.
- All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method.

Hazard Identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score ⁺
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Trapping (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 on sides. 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 drilling itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place in-place, 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.

— *[Signature]* A

20. *[Signature]*

[Signature] 20

- 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 / rippers/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 cleared 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 guide 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.

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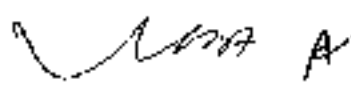
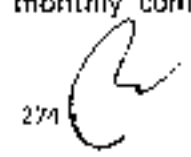
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- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

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 Karudih Stone Mine of M/s Ishant Mining Pvt. Ltd. (Director : Shri Tuleshwar Saw), Village : Karudih, Thana : Pratappur, Distt. : Chatra, Jharkhand (2.00 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I 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 Ka Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nlc.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.

- VI. 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. Dimadaha Stone Mine of Fadar Ansari, Village : Dimadaha Thana : Shikaripara, Distt. : Dumka, Jharkhand (1.512 Ha).

(Proposal no.: SIA/JH/MIN/ 539880 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.06.2025

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 53818CUM. (MAX.) / 145307TONS (MAX.) per year.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Dimadaha Stone Deposit
2	Lessee	Fadar Ansari
3	Lessee Address	5/0 Late Awedim Ansari, B/O VIL Logiknopp P.O., Rajbandh Palasi, P.S. - Shikaripara, Dist - Dumka, 815113
4	Mine Lease Area	1.512 ha
5	Type of Land	Non-Forest Bariyati Land
6	Project Cost	Capital Cost: Rs. 144.54 Lakhs
7	FMP Budget	Capital Cost: Rs. 9.24 Lakhs Recurring Cost: Rs. 5.85 Lakhs
8	New or Expansion	New
9	Mineable Reserves	2,58,523 cum 6,98,039 tons

10	Mine Life	: 05 years
11	Man power	: 22 Person
12	Water Requirement	: 6.510 KLD (Drinking: 0.0330 KLD, Dust Suppression: 0.600 KLD, Plantation: 5.580 KLD).
13	Water Source	: Will be sourced from authorized vendor
14	DG Set / power	: 60 KVA D.G. Set proposed
15	Crusher	: No crusher
16	Nearest Water Body	: Brahmani river at 0.5 km NW direction
17	Nearest Habitation	: Dimadaha Village in NW Direction
18	Nearest Rail Station	: Pinergaria Railway Station at aerial distance of 7.40 km at NE direction.
19	Nearest Air Port	: Deoghhar Airport is at aerial distance of 92 km at North West direction.
20	Nearest Forest	: More than 250 m, as per Division Forest Officer N.O.C. letter no. 858 Dated- 15/04/2025
21	Road & Highways	: Approach Road is 150m starts from SE side of the lease area, after that, this road connects to village road.
22	Approach Road	: Approach Road is 150m.

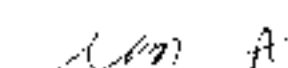
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30	24° 15' 05.52886855" N	087° 35' 03.79034657" E
31	24° 15' 06.31704787" N	087° 35' 02.56993196" E
32	24° 15' 06.53451101" N	087° 35' 02.85920882" E
33	24° 15' 06.94732020" N	087° 35' 02.99664594" E
34	24° 15' 07.21333458" N	087° 35' 02.20403760" E
35	24° 15' 06.92867045" N	087° 35' 03.04558888" E
36	24° 15' 07.66149576" N	087° 35' 04.23520847" E
37	24° 15' 08.06520790" N	087° 35' 03.56820579" E
38	24° 15' 08.57423626" N	087° 35' 03.80660173" E
39	24° 15' 08.74010979" N	087° 35' 03.76407158" E
40	24° 15' 09.06027057" N	087° 35' 03.93066909" E
41	24° 15' 08.85244659" N	087° 35' 04.51763044" E
42	24° 15' 09.88393593" N	087° 35' 05.42831657" E
43	24° 15' 10.01378951" N	087° 35' 05.15550492" E
44	24° 15' 10.17026238" N	087° 35' 05.61874146" E

LAND DETAILS

Khata no.	Plot no.
73	239 (F), 240 (F), 241 (P) & 242 (P)
26	244 & 246
12	245 (P)
21	247 & 254
11	250 (P)
18	251 (P), 252 (P) & 253 (P)
10	255 & 256 (P)
27	261 (P)






STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 628/M, dated 24.04.2025.
2	CO	:	The CO, Shikaripara vide letter no. 336/Ra., dated 12.04.2025 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R S. Khatiyar & Register II.
3	DMO Cluster	:	DMO, Dumka vide memo no. 681/M, dated 10.05.2025 certified that 01 other mining lease area (4.89 Acre) exists within 500 m radius from proposed project site and total area is 8.63 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 657, dated 19.04.2025 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. 858 dated 15.04.2025 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. 731/M, dated 24.05.2025 that this project is mentioned in approved DSR of Dumka District as a potential area (Page no. 182).
7	Gram Sabha	:	Gram Sabha conducted on 11.03.2025.
8	Mine Plan Approval	:	Approved by DMO, Dumka vide Letter No. 720/M, dated 21.05.2025.
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 Semi-Mechanized Method	
2	Quarry Area	:	0.848 Ha	Life of Mine – 05 year
3	Waste Generation	:	31460cum	
4	Stripping Ratio	:	1:0.04	
5	Working Days	:	300	
6	Bench size	:	6 m x 6 m	
7	Elevation of Mine	:	76mAMSL–70mAMSL	
8	Ground Level Elevation	:	70 m RL	

9	Ultimate Working Depth	: 50m AMSL
10	Water Table	: 25m AMSL
11	Topography of Mine	: Area represents gently sloping land.
12	Explosive Requirement	: 53.46 kg Nitro Mix Explosive to be obtained from licensed vendors
13	Diesel/Fuel requirement	: HSD = 275.3 liters / day (\$1.99 kl/year)

Production Details

Year	Production of Stone / Year			Removal Of O.B.
	Cum	T.F.	Tonnes	Cum
1st	49125	2.7	132611	18260
2nd	50469	2.7	135996	19200
3rd	52146	2.7	143793	0
4th	53086	2.7	143337	0
5th	53818	2.7	145307	0
Total	258533		698039	31460

Land Use

EXISTING, PROPOSED & CONCEPTUAL LAND USE

Sl. No.	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	Mining Activities	-	0.818	0.818	Water body
2	Dumping	-	0.120	0.120	OR used for backfilling & area under plantation
3	Garland drain	-	-	-	-
4	Settling Tank	-	-	-	-
5	Safety Zone	-	0.544	0.544	Plantation

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6	Unutilized	1.512	-	-	-
Total		1.512	1.512	1.512	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.544Ha	1360
2	Along Approach Road	150 m	200
3	Dumping area	0.120 Ha	300
TOTAL			1860

- Gablon 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 (i) Gabion Plantation along approach road) = 200 X 800 = INR 1,60,000 (ii) Plantation within lease area/Green Belt) = 1360 X 400 = INR 5,44,000 (also includes Fertilizer, Pesticides, Maintenance) (iii) No. of Trees to Be Planted in Dumping area (At the time of mine closure) = 300 X 400= INR 1,20,000	8,24,000	82,400
3	Fencing	1,00,000	-
4	Environmental Monitoring (One Day Monitoring)	--	2,03,220

Sl. No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
	- 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		
Total		9,24,000	5,85,620

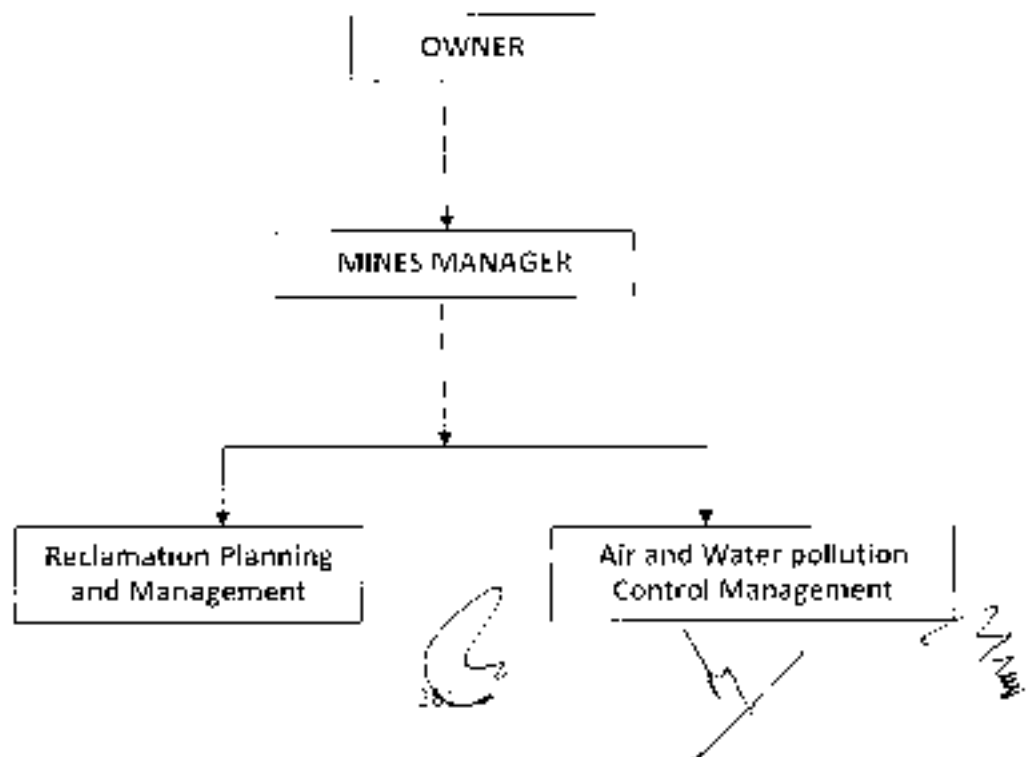
Environment Monitoring Programme

Sl. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	3 stations	6 Monthly
3.	Noise	3 stations	6 Monthly

Solid Waste Management

31450cum. C.B. will be used in maintenance of mine road and left over C.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 quarry 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 Haul Road by using water Tankers.
- Regular repair of Haul Road
- All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

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

Hazard Identification & Risk Analysis In Stone Mining operation

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

3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tipping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material.	Very Unlikely	Minor	20
7	Transportation	Exposure to Dust 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

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Falls from the edge of a bench

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

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

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during 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.

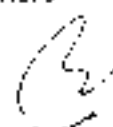
- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary 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:

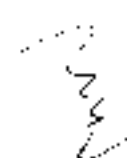
- Proper and safe storage of explosives in approved and licensed Magazine.
- Proper security system to prevent theft/pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.

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- 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 Dimadaha Stone Mine of Fadar Ansari, Village : Dimadaha Thana : Shikaripara, Distt. : Dumka, Jharkhand (1.512 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I 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.

4. **Jokmari (Guttibera) Stone Mine of M/s B.P.Y. Infra Build Pvt. Ltd. (Prop. : Shri Bajrang Prasad Yadav), Village : Jokmari (Guttibera), Thana Jirwabari, Distt. : Sahibganj, Jharkhand (2.792 Ha).**

(Proposal no.: SIA/JH/MIN/ 538545 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.06/2025

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity:123200 Cum. (Max.) / 344960TPA (Max)

Project and Location Details:

Sr	Parameter	Details
1	Project Name	Jokmari (Guttibera) Stone Mine
2	Lessee:	M/s B.P.Y. Infra Build Pvt. Ltd. Shri. Bajrang Prasad Yadav
3	Lessee Address	Shri Bajrang Prasad Yadav, Mo Laga Anjan Yadav residing at Village – Bhartiya Colony Thana – P.O. + District – Sahibganj Jharkhand.
4	Mine Lease Area	2.792Ha
5	Type of Land	Non-Forest Barren Land
6	Project Cost	Capital Cost: Rs. 180.34 Lakhs
7	EMP Budget	Capital Cost: Rs 9.30 Lakhs Recurring Cost: Rs. 5.88 Lakhs
8	New or Expansion	New
9	Mineable Reserves	CUM. 840980 Tonnes 2354744
10	Mine Life	10 years.
11	Man power	36 Person
12	Water Requirement	7.70 KLD (Drinking: 0.54 KLD, Dust Suppression: 1.85 KLD, Plantation: 5.72 KLD)
13	Water Source	Will be sourced from authorised vendor
14	DG Set / power	60 kVA D.G. Set proposed
15	Crusher	No crusher
16	Nearest Water Body	Ganga River – 6.28 km NE direction
17	Nearest habitation	Ganga Porshad – 1.89 km in the NE direction.
18	Nearest Rail Station	Sahibganj Railway Station is at Aerial distance of 5 km in East direction

19	Nearest Air Port	:	Deoghar Airport is at Aerial distance of 124 km SW direction.
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer, Sahibganj. letter no.-763 Dated- 20/03/2025
21	Road & Highways	:	The distance of Approach Road is 297m, after that, this road connects to village road.
22	Approach Road	:	The distance of Approach Road is 297m.

CO-ORDINATES

Point Id	Latitude	Longitude
1	25° 13' 59.90608778" N	087° 35' 05.59793777" E
2	25° 14' 00.29287393" N	087° 35' 03.86232077" E
3	25° 14' 01.04960645" N	087° 35' 01.93405978" E
4	25° 14' 01.38996055" N	087° 35' 01.27809517" E
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24	25° 14' 01.31972223" N	087° 35' 05.84547483" E

LAND DETAILS

Khata no.	Plot no.
16	224 (P)
45	226
81	238 (P)

STATUTORY CLEARANCES

1	LOI/Lease docs	The Letter of Intent (LOI) has been issued by District Mining Officer, Sahibganj vide letter no. 709/M dated 25.04.2025
2	CO	The CO, Mandro vide memo no. 157/Ra, dated 27/03/2025 has mentioned the plot no. of the project is not recorded as "Jungle-Land" in R.S. Khattiyar & Register I
3	DMD Cluster & Grid cert locate	DMD, Sahibganj vide memo no. 710/M, dated 25.04.2025 certified that all other mining lease area (4.57 Acre) exists within 500 meters radius from proposed project site and total area is 11.47 Acre and also certified that said project falls under redzone grid no. 3 and production is within the overall permissible production limit.
4	DFO Wildlife	DFO - cum. In-charge Wildlife Sanctuary, Udliwa (Sahibganj) vide letter no. 1950, dated 23.08.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udliwa Bird Sanctuary.
5	DFO Territorial	Divisional Forest Officer, Sahibganj Forest Division vide letter no. 763, dated 20.02.2025 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	The DMD, Sahibganj has been certified vide memo no. 708/M, dated 25.04.2025 that this project is mentioned in approved DSR of Sahibganj District as a potential area (Page no. 185).
7	Gram Sacha	Gram Sacha conducted on 25.10.2017
8	Mine Plan Approval	Approved by District Mining Officer, Sahibganj vide Letter No. 780/M dated 05.05.2025.
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	Open cast Semi-Mechanized Method
2	Granny Area	2.254Ha. Life of Mine - 10 years
3	Waste Generation	33090cum
4	Stripping Ratio	1:0.01
5	Working Days	300
6	Bench size	6 m x 6 m

7	Elevation of Mine	225m-166 m AMSL
8	Ground Level Elevation	166 m AMSL
9	Ultimate Working Depth	138 m AMSL
10	Water Table	127m AMSL
11	Topography of Mine	Area represents gently sloping land.
12	Explosive Requirement	116.424 kg Nitro mix explosives. will be obtained from licenced Vendors
13	Diesel/Fuel requirement	HSD -348.18liters / day (115.25 KL/year)

Production Details

Year	Production of Stone / Year			Removal of O.B.
	Cum	T.F.	Tonnes	Cum
1st	94100	2.8	263480	14400
2nd	104880	2.8	293664	5090
3rd	120200	2.8	336560	6000
4th	113600	2.8	318080	3400
5th	123200	2.8	344960	4200
Total	555980		1556744	33090

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 Quarry	-	2.254	2.254	2.254	Water body
2	Garland drain	-	-	-	-	
3	Settling Tank	-	0.005	0.005	0.005	-
4	Safety Zone	-	0.533	0.533	0.533	Plantation
5	Unutilized	2.7589	0.000	0.000	0.000	-
6	Excavated Quarry	0.033	-	-	-	-
Total		2.7920	2.7920	2.7920	2.7920	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
	Safety Zone/	0.555 Ha	1333
1	Dumping/		
	Offices/ Store etc.		
2	Along Approach Road	396 m	396
TOTAL			1729

- Gabion Plantation work in the safety zone (7.5 m width around the proposed east 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 FCE, 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)		300000
2	Plantation $396 \times 800 =$ Rs. 316800 (Gabion Plantation along approach road) $1333 \times 400 =$ Rs. 533200 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	850000	85000
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)		2,03,270

Sl. No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
	At least two seasons in a Year -Rs. 1,01,610 x 2 = Rs. 2,03,220 <i>Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022</i>		
Total		9,50,000	5,88,220

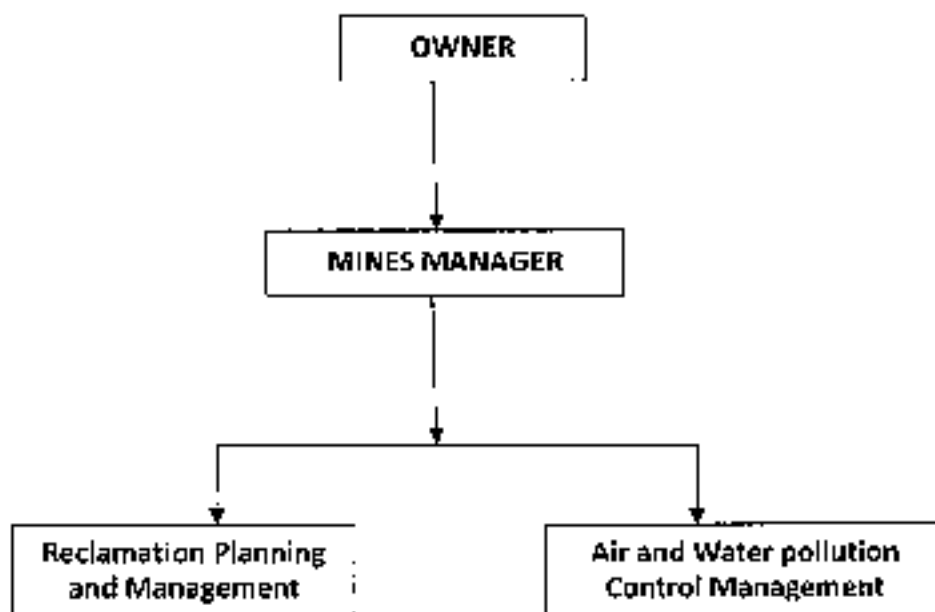
Environment Monitoring Programmed

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

33090cum. 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 quarry 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 Haul Road by using water tankers.
- Regular repair of Haul Road.
- All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

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

Hazard Identification & Risk Analysis in Stone Mining operation

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

4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material.	Very Unlikely	Minor	20
7	Transportation	Exposure to Dust 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 cranking arm 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 drilling 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

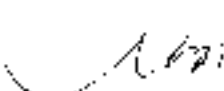
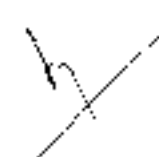
- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

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 / ripper/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.

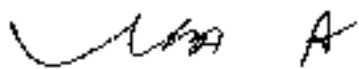
    

- ◆ All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- 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:

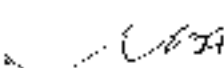
- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are 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.

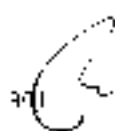
Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Jokhari (Guttibera) Stone Mine of M/s B.P.V. Infra

Build Pvt. Ltd. (Prop. : Shri Bajrangi Prasad Yadav), Village : Jokhari (Guttibera), Thana : Jirwabari, Distt. : Sahibganj, Jharkhand (2.792 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I In consideration of the comments regarding distance in the certificate issued by the DFO, Sahibganj regarding Man - Animal conflict in the area the PAs have submitted an undertaking that if any mitigation plan is prepared and implemented by DFO, Sahibganj the PAs will contribute their share of the funds to the extent of their CSR budget on demand by the DFO, Sahibganj.
- II In compliance of OM no. F.No. A3-22/3/2024-IA II (F-2412594) 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 Ek Kadam" and the details of the same shall be uploaded in the MenLife Portal (<https://menlife.mca.in>). 10% of the total green belt proposed shall be allocated under this clause.
- III 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 4 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 PLEH, Audiometry and other required tests. Summary findings of same to be submitted along with 6 monthly compliance.
- VII Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted 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.







5. **Jirikdanga Stone Deposit of M/s Anantdhara Construction Pvt. Ltd. (Director : Shri Deepak Kumar Singh), Village : Jirikdanga, Thana : Taljhari, Thana no. : 38, Distt. : Sahibganj, Jharkhand (2.934 Ha).**

(Proposal no.: SIA/JH/MIN/ 538837 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.06.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity:146700 Cum. (Max.) / 410750 TPA(Max).

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Jirikdanga Stone deposits
2	Lessee:	: M/S Anantdhara Construction Pvt. Ltd. Director: Shri Deepak Kumar Singh
3	Lessee Address	: Director- Shri Deepak Kumar Singh, S/O Shri R. K. Singh, Vill- Ravindra Path, Patna Road, Ranchi.
4	Mine Lease Area	: 2.934Ha
5	Type of Land	: Non-Forest Raiyati Land
6	Project Cost	: Capital Cost: Rs. 222.64 Lakhs
7	EMP Budget	: Capital Cost: Rs. 8.00 Lakhs Recurring Cost: Rs. 5.65 Lakhs/Year
8	New or Expansion	: New
9	Mineral Reserves	: CUM.: 1317150 Tonnes: 3688020
10	Mine Life	: 10 years.
11	Man power	: 45Person
12	Water Requirement	: 6.735 KLD ~ Say (7 KLD) (Drinking: 0.675 KLD, Dust Suppression: 1.672 KLD, Plantation: 4.338 KLD)
13	Water Source	: From Nearby villages by tankers
14	DG Set / power	: 60 KVA D.G. Set proposed
15	Crusher	: No crusher
16	Nearest Water Body	: River Ganga is Flowing west to east – 10.50 Km In NE direction
17	Nearest Habitation	: Jirikdanga at NW direction.

18	Nearest Rail Station	Kalian Chak is at Aerial distance of 5 km in East direction
19	Nearest Air Port	Deghar Airport is at Aerial distance of 120 km SW direction
20	Nearest Forest	Divisional Forest Officer, Sahibganj, Forest Division vide memo no. 2425, dated 01-10-2020 certified that the distance of forest land is more than 250 meters from proposed project site.
21	Road & Highways	The distance of Approach Road is 418m, after that, this road connects to village road
22	Approach Road	The distance of Approach Road is 428m

CO-ORDINATES

Point Name	Latitude	Longitude
1	25° 02' 33.17429922" N	087° 41' 46.34244959" E
2	25° 02' 34.35098185" N	087° 41' 46.84155459" E
3	25° 02' 35.74520573" N	087° 41' 47.51527043" E
4	25° 02' 36.74959467" N	087° 41' 48.21690368" E
5	25° 02' 37.98807647" N	087° 41' 49.00494222" E
6	25° 02' 37.51726508" N	087° 41' 49.93936913" E
7	25° 02' 37.04590319" N	087° 41' 50.87379604" E
8	25° 02' 36.57454080" N	087° 41' 51.80831295" E
9	25° 02' 36.10317790" N	087° 41' 52.74264986" E
10	25° 02' 35.65747336" N	087° 41' 53.62677294" E
11	25° 02' 35.21170828" N	087° 41' 54.52085452" E
12	25° 02' 34.76606294" N	087° 41' 55.39501610" E
13	25° 02' 34.32025705" N	087° 41' 56.27913818" E
14	25° 02' 33.47485402" N	087° 41' 55.86788387" E
15	25° 02' 32.52934917" N	087° 41' 55.45662958" E
16	25° 02' 32.23727895" N	087° 41' 54.01803620" E
17	25° 02' 33.10464053" N	087° 41' 52.75007160" E
18	25° 02' 33.37201994" N	087° 41' 51.48210700" E
19	25° 02' 32.40874789" N	087° 41' 51.17526497" E
20	25° 02' 31.58275993" N	087° 41' 50.53873195" E
21	25° 02' 31.83064289" N	087° 41' 49.48956136" E
22	25° 02' 32.27852736" N	087° 41' 48.44059077" E
23	25° 02' 32.72641043" N	087° 41' 47.39157018" E

LAND DETAILS

Khata no.	Plot no.
08	120.P1
21	121.P1
20	122.P1

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 700/M, dated 25.04.2025.
2	CO	:	The CO, Taljhari vide letter no. 358, dated 16.05.2025 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyar & Register II.
3	DMO Cluster	:	DMO, Sahibganj vide memo no. 706/M, dated 25.04.2025 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. 1344, dated 16.05.2025 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 letter no. 2425, dated 01.10.2020 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. 705/M, dated 25.04.2025 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 30.12.2019.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 733/M, dated 29.04.2025.
9	Grid Certificate	:	DMO, Sahibganj vide memo no. 1107/M, dated 19.06.2025 certified that said project falls under grid no. 66 and production is within the over all permissible production limit.
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 Semi-Mechanized Method	
2	Quarry Area	:	2.3779 Ha.	Life of Mine – 10years
3	Waste Generation	:	35700cum	
4	Stripping Ratio	:	1 0.02	
5	Working Days	:	300	
6	Bench: size	:	6 m x 6 m	

7	Elevation of Mine	: 210m - 160m AMSL							
8	Ground Level	: 160 m AMSL							
9	Elevation Ultimate Working Depth	: 143m AMSL							
10	Water Table	: 131 m AMSL							
11	Topography of Mine	: Area represents sloping and							
12	Explosive	: 138 Bkg Nitro mix explosives							
12	Requirement	: Will be obtained from licensed vendors							
13	Diesel/Fuel requirement	: 150 - 259 44 litres / day (77.83 KL/year)							

Production Details

Year	Production of Stone / Year			Removal of O.B.
	Cum	T.F.	Tonnes	Cum
1st	129250	2.5	359100	24300
2nd	135650	2.8	382620	4650
3rd	143450	2.8	387660	7750
4th	140100	3.8	397280	2400
5th	145700	2.8	416750	2100
Total	690150		1932420	35700

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 Quarry	0.000	2.2779	2.2779	2.3779	Water body
2	Offices/ Store etc	0.000	0.000	0.000	0.000	-
3	Dumping	0.000	0.057	0.000	0.000	-
4	Mining	0.000	0.000	0.000	0.000	-

	Road					
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	0.556	0.556	0.556	Plantation
8	Stone Stock yards	0.000	0.000	0.000	0.000	
9	Unutilized	2.9340	0.000	0.000	0.000	-
Total		2.9340	2.9340	2.9340	2.9340	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone/ Dumping/ Offices/ Store etc.	0.556 Ha	890
2	Along Approach Road	418 m	556
TOTAL			1446

- 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 556 X 800 = Rs 444,800 (Gabion Plantation along approach road) 890 X 400 = 356,000 (Plantation within lease area) (also includes Fertilizer, Pesticides,	6,20,800	62,080

Sl. No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
	Maintenance		
3	Fencing	100,000	
4	Environmental Monitoring (One Day Monitoring)	--	2,03,220
	- 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, 2021		
	Total	800,800	5,65,300

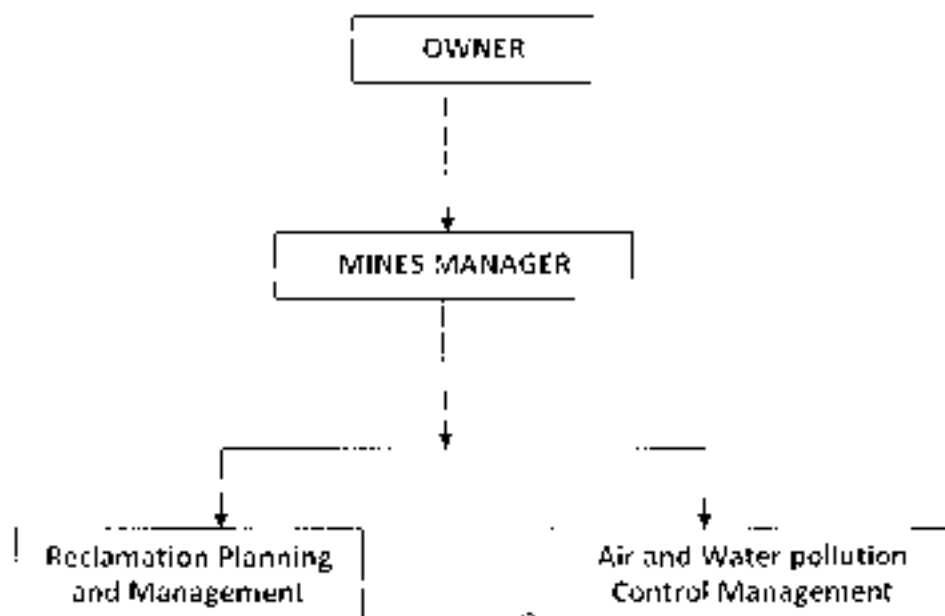
Environment Monitoring Programmed

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

35/000 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 quarry 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 Haul Road by using water Tankers.
- Regular repair of Haul Road
- All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

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

Hazard identification & Risk Analysis in Stone Mining operation

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

3	Blasting	High fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Bleed/Trapping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by cutting by loading material.	Very Unlikely	Minor	20
7	Transportation	Exposure to Dust 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(1) 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 drifter 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.

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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.

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.

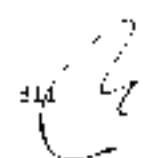
Handling of Explosives

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, directed and 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/unloading operation.
- Only trained drivers will be hired.

Undertaking submitted affirming:

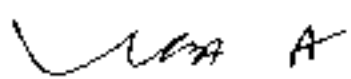
- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are 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 then 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.

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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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 Anantdhara Construction Pvt. Ltd. (Director : Shri Deepak Kumar Singh), Village : Jirikdanga, Thana : Taljharl, Thana no. : 38, Distt. : Sahibganj, Jharkhand (2.934 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - I 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.nlc.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. Chotrogoga Stone Mine of M/s Devotion Green Construction Pvt. Ltd. (Director : Shri Tanweer Alam), Village : Chotrogoga, Thana : Jirwabari, Distt. : Sahibganj, Jharkhand (2.83 Ha).

(Proposal no.: SIA/JH/MIN/ 540010 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 21.06.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 99731 Cum. {Max.} / 289220TPA (Max).

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Chotrogoga Stone Deposits
2	Lessee:	M/s Devotion Green Construction Pvt. Ltd. Director : Shri Tanweer Alam Shri Tanweer Alam, S/o Md. Ehsan Alam, B/o Near Nawab
3	Lessee Address	Residence, Karwah Tank Road, P.O. : P.S. Lower Bazar, Distt. : Ranchi
4	Mine Lease Area	2.83 Ha
5	Type of Land	Non-Forest Barwadi Land
6	Project Cost	Capital Cost: Rs. 178.97 Lakhs
7	FMP Budget	Capital Cost: Rs. 7.8585 Lakhs Recurring Cost: Rs. 5.1954 Lakhs
8	New or Expansion	New
9	Mineable Reserves	CUM. 8,50,715 Tonnes: 24,67,074
10	Mine Life	10 years
11	Man power	62 Person
12	Water Requirement	6.854 KLD (Drinking: 0.57 KLD, Dust Suppression: 1.64 KLD, Plantation: 4.644 KLD)
13	Water Source	From Nearby villages by tankers
14	DG Set / power	60 KVA D.G. Set proposed
15	Crusher	No crusher
16	Nearest Water Body	Ganga River – 5.50 km – NE direction
17	Nearest habitation	Pacharki Village at distance of 0.87km

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18	Nearest Rail Station	: Sahibganj Railway Station is at areal distance of 4 km NE direction.
19	Nearest Air Port	: Deoghar Airport is at areal distance of 125 km SW direction.
20	Nearest Forest	: More than 250 m, as per Division Forest Officer, Sahibganj vide Letter No. 745 Dated- 12/04/2024
21	Road & Highways	: The distance of Approach Road is 270m, after that this road connects to village road. The village road continues for 3.00 km and after this the road connects to MDR Sahibganj - Mirzacheuki Road.
22	Approach Road	: The distance of Approach Road is 270m

CO-ORDINATES

Point ID	Latitude	Longitude
1	25° 13' 26.10437733" N	087° 35' 55.45787763" E
2	25° 13' 27.36925196" N	087° 35' 55.69917638" E
3	25° 13' 28.58194663" N	087° 35' 55.93051231" E
4	25° 13' 30.00735519" N	087° 35' 56.20242678" E
5	25° 13' 31.43275912" N	087° 35' 56.47434124" E
6	25° 13' 31.74839379" N	087° 35' 58.10271341" E
7	25° 13' 31.07967275" N	087° 35' 59.59290126" E
8	25° 13' 30.93276143" N	087° 36' 00.89046336" E
9	25° 13' 30.78585007" N	087° 36' 02.18802547" E
10	25° 13' 29.51587667" N	087° 36' 01.97077065" E
11	25° 13' 28.24589959" N	087° 36' 01.75351583" E
12	25° 13' 27.00314162" N	087° 36' 01.54091799" E
13	25° 13' 25.70593438" N	087° 36' 01.31900619" E
14	25° 13' 25.58894553" N	087° 36' 00.07594769" E
15	25° 13' 25.47195664" N	087° 35' 58.83288919" E
16	25° 13' 25.33786844" N	087° 35' 57.40814329" E
17	25° 13' 25.11629644" N	087° 35' 56.78845256" E

LAND DETAILS

Khata no.	Plot no.
25 & 26	35 (P1) & 36 (P2)

STATUTORY CLEARANCES

1	LCI / Lease deed	The letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 1105/M, dated 09.10.2024
2	CO	The CO Mandate vide memo no. 412/Ra., dated 21.05.2025 has mentioned the plot no. of the project is not recorded as "Jungles" in R.S. Khatriya & Register I
3	DMO Cluster	DMO, Sahibganj vide memo no. 766/MA, dated 03.05.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	DFO - Jadhwa Wildlife Sanctuary, Jadhwa (Sahibganj) vide letter no. 745, dated 12.01.2024, certified that the proposed project site is outside Pro Service Zone of Jadhwa G.Ro Sanctuary.
5	DFO Territorial	Divisional Forest Officer, Sahibganj Forest Division vide letter no. 32, dated 04.01.2024, certified that the distance of reserved / protected forest is more than 750 meters from proposed project site.
6	DSR	This project is mentioned in approved DSR of Sahibganj District (SI) No. 29, Page no. 1651
7	Gram Sabha	Gram Sabha conducted on 20.01.2024
8	Mine Plan Approval	Approved by District Mining Officer, Sahibganj vide Letter No. 817/M, dated 10.05.2025
9	Grid Certificate	DMO, Sahibganj vide memo no. 1039/M, dated 13.05.2025, certified that said project falls under grid no. 14 and production is within the overall permissible production limit.
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 Semi Mechanized Method

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2	Quarry Area	:	2.355 Ha.	Life of Mine – 10years
3	Waste Generation	:	44,515 cum	
4	Stripping Ratio	:	1:0.03	
5	Working Days	:	300	
6	Bench: size	:	6 m x 6 m	
7	Elevation of Mine	:	225m–155m AMSL	
8	Ground Level Elevation	:	155 m AMSL	
9	Ultimate Working Depth	:	145 m AMSL	
10	Water Table	:	124m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	101.76kg Nitro mix. will be obtained from licenced Vendors	
13	Diesel/Fuel requirement	:	HSD – 481.53 liters / day (144.459 KL/year)	

Production Details

Year	Production of Stone / Year		Removal of O.B.	
	Cum recoverable 95%	T.F.	Tonnes	Cum
1st	97150	2.9	281735	23200
2nd	99731	2.9	289220	8845
3rd	73805	2.9	214035	4495
4th	78590	2.9	227911	4060
5th	75835	2.9	219922	3915
Total	425111	2.9	1232822	44515

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	1.734	2.355	2.355	Waterbody
2	Dumping	0	0.203	0	0	-

3	Safety Zone	0	0.475	0.475	0.475	Plantation
4	Crushed	2.830	0.418	0	0	-
Total		2.830	2.830	2.830	2.830	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No	Location	Area/Length	No. of Trees
	Safety Zone/	0.475 Ha	1188
1	Dumping/		
	Offices/ Store etc.		
2	Along Approach Road	270 m	360
TOTAL			1548

- 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 2x3 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 PC/F 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. 800 per Tanker)		2,40,000
2	Plantation 360 X 800 = Rs. 2,88,000 (Gabion Plantation along approach road) 1188 X 400 = Rs. 4,75,200 (Plantation within lease area) (also includes Fortifier, Pesticides, Maintenance)	7,63,200	76,320
3	Fencing	40,650	
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) -		2,03,220

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Sl. No.	Particulars	Capital Cost In Rs.	Recurring Cost in Rs. per year
	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		
Total		7,85,850	5,19,540

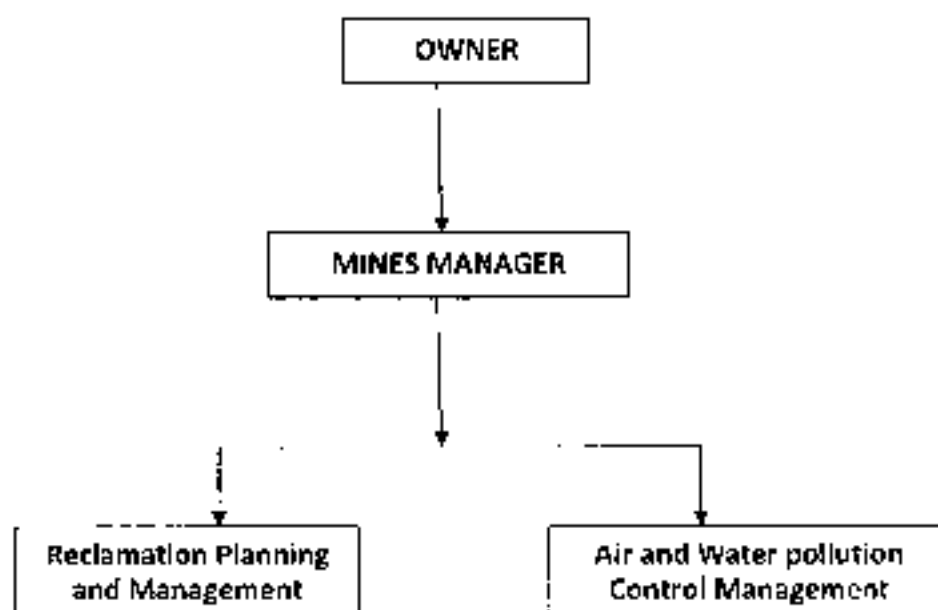
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Sl. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 Station	6 Monthly

Solid Waste Management

44515cum. 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 quarry 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.
- Gull and drain would be around on upper contour around the quarry. Water collected in Gull and 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.

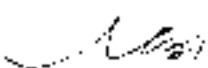
- Regular water sprinkling on Haul Road by using water tankers.
- Regular repair of Haul Road.
- All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

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

Hazard Identification & Risk Analysis in Stone Mining operation

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

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

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

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

Preventive Measures:

Slope Failure

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

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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.

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 no 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 specifically provided for the purpose
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep working of drilling zones will be done by water seeping 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 drilling itself

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place on-site, 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.

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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. SI 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:

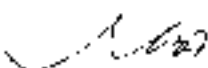
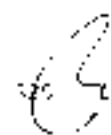
- Rough access roads.
- Time pressure.
- Inadequate brakes (Possibly from lack of maintenance).
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured).
- Untrained drivers.
- Overturning vehicles.

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 moving vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

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

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

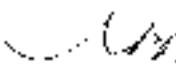
Undertaking submitted affirming:

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

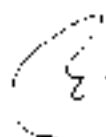
Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Chotrogoga Stone Mine of M/s Devotion Green Construction Pvt. Ltd. (Director : Shri Tanweer Alam), Village : Chotrogoga, Thana : Jirwabarl, Distt. : Sahibganj, Jharkhand (2.83 Ha) is recommended for grant of EC. The

various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

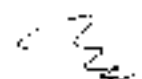
- I In consideration of the comments regarding distance in the certificate issued by the DFO, Sahibganj, regarding Mar – Anna conflict in the area the PAs have submitted an undertaking that if any mitigation plan is prepared and implemented by DFO, Sahibganj, the PAs will contribute their share of the funds to the extent of their CSR budget on demand by the DFO, Sahibganj.
- II In compliance of G.O. No. F.No. 1A3-7273/2024 (A.1) (E-24) 3041 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 Pad Ma Ke Aagari' and the details of the same shall be uploaded in the MoEF&CC Portal (<https://medilide.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.
- III The Deputy Commissioner through District Mining Officer will ensure that the mines owner of his respective mines 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 maintained 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 PLEH, Audiometry and other required tests. Summary findings at same to be submitted along with 6 monthly compliance.
- VII Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted 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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7. **Parte Mako Stone Mine of Shri Shrivastav Kumar Yadav & Shri Pawan Kumar (Partners),**
Village : Parte Mako, Thana : Borio, Thana no. : 16, Distt. : Sahibganj, Jharkhand (2.679 Ha).
(Proposal no.: SIA/IH/MIN/ 540658 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.06.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 52700 CUM. / annum or 147560TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Parte Mako Stone Mine
2	Lessee:	: Shri Shrivastav Kumar Yadav and Shri Pawan Kumar
3	Lessee Address	: Shri Shrivastav Kumar Yadav, S/o Late Ganga Sagar Yadav, residing at Sakin, Near Jai Prakash Chowk, Sarkogarh, P.O. + P.S. + Dist. - Sahibganj. & Shri Pawan Kumar, Residing at Sakin – Laliyahi, Dist – Katihar, Bihar.
4	Mine Lease Area	: 2.679 Ha
5	Type of Land	: Non-Forest Raiyati Land
6	Project Cost	Capital Cost: Rs.291.14 Lakhs
7	EMP Budget	: Capital Cost: Rs. 7.8 Lakhs Recurring Cost: Rs. 5.71 Lakhs/year
8	New or Expansion	: New
9	Mineable Reserves	: cum.: 456900 Cum Tonnes: 1279320 Tons
10	Mine Life	: 10 years.
11	Man power	: 36 Person
12	Water Requirement	: 6KLD (Drinking: 0.480 KLD, Dust Suppression: 0.440 KLD, Plantation: 4.52 KLD)
13	Water Source	: From Nearby villages by tankers
14	DG Set / power	: 20 KVA D.G. Set proposed
15	Crusher	: No
16	Nearest Water Body	: Ganga River flowing at 6.15 km N Direction.
17	Nearest	: Parte Mako Village – 0.500 km in the NW direction.

Habitat on		
18	Nearest Rail Station	Sahibganj Railway Station is at Aerial distance of 8 km in NW direction
19	Nearest Air Port	Doughar Airport is at Aerial distance of 129.16 km SW direction
20	Nearest Forest	More than 350 m, as per Division Forest Officer, Sahibganj Letter no - 259 Dated- 01/02/2020
21	Road & Highways	The distance of Approach Road is 110m, after that, this road connects to village road
22	Approach road	The distance of Approach Road is 110m.

CO-ORDINATES

Point ID	Latitude	Longitude
1	25° 11' 16.35910142" N	087° 41' 24.35095648" E
2	25° 11' 16.39331364" N	087° 41' 24.49001697" E
3	25° 11' 16.73870359" N	087° 41' 25.70438955" E
4	25° 11' 16.76654739" N	087° 41' 25.86640109" E
5	25° 11' 16.76439668" N	087° 41' 25.52240699" E
6	25° 11' 16.70224226" N	087° 41' 27.19342389" E
7	25° 11' 16.67009011" N	087° 41' 27.65243155" E
8	25° 11' 16.43702662" N	087° 41' 28.59135398" E
9	25° 11' 16.05840019" N	087° 41' 29.20929628" E
10	25° 11' 15.77994978" N	087° 41' 29.22724492" E
11	25° 11' 14.66345873" N	087° 41' 29.92032102" E
12	25° 11' 13.80326893" N	087° 41' 29.97517440" E
13	25° 11' 12.94408238" N	087° 41' 30.03224525" E
14	25° 11' 12.08289749" N	087° 41' 30.08837573" E
15	25° 11' 11.22269937" N	087° 41' 30.14449549" E
16	25° 11' 11.78066302" N	087° 41' 28.97775074" E
17	25° 11' 11.82925234" N	087° 41' 28.74815452" E
18	25° 11' 11.89965415" N	087° 41' 27.57551404" E

19	25° 11' 11.97104718" N	087° 41' 26.31288203" E
20	25° 11' 12.04305114" N	087° 41' 25.29131814" E
21	25° 11' 12.11505319" N	087° 41' 24.26974671" E
22	25° 11' 12.18705327" N	087° 41' 23.24817848" E
23	25° 11' 12.25905790" N	087° 41' 22.22660989" E
24	25° 11' 12.76682424" N	087° 41' 22.60840299" E
25	25° 11' 13.42556108" N	087° 41' 23.10118953" E
26	25° 11' 14.12384398" N	087° 41' 23.62355095" E
27	25° 11' 14.82212305" N	087° 41' 24.14591759" E
28	25° 11' 14.66982036" N	087° 41' 23.30063839" E
29	25° 11' 15.12398793" N	087° 41' 23.24931064" E
30	25° 11' 15.56334281" N	087° 41' 23.19965771" E
31	25° 11' 15.82733818" N	087° 41' 23.15477565" E
32	25° 11' 16.15225590" N	087° 41' 23.25576202" E
33	25° 11' 16.25884917" N	087° 41' 23.73736179" E

LAND DETAILS

Khata no.	Plot no.
01	41 (P) & 42
06	32
32	29 (P) & 33 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	The Letter of Intent (LOI) has been issued by District Mining Officer, Sahibganj vide letter no. 779/M, dated 05.05.2025.
2	CO	The CO, Borio vide letter no. 118/Ra., dated 29.02.2020 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatyan & Register II.

3	DMD Cluster	DMD, Sahibganj, vide memo no. 821/M, dated 10.05.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFD Wild Life	DFD, Jharkhand Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1829, dated 07.08.2024, certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFD Territorial	Divisional Forest Officer, Sahibganj, Forest Division vide letter no. 369, dated 01.02.2020, certifies that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	The DMD, Sahibganj has been certified vide memo no. 822/M, dated 10.05.2025 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 25.09.2020.
8	Mine Plan Approval	Approved by District Mining Officer, Sahibganj vide Letter No. 827/M, dated 10.05.2025.
9	Grid Certificate	DMD, Sahibganj vide memo no. 972/M, dated 05.04.2025 certified that said project falls under grid no. 16 and production is within the overall permissible production limit.
10	Qualification Person	Shri Malay Kumar Mukhooadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	Semi mechanized Method	Life of Mine = 10 year
2	Quarry Area	2.147 Ha	
3	Waste Generation	40700Cum	
4	Stripping Ratio	01:0.06	
5	Working Days	300	
6	Bench size	6 m x 6 m	
7	Elevation of Mine	255m - 223m AMSL	
8	Ground Level Elevation	223 m AMSL	
9	Ultimate Working Depth	188 m AMSL	
10	Water Table	175m AMSL	
11	Topography of Mine	Area represents gently sloping land	

12	Explosive Requirement	116.424 kg Nitro mix explosives/day, will be obtained from lessened vendors
13	Diesel/Fuel requirement	HSD – 384.18liters / day (115.254 KL/year)

Production Details

Year	Production of Stone / Year			Removal of O.B.
	Cum	T.F.	Tonnes	Cum
1st	42000	2.8	117600	15500
2nd	44900	2.8	125720	2100
3rd	46700	2.8	13070	17800
4th	52700	2.8	147560	5300
5th	50500	2.8	141400	0
Total	236800	2.8	663040	40700

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	2.136	2.147	2.147	Water body
2	Dumping	0	0.011	0	0	-
3	Garland Drain	0	0.036	0.036	0	-
4	Safety Zone	0	0.496	0.496	0.532	Plantation
5	Unutilized	2.679	0	0	0	-
	Total	2.679	2.679	2.679	2.679	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Green Belt/Safety Zone	0.532 Ha	1330

2	Along Approach Road	0.110 km	184		
TOTAL			1514		

- 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 184 X 800 = Rs. 147200 Gabion Plantation along approach road) 1430 X 400 = Rs. 20000 (Plantation within lease area/Gabion (Rs. 7) (also includes Fertilizer, Pesticides, Maintenance)	579200	67920
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		779200	571140

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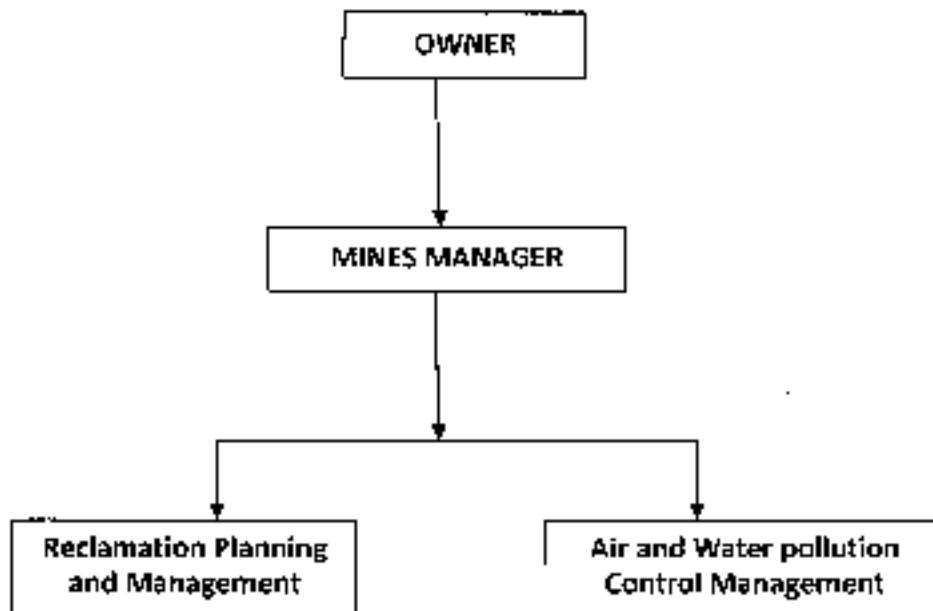
Environment Monitoring Programmed

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

40700cum. 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 quarry floor. Arrangements would be made for pumping out this water regularly during rainy season.
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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 machines & transport vehicles would be repaired & maintained regularly

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

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

- Regular water sprinkling on Haul Road by using water Tractors
- 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.

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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"

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 drilling 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.

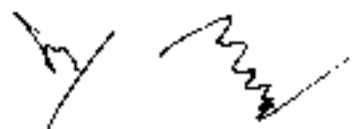
Health Hazards

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.

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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
- Overtaking 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 / tipplers/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 on to the main road (wherever required)

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

Undertaking submitted affirming:

- 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 Mine of Shri Shrivastav Kumar Yadav & Shri Pawan Kumar (Partners), Village : Parte Mako, Thana : Borio, Thana no. : 16, Distt. : Sahibganj, Jharkhand (2.679 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I 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. There 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 PLEET, Audiometry and other required tests. Summary findings of same to be 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. Borna Stone Mine of Shri Rakesh Ranjan, Village : Borna, Thana : Ranga, Distt. : Sahibganj, Jharkhand (3.385 Ha).

{Proposal no : SIA/JH/MIN/ 539045 /2025}

The PAs vide letter dated 26.05.2025 requested for withdrawal of the proposal due to the technical problem.

Hence, the Committee recommends the project may be delisted.

9. Stone Mine of M/s Jai Maa Serawali Stone Chips (Partner : Shri Amresh Yadav), Village : Rashida, Thana : Naudlha Bazar, Distt. : Palamau, Jharkhand (3.23 Ha).

(Proposal no.: SIA/JH/MIN/ 513696 /2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

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

The project has been granted EC by DEIAA, Palamau vide letter no EC/DEIAA/2016-17/45, dated 17.08.2017.

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, Palamau which has been taken up for consideration on 24.06.2025. 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 $\mu\text{g}/\text{m}^3$ PM_{2.5} -567 $\mu\text{g}/\text{m}^3$ SO₂ -18.2 NO₂ - 19.0 $\mu\text{g}/\text{m}^3$. 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. 593/M, dated 20.03.2025 by DMO, Palamau, Medininagar is within the permissible limit of EC.

The compliance report of previous EC has been issued by Member Secretary, JSPCB, Ranchi vide letter no.1388, dated 19.05.2025.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate regarding status of execution of compliance as no details have been provided. 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- 222660 TPA. / 74220 CUM PA.

Project and Location Details:

Sl. No.	Parameter	Details
1	Project Name	M/s Jai Maa Sherawali Stone Chips Mine

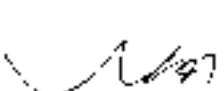
2	Lessee	: Shri Animesh Yadav
3	Lessee Address	: Vill- Tetariya, P.O- Kataiya, P.S - Harbargan, Dist- Palamu, Jharkhand
4	Mine Lease Area	: 3.23 Ha. 7.922 Acres
5	Type of Land	: Non-Forest (Barwadi Land)
6	Project Cost	: Rs. 98.34 Lakhs
7	EMF Budget	: Capital Rs. 12.792 Lakhs Returning: 6.31191 Lakhs / year
8	How of Expansion	: DFIAA to SEIAA i.e. appraisal of DFIAA FC
9	Mineral Reserves	: 31,09,575 Tonnes 19,36,375 CUM
10	Mine Life	: Upto the lease period i.e. 06.11.2017 to 05.11.2027
11	Man power	: 20
12	Water Requirement	: 6.4 KLD (Drinking: 0.80 KLD, Dust Suppression: 0.80 KLD, Plantation: 5.88 KLD)
13	Water Source	: Will be sourced from authorized vendor
14	DG Set / power	: 20 KVA
15	Crusher	: No Crusher
16	Nearest Water body	: River Barah is flowing at an aerial distance of 05 Km
17	Nearest Habitation	: Shouari village at an aerial distance of 0.31 km in S direction
18	Nearest Railway Station	: Japa Railway station is at 50 km (sea distance)
19	Nearest Air Port	: Birsa Munda Airport, Ranchi, 112 Km (aerial distance)
20	Nearest Forest	: More than 250m, as per DFO Termodia, Palamu, vide letter no. A, dated 24/11/2016
21	Road & Highways	: NH-38 is near about 20 km away from applied area
22	Approach Road	: 200m

CO-ORDINATES

Geo-Coordinates of all corner points of Demarcated Block Boundary (GPS Co-ordinates)		
S. No	Latitude	Longitude
01	24°19'47.4" N	87°17'14.8" E
02	24°19'51.8" N	87°17'19.10" E

LAND DETAILS

Khata no.	Plot no.
24	413, 415 & 416 (P)







STATUTORY CLEARANCES

1	LOI / Lease docs	i. The Letter of Intent (LoI) has been issued by DMO, Palamau, Medininagar vide letter no. 2313/M, dated 22.12.2016.
		ii. Lease deed : 06.11.2017 to 05.11.2027.
2	CO	The CO, Naudiha Bazar vide letter no 35, dated 27.09.2016 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in Khatiyani.
3	DMO Cluster	DMO, Palamau, Medininagar vide memo no. 1033/M, dated 05.05.2025 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 817, dated 19.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve.
5	DFO Territorial	Divisional Forest Officer, Medininagar Forest Division vide letter no. 04, dated 24.11.2016 certified that the distance of forest land is more than 250 meter from proposed project boundary.
6	DSR	This project is mentioned in approved DSR of Palamau District (Sl. no. 15, Page no. 69).
7	Gram Sabha	Gram Sabha conducted on 30.10.2016.
8	Scheme / Mine Plan Approval	i. Mining plan approved by Deputy Director, Mines, Daltonganj, Palamau vide Letter No. 06, dated 07.01.2017. ii. Mining scheme approved by Additional Director, Geology, Hazaribag vide Memo No. 799/G, dated 13.12.2021.
9	Previous Environmental Clearance (EC)	Previous EC granted by DEIAA, Palamau vide letter no. EC/DEIAA/2016-17/45, dated 17.08.2017.
10	Compliance report of EC	The compliance report of previous EC has been issued by Member Secretary, JSPCB, Ranchi vide letter no.1388, dated 19.05.2025.
11	Consent to Establish (CTE)	CTE issued by JSPCB vide Ref. no. JSPCB/HQ/RNC/CTE-2001039/2018 /107, dated 23.01.2018.
12	Consent to Operate (CTO)	CTO issued by JSPCB vide ref. no. : JSPCB/RO/RNC/CTO-11972401/2022/14, dated 06.01.2022.

13	Production Report	Production report issued by DMO, Palamau, Medinipur vide memo no. 593/M, dated 20.03.2023.
14	Qualified Person	Dr. Amarjeet Kumar Singh through e-mail dated 25.06.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	: Mechanized Method	
2	Quarry Area	: 2.14Ha	Life of Mine - Up to the lease period i.e. 06.11.2017 to 05.11.2027
3	Waste Generation	: 0 cum	
4	Stripping Ratio	: 1.0.00	
5	Working Days	: 300	
6	Bench size	: 5 m x 5 m	
7	Elevation of Mine	: 315 m AMSL to 309 m AMSL	
8	Ground Level Elevation	: 309 m AMSL	
9	Ultimate Working Depth	: 291 m AMSL	
10	Water Table	: 276 m AMSL	
11	Topography of Mine	: Area represents gently sloping land.	
12	Explosive Requirement	: 720 kg/day slurry explosives	
13	Diesel/Fuel requirement	: HSD - 314.58 liters / day (94.464 KI /year)	

Production Details

Years	Production of stone in Tones/Year	Production of stone in CUM/Year	OB in CUM/Year
1st	222660	74220	0
2nd	222660	74220	0
3rd	222660	74220	0
4th	222660	74220	0
5th	222660	74220	0
Total	1,113,300	371100	0

Land Use

Sl. No.	Pattern	Existing Land Use (Ha)	During Conceptual Period/after closure of Mines (Ha)	Area to be Converted In Conceptual Period
1.	Quarry	2.066	2.114	Water Body
2.	Infrastructure	0.016	0.000	-
3.	Garland Drain	0.048	0.048	-
4.	Safety Zone	1.068	1.068	Plantation
5.	Settling Tank	0.032	0.000	-
	Total	3.230	3.230	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	1.068 Ha	2670
2.	Along Approach Road	200m	264
TOTAL			2934 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 264 X 800 = Rs 2,11,200 (Gabion Plantation along approach road) 2670 X 400 = 1,068,000 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	12,79,200	1,27,920
3	Fencing	1,00,000	
4	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs (3 point) - Rs.27,270	--	2,03,220

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
	- Ground Water (2 point) Rs.12,420 - Noise 24 hrs (3 point) Rs. 21,000 - Soil (3 point) Rs. 40,520		
	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		13,79,200	6,31,140

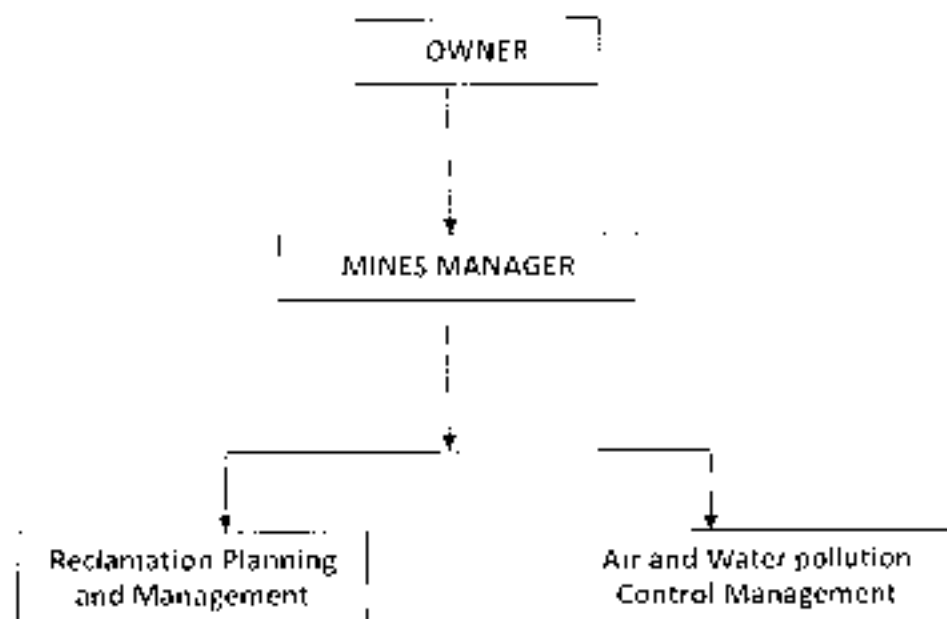
Environment Monitoring Programme

Sl. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	3 stations	6 Monthly
3.	Noise	3 stations	6 Monthly

Solid Waste Management

No OR will be generated

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 quarry 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.

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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:

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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.



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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:

- Shot 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.

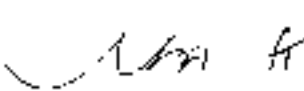
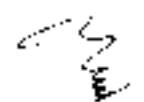
Handling of Explosives

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.

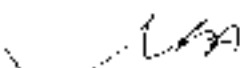
- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
-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

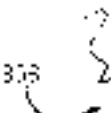
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger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

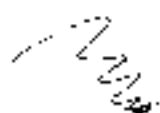
Undertaking submitted affirming:

- 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/or 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 then 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 Mine of M/s Jai Maa Serawali Stone Chips (Partner : Shri Amresh Yadav), Village : Rashida, Thana : Naudiha Bazar, Distt. - Palamau,

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Jharkhand (3.23 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I 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.

10. Shahpur Stone Mine of Shri Sai Minerals (Partners : (i) Shri Shyam Jaiswal (ii) Shri Shubham Agarwal (iii) Shri Nitin Gupta (iv) Shri Ramashish Singh), Village : Shahpur, Thana : Naudihia Bazar, Distt. : Palamau, Jharkhand (2.481 Ha).

{Proposal no.: SIA/JH/MIN/ 541368 /2025}

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.06.2025.

Project Sector: 1(a) Mining of Minerals. Category: B7.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 89320 Cum. (Max.) / 250096 TPA (Max).

Project and Location Details:

Sl. No.	Parameter	Details
1	Project Name	Shahpur Stone Mine
		Shri Sai Minerals
		Partner
2	Lessee	1. Shri Shyam Jaiswal, 2. Shri Shubham Agarwal 3. Shri Nitin Gupta, 4. Shri Ramashish Singh
3	Lessee Address	1. Shri Shyam Jaiswal, S/o Shri Umakant Prasad Jaiswal, R/o Vill + P.O. + P.S. - Chhatardur, Palamau 2. Shri Shubham Agarwal, S/o Shri Praveen Kumar Agarwal, R/o Vill - Dechi Muballa, Dargu, Rajkum Dist - Latehar. 3. Shri Nitin Gupta, S/o Shri Surendra Kumar Gupta, Tapia Road, Chhatardur, Palamau 4. Shri Ramashish Singh, S/o Shri Heera Prasad Singh, R/o Vill - Mahur, P.O. - Gulana, Fri, P.S. - Naudihia Bazar, Palamau
4	Mine Lease Area	2.481 Ha
5	Type of Land	Non Forest Revenue Land
6	Project Cost	Capital Cost: Rs. 133.485 Lakhs
7	EMP Budget	Capital Cost: Rs. 10.2087 Lakhs Recurring Cost: Rs. 5.961 Lakhs
8	New or Expansion	New
9	Mineable Reserves	CUM 4,31,387 tonnes, 12,07,884
10	Mine Life	5 years

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11	Man power	: 39 Person
12	Water Requirement	: 7.547 KLD(Drinking:0.585 KLD, Dust Suppression: 0.680 KLD KLD, Plantation: 6.282 KLD
13	Water Source	: Will be sourced from authorized vendors
14	DG Set / power	: 60 KVA D.G. Set proposed
15	Crusher	: No crusher
16	Nearest Water Body	: The nearest water source is Anjanat River flowing SE to NW at 22.00 km South Direction from the Mine site.
17	Nearest Habitation	: Karkata is at east direction 0.52 km.
18	Nearest Rail Station	: Kechkl Railway Station is at areal distance of 44.1 km in SW direction.
19	Nearest Air Port	: Birsa Munda Airport (Ranchi) is at areal distance of 149 km SE direction.
20	Nearest Forest	: More than 250 m, as per Division Forest Officer Medninagar, letter no.- 3673 Dated- 30/10/2023
21	Road & Highways	: The distance of Approach Road is 170m, after that this road connects to village road. The village road continues for 15.14 km and after this the road connects to MDR Aurangabad – Daltonganj Road.
22	Approach road	: The distance of Approach Road is 170m

CO-ORDINATES

Point Name	Latitude	Longitude
1	24° 17' 31.00353515" N	084° 19' 01.71858974" E
2	24° 17' 31.38461009" N	084° 19' 00.93500727" E
3	24° 17' 31.58271910" N	084° 19' 01.10318868" E
4	24° 17' 31.64605100" N	084° 19' 01.26913596" E
5	24° 17' 31.63078621" N	084° 19' 01.45701270" E
6	24° 17' 31.69867287" N	084° 19' 01.61779518" E
7	24° 17' 31.83506155" N	084° 19' 01.71123899" E
8	24° 17' 32.39247888" N	084° 19' 01.70458421" E
9	24° 17' 32.52305924" N	084° 19' 01.73225226" E
10	24° 17' 32.72205210" N	084° 19' 01.68751425" E
11	24° 17' 32.74393108" N	084° 19' 01.61101781" E
12	24° 17' 33.27697382" N	084° 19' 01.80256998" E
13	24° 17' 33.31315542" N	084° 19' 02.00964173" E
14	24° 17' 33.49493584" N	084° 19' 02.56848787" E
15	24° 17' 33.45645948" N	084° 19' 03.02044638" E
16	24° 17' 33.37403470" N	084° 19' 03.35167080" E
17	24° 17' 33.72113241" N	084° 19' 03.80059032" E
18	24° 17' 34.08985077" N	084° 19' 04.42140534" E
19	24° 17' 34.34013134" N	084° 19' 04.91291491" E

20	24° 17' 34.59236109" N	084° 19' 04.98871722" E
21	24° 17' 34.59500375" N	084° 19' 05.13830173" E
22	24° 17' 33.73420562" N	084° 19' 05.46306616" E
23	24° 17' 32.86367128" N	084° 19' 05.25306803" E
24	24° 17' 32.75189413" N	084° 19' 05.03120196" E
25	24° 17' 32.41761760" N	084° 19' 04.96354452" E
26	24° 17' 32.34213141" N	084° 19' 05.44661914" E
27	24° 17' 32.44395073" N	084° 19' 05.52047897" E
28	24° 17' 32.52912127" N	084° 19' 06.02056984" E
29	24° 17' 32.60889065" N	084° 19' 06.22810711" E
30	24° 17' 32.71775136" N	084° 19' 06.51322246" E
31	24° 17' 32.76802545" N	084° 19' 06.63495116" E
32	24° 17' 33.42601858" N	084° 19' 06.76853568" E
33	24° 17' 34.16377198" N	084° 19' 06.97606565" E
34	24° 17' 34.08777964" N	084° 19' 06.40853705" E
35	24° 17' 34.06546158" N	084° 19' 06.72129063" E
36	24° 17' 33.95273710" N	084° 19' 06.69034475" E
37	24° 17' 34.16563689" N	084° 19' 07.35393809" E
38	24° 17' 34.23979018" N	084° 19' 07.35041724" E
39	24° 17' 34.26653531" N	084° 19' 07.63621417" E
40	24° 17' 34.15610097" N	084° 19' 07.78404796" E
41	24° 17' 33.97173246" N	084° 19' 07.87206358" E
42	24° 17' 34.09178369" N	084° 19' 07.98763926" E
43	24° 17' 35.07757732" N	084° 19' 08.07214399" E
44	24° 17' 35.17407956" N	084° 19' 07.74293907" E
45	24° 17' 34.36536295" N	084° 19' 07.60991781" E
46	24° 17' 34.44405393" N	084° 19' 07.00029498" E
47	24° 17' 34.44546043" N	084° 19' 06.87533719" E
48	24° 17' 34.44320623" N	084° 19' 06.30099758" E
49	24° 17' 34.57705557" N	084° 19' 06.73059033" E
50	24° 17' 35.14894546" N	084° 19' 06.93445873" E
51	24° 17' 35.73017064" N	084° 19' 06.01308753" E
52	24° 17' 35.73733606" N	084° 19' 06.58715703" E
53	24° 17' 35.78285026" N	084° 19' 06.97551878" E
54	24° 17' 35.56260496" N	084° 19' 06.96392758" E
55	24° 17' 35.50943075" N	084° 19' 07.15321070" E
56	24° 17' 35.51689023" N	084° 19' 07.40610477" E
57	24° 17' 35.85718320" N	084° 19' 07.64875787" E
58	24° 17' 36.00822936" N	084° 19' 07.35702777" E
59	24° 17' 36.16378771" N	084° 19' 07.35041081" E
60	24° 17' 36.17148647" N	084° 19' 08.37717457" E
61	24° 17' 36.10281281" N	084° 19' 08.59797299" E
62	24° 17' 36.90004911" N	084° 19' 08.85350093" E
63	24° 17' 36.78351072" N	084° 19' 09.25284638" E
64	24° 17' 36.96514997" N	084° 19' 09.30092678" E
65	24° 17' 37.09643888" N	084° 19' 08.97633708" E
66	24° 17' 37.41417775" N	084° 19' 08.86169211" E
67	24° 17' 36.99435963" N	084° 19' 08.66909578" E

68	24° 17' 37.15911706" N	084° 19' 07.73798044" E
69	24° 17' 37.22948146" N	084° 19' 07.24986400" E
70	24° 17' 37.40837349" N	084° 19' 07.25603889" E
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72	24° 17' 37.91087824" N	084° 19' 07.08650686" E
73	24° 17' 38.03904158" N	084° 19' 07.27197933" F
74	24° 17' 38.14839675" N	084° 19' 07.40269493" E
75	24° 17' 38.09953210" N	084° 19' 07.66650681" E
76	24° 17' 38.04603962" N	084° 19' 08.00503378" E
77	24° 17' 37.87761192" N	084° 19' 08.90723252" E
78	24° 17' 37.77776723" N	084° 19' 09.35724084" E
79	24° 17' 37.49600235" N	084° 19' 10.24012460" E
80	24° 17' 37.21789640" N	084° 19' 11.06716994" E
81	24° 17' 37.04329428" N	084° 19' 11.44088612" E
82	24° 17' 36.71568120" N	084° 19' 11.30583429" E
83	24° 17' 35.51295157" N	084° 19' 11.07765063" E
84	24° 17' 35.18756768" N	084° 19' 10.80568636" E
85	24° 17' 34.46080382" N	084° 19' 10.69423034" E
86	24° 17' 33.22217116" N	084° 19' 10.53777063" E
87	24° 17' 33.29297837" N	084° 19' 09.81140180" E
88	24° 17' 33.22927576" N	084° 19' 09.09799798" E
89	24° 17' 33.10465813" N	084° 19' 08.35546019" E
90	24° 17' 32.83773011" N	084° 19' 07.59374810" E
91	24° 17' 32.46757507" N	084° 19' 07.53923975" E
92	24° 17' 32.15229839" N	084° 19' 07.57493495" E
93	24° 17' 32.01363285" N	084° 19' 07.15843794" E
94	24° 17' 31.87603715" N	084° 19' 07.01806593" E
95	24° 17' 31.75248369" N	084° 19' 06.70299011" E
96	24° 17' 31.68373528" N	084° 19' 06.47396669" E
97	24° 17' 31.66439610" N	084° 19' 05.80995928" E
98	24° 17' 31.61872046" N	084° 19' 05.27108331" E
99	24° 17' 31.58074713" N	084° 19' 05.05179569" E
100	24° 17' 31.64737844" N	084° 19' 04.63098249" E
101	24° 17' 31.65025845" N	084° 19' 04.36308014" E
102	24° 17' 31.49713758" N	084° 19' 03.88252365" E
103	24° 17' 31.76476055" N	084° 19' 03.30383925" E
104	24° 17' 31.99230444" N	084° 19' 03.14956106" E
105	24° 17' 31.81682215" N	084° 19' 02.48053231" F
106	24° 17' 31.31814186" N	084° 19' 02.26055159" E
107	24° 17' 31.10785705" N	084° 19' 02.20683797" E

LAND DETAILS

Khata no.	Plot no.
08, 66, 01, 80 & 82	1590/P, 1595, 1600, 1604, 1621, 1596, 1598, 1602/P, 1620, 1594, 1606/P, 1593, 1607/P, 1597, 1618 & 1599

STATUTORY CLEARANCES

1	LO / Lease docs	The Letter of Intent (LoI) has been issued by DMO, Palamau, Medininagar vide letter no. 191/M, dated 05.02.2024.
2	CO	The SDO, Chhatrapur, Palamau vide letter no. 1772, dated 15.09.2022 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatian & Register II.
3	DMO Cluster	DMO, Palamau Medininagar vide memo no. 1570/M, dated 10.06.2024 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild life	Deputy Director Palamau Tiger Project, South Division, Medininagar vide letter no. 963, dated 28.11.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve.
5	DFO Territorial	Division Forest Officer, Medininagar Forest Division vide letter no. 3673, dated 20.10.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project boundary.
6	DSP	The project is mentioned in approved DSR of Palamau District (S. no. 13 Page no. 104).
7	Gram Sabha	SDO, Naudaha Bazar, Palamau vide letter no. 501, dated 04.09.2023 informed that Gram Sabha conducted on 10.08.2023.
8	Mine Plan Approval	Mine plan approved by Assistant Director Geology District Geological Officer, Palamau, Jharkhand vide memo no. 89, Dated 17.06.2025.
9	Qualified Person	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mining scheme has been prepared by him.

Working Details

1	Mining Method	Open cast Semi Mechanized Method
2	Quarry Area	1.315 Ha
3	Waste Generation	3626 Cum
4	Stripping Ratio	1:0.03
5	Working Days	300
6	Bench size	6 m x 6 m
7	Elevation of Mine	307 m- 295 m AMSL

8	Ground Level Elevation	:	295 m AMSL
9	Ultimate Working Depth	:	270m AMSL
10	Water Table	:	267m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	83.15 kg slurry explosive. will be obtained from licenced Vendors
13	Diesel/Fuel requirement	:	HSD – 440 liters / day (132 KL/year)

Production Details

Year	Production of Stone / Year			Removal of O.B.
	Cum recoverable 95%	T.F.	Tonnes	Cum
1st	89123	2.8	249544	12382
2nd	89320	2.8	250096	18850
3rd	87145	2.8	244006	0
4th	83230	2.8	233044	0
5th	82569	2.8	231193	5029
Total	431387	2.8	1207884	36261

Land Use pattern

Sl. No.	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	Mining Activities	0	1.315	1.315	Water body
2	Dumping	0	0.200	0.200	OB used for backfilling & area under plantation
3	Garland Drain	0	0	0	
3	Safety Zone	0	0.966	0.966	Plantation
4	Unutilized	2.481	0	0	-
Total		2.481	2.481	2.481	-

ENVIRONMENT MANAGEMENT**Green Belt Development**

S. No	Location	Area/Length	No of Trees
1	Safety Zone/ Dumping/ Offices/ Store etc	1.156 Ha	1866
2	Along Approach Road	170 m	228
TOTAL			2094

- Gab on 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 228 X 200 = Rs 1,82,400 (Gabion Plantation along approach road) 1866 X 400 = 7,46,400 (Plantation within lease area) (also includes Fertilizer, Pesticides Maintenance)	9,28,800	92,880
3	Fencing	98,070	-
4	Environmental Monitoring (One Day Monitoring) - Ambient Air 24 hrs (3 point) Rs.77,270 - Ground Water (2 point) Rs.12,420 - Noise 24 hrs (3 point) Rs.21,600 - Soil (3 point) Rs.40,920 Total -Rs. 1,01,610	-	2,03,220

Sl. No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
	(Per Season) At least two seasons in a Year -Rs. $1,01,610 \times 2 = \text{Rs. } 2,03,220$ Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022		
Total		10,26,870	5,96,100

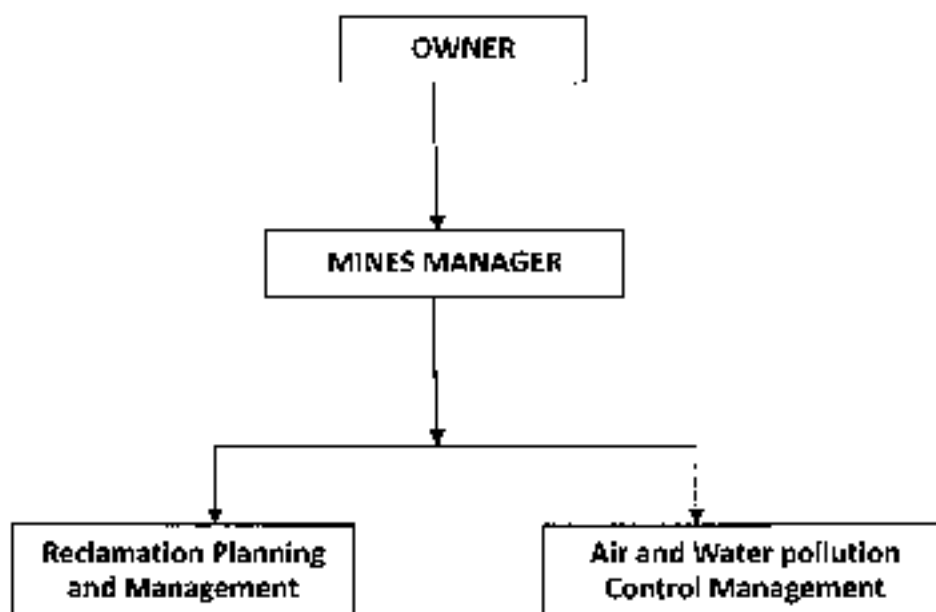
Environment Monitoring Programmed

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

36261cum. 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 quarry 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. Deslined 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 Siphon Tanks & sent out.

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.

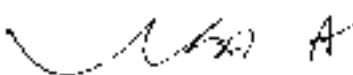
- Regular water sprinkling on Haul Road by using water Tankers.
- Regular repair of Haul Road.
- All Trucks carrying stone outside lease area will have PUC certificate.

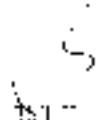
RISK ASSESSMENT

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

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Likely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5

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

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

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

Preventive Measures:

Slope Failure

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

Handwritten signature

Handwritten signatures and marks

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

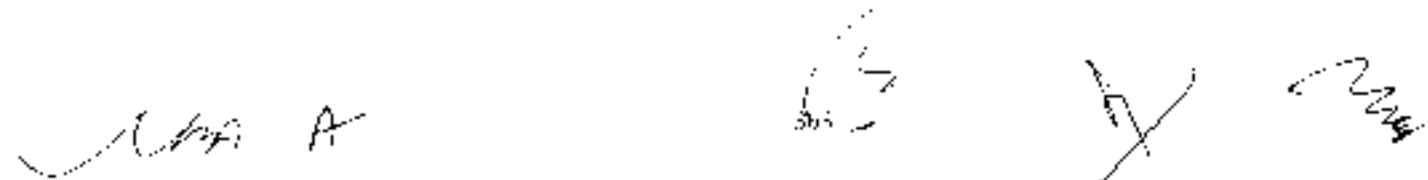
Noise Generation during drilling

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

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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.

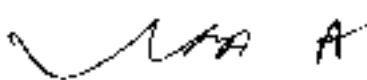
Handling of Explosives

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:

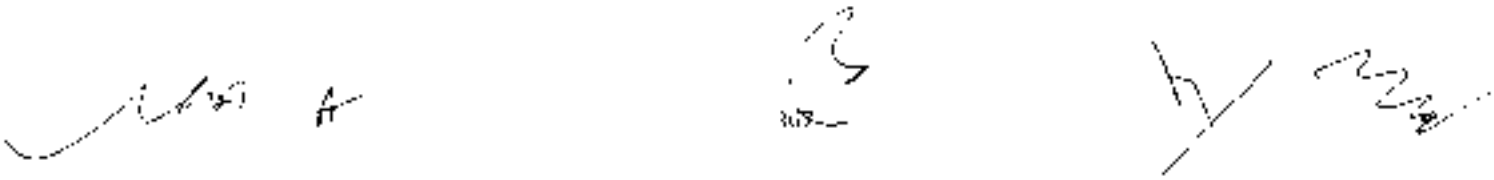
- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

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

- Mine road shall be made smooth regularly with a road roller.

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- Mine 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.

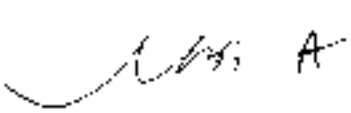
Undertaking submitted affirming:

- 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

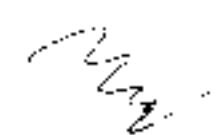
Based on the presentation made and information provided, the Committee in the light of Hon'ble MGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Shahpur Stone Mine of Shri Sai Minerals (Partners : (i) Shri Shyam Jaiswal (ii) Shri Shubham Agarwal (iii) Shri Nitin Gupta (iv) Shri Ramashish Singh), Village : Shahpur, Thana : Naudihia Bazar, Distt. : Palamau, Jharkhand (2.481 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - I along with following specific conditions :

- I. In compliance of OM no. F.No. IAB-22/3/2024-IABH (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 Ek Ase Naam" and the details of the same shall be uploaded in the Merit-L Portal (<https://merit-l.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 7 M height to be planted round to fence the area of saplings proposed in Safety zone. This is to be planted in and 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 PFT, Audiometry and other required tests. Summary findings of same to be 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. Dundu Stone Mine of Shri Ashok Prasad, Village : Dundu, Thana : Manika Distt. : Latehar, Jharkhand (2.096 Ha).

(Proposal No : SIA/JH/MIN/ 501851/2024)

The project authorities have submitted certified compliance report of the conditions of the previous EC vide letter dated 25.10.2023 issued by RO, JSPCB, Ranchi.

However, vide OM no. J-11013/6/2010-IA.II (Part) Dated 07.09.2017 issued by MoEF&CC, Govt. of India states that the project authorities are to request Regional Office of MoEF&CC, Govt. of India for issuance of certified compliance report. The above OM further states that if the CCR is not issued by the Regional Office, MoEF&CC, Govt. of India within one month from the date request, the project authorities may obtain CCR from JSPCB.

The project authorities have not requested the Regional Office, MoEF&CC, Govt. of India for issuance of CCR and directly obtained CCR from JSPCB.

Hence, the project authorities are required to obtain the CCR as required by OM no. J-11013/6/2010-IA.II (Part) Dated 07.09.2017 issued by MoEF&CC, Govt. of India.

Project will be taken up for consideration after a fresh CCR is obtained in compliance with OM no. J-11013/6/2010-IA.II (Part) Dated 07.09.2017 issued by MoEF&CC, Govt. of India.

12. Hethlikanhai Stone Deposit of M/s Shikhar Vision Stone Deposits (Partners : (i) Smt. Munni Hansda (ii) Shri Ranjeet Kisku (iii) Smt. Khusboo Marandi (iv) Shri Praveen Kumar Murmu (v) Shri Nawal Kisku), Village : Hethlikanhai, Thana : Tisri, Distt. : Giridih, Jharkhand (0.66 Ha).

(Proposal no.: SIA/JH/MIN/ 541393 /2025)

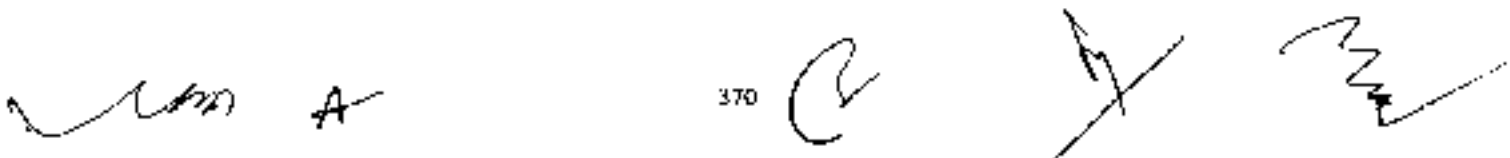
Name of the consultant : Salhi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.06.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 6559 Cum. (Max.) / 17708TPA (Max).

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Project and Location Details:

Sl	Parameter	Details
1	Project Name	Hetrlikantha Stone deposits M/S Shikhar Vision Stone Deposits Partners: 1. Smt. Murni Hansda 2. Smt. Ranjeet Kisku 3. Smt. Khushboo Marandi 4. Shri Praveen Kumar Murnu 5. Shri Nawal Kisku
2	Jessee	M/S Shikhar Vision Stone Deposits Partners: 1. Smt. Murni Hansda 2. Shri Ranjeet Kisku 3. Smt. Khushboo Marandi 4. Shri Praveen Kumar Murnu 5. Shri Nawal Kisku
3	Jessee Address	residing at Village - Jparili Kanhai, Thana - Isna, District - Gondia, Jharkhand
4	Mine Lease Area	0.66 Ha
5	Type of Land	Non Forest Raiyan Land
6	Project Cost	Capital Cost: Rs. 146.74 Lakhs
7	EMP Budget	Capital Cost: Rs. 10.944 Lakhs Recurring Cost: Rs. 6.0266 Lakhs
8	New or Expansion	New
9	Mineable Reserves	CUM: 32780 Tonnes: 88505
10	Mine Life	5 years.
11	Man power	18 Person
12	Water Requirement	7.65 KLD (Drinking: 0.27 KLD, Dust Suppression: 2.000 KLD) Plantation: 5.379 KLD
13	Water Source	From Nearby villages by tankers
14	DG Set / power	50 KVA D.G. Set proposed
15	Crusher	No crusher
16	Nearest Water Body	Saki River - 4.14 km - NE direction.
17	Nearest Habitation	Uparli Kanhai - 0.74 km in the W direction
18	Nearest Rail Station	Dhanwar Railway Station at areal distance of 12.00 km in South East direction
19	Nearest Air Port	Birsa Munda Airport, Ranchi is at areal distance of 167 km SW

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		direction
20	Nearest Forest	: More than 250 m, as per Division Forest Officer, Giridih, letter no -9146 Dated- 03/10/2020
21	Road & Highways	: The distance of Approach Road is 500m, after that this road connects to village MDR road
22	Approach Road	The distance of Approach Road is 500m.

CO-ORDINATES

Point Id	Latitude	Longitude
1	25° 13' 59.90608778" N	087° 35' 05.59793777" E
2	25° 14' 00.29287393" N	087° 35' 03.86232077" E
3	25° 14' 01.04960645" N	087° 35' 01.93405978" E
4	25° 14' 01.38996055" N	087° 35' 01.27809517" E
5	25° 14' 02.61426437" N	087° 35' 01.35742133" E
6	25° 14' 03.79956087" N	087° 35' 01.42437987" E
7	25° 14' 04.90257268" N	087° 35' 01.50351812" E
8	25° 14' 06.00558443" N	087° 35' 01.58265683" E
9	25° 14' 06.31988076" N	087° 35' 01.68510701" E
10	25° 14' 05.97775241" N	087° 35' 02.88735195" E
11	25° 14' 05.63562137" N	087° 35' 04.08959498" E
12	25° 14' 06.01246643" N	087° 35' 04.58596341" E
13	25° 14' 06.09952279" N	087° 35' 05.02237929" E
14	25° 14' 07.01510429" N	087° 35' 05.48878949" E
15	25° 14' 07.57586799" N	087° 35' 05.87541381" E
16	25° 14' 07.90530956" N	087° 35' 06.38457402" E
17	25° 14' 07.51496946" N	087° 35' 07.80133522" E
18	25° 14' 06.73330442" N	087° 35' 07.89520293" E
19	25° 14' 05.51653366" N	087° 35' 07.51552749" E
20	25° 14' 04.98415751" N	087° 35' 07.17751334" E
21	25° 14' 04.04434821" N	087° 35' 06.85089553" E
22	25° 14' 03.10453865" N	087° 35' 06.52427915" E
23	25° 14' 02.21213058" N	087° 35' 06.18487629" E
24	25° 14' 01.31972223" N	087° 35' 05.84547483" E

LAND DETAILS

Khata no.	Plot no.
15	188, 189, 190, 193 (P) & 194

STATUTORY CLEARANCES

1	LOI / Lease docs	The Letter of Intent (LOI) has been issued by District Mining Officer, Giridih vide letter no. 975/M, dated 09.12.2020.
2	CO	The CO, Giridih vide letter no. 311, dated 03.10.2020 has mentioned the plot no. of the project is not recorded as "Jungle- Jhar" in Shajyan.
3	DMO Cluster	DMO, Giridih vide memo no. 517/M, dated 26.05.2025 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. 34, dated 08.01.2021 certified that the proposed project site is outside Eco Sensitive Zone of Koduma Wildlife Sanctuary.
5	DFO Territorial	Division Forest Officer, Giridih East Forest Division vide letter no. 1946, dated 03.10.2020 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 Giridih District (Page no. 88, Sl. no. 24).
7	Gram Sabha	BDO, Jharia vide letter no. 612, dated 15.10.2020 informed that Gram Sabha conducted on 18.05.2020.
8	Mine Plan Approval	Approved by Assistant Mining Officer, Deputy Director of Mines Office, Dhanbad Circle Dhanbad vide Memo No. 152/DDM, dated 28.12.2023.
9	Qualified Person	Shri Tapan Kumar Chakravarty through e-mail dated 24.06.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	Open cast Semi-Mechanized Method
2	Quarry Area	0.25Ha Life of Mine - 05years
3	Waste Generation	0936cum
4	Stripping Ratio	01:0.11
5	Working Days	300
6	Bench size	6 m x 6 m
7	Elevation of Mine	283m-277m AMSL
8	Ground Level	277 m AMSL

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	Elevation		
9	Ultimate Working Depth	:	272 m AMSL
10	Water Table	:	254 m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	9.0 kg slurry explosive. will be obtained from licenced Vendors
13	Diesel/Fuel requirement	:	HSD – 273.3 liters / day (81.99KL/year)

Production Details

Year	Production of Stone / Year			Removal of O.B.
	Cum recoverable 95%	T.F.	Tonnes	Cum
1st	6555	2.7	17699	1967
2nd	6555	2.7	17699	1967
3rd	6556	2.7	17700	1967
4th	6555	2.7	17699	1967
5th	6559	2.7	17708	1968
Total	32780	2.7	88505	9836

Land Use pattern

Sl. No.	Pattern of Utilization	Present/Existing land use pattern in (Ha.)	Plan Period Land use in (Ha.)	Land Use at the conceptual period in (Ha.)	Area to be converted in the conceptual period
1	Quarry	0.00	0.28	0.28	Waterbody- 0.15 Ha., Plantation- 0.08 Ha., Rehabilitated Area- 0.05 Ha.
2	Plantation (In Safety Zone)	0.00	0.38	0.38	Green Belt
6	Balance area unused	0.66	0.00	0.00	-
	Total	0.66	0.66	0.66	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.28 Ha	950
2	Along Approach Road	500m	668
3	Other Plantations	0.08 Ha	200
TOTAL			1818

- 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/e, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCL, 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: 668x800 = Rs. 534,400 (Gabion Plantation along approach road) 1150x400 = Rs. 460,000 (Safety Zone & other Plantations) (also includes Fertilizer, Pesticides, Maintenance)	9,94,400	99,440
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.46,920 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

Source: Central Pollution Control Board
Notification, New Delhi, the 23rd February,
2022

Sl. No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
Total		Rs 10,94,400	Rs 6,02,660

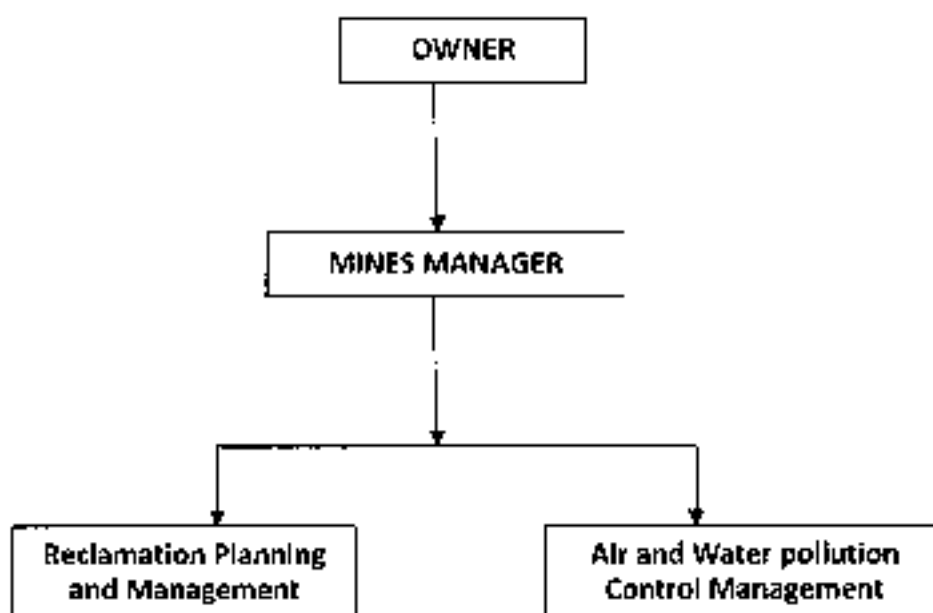
Environment Monitoring Programmed

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

9836cum. 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 quarry 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 desliting.
- 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 Haul Road by using water Tankers
- Regular repair of Haul Road
- All Trucks carrying stone outside lease area will have PJC 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.	Very Unlikely	Minor	20

		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 slides 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.

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- 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 drilling 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

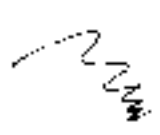
Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground

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:

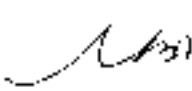
- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overtaking vehicles

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

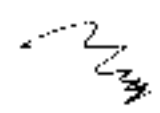
The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipments are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator 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/unloading operations
- Only trained drivers will be hired

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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 Hethlikanhal Stone Deposit of M/s Shikhar Vision Stone Deposits (Partners : (i) Smt. Munni Hansda (ii) Shri Ranjeet Kisku (iii) Smt. Khusboo Marandi (iv) Shri Praveen Kumar Murmu (v) Shri Nawal Kisku), Village : Hethlikanhai, Thana : Tisri, Distt. : Giridih, Jharkhand (0.66 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I 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 Mo Ke Noom" 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 at the time with Geo-Tagged photographs.
- V. Pre-employment Occupational health check up for employees to be done and thereafter at annual interval for PFT, Audiometry and other required tests. Summary findings of same to be submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPLs 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. Violation of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

13. Goedaha Stone Mine of M/s Viraaj Engicon Pvt. Ltd. (Director : Shri Ajit Kumar Singh),
Village : Goedaha, Thana : Mohanpur, Distt. : Deoghar, Jharkhand (2.853 Ha).

(Proposal no.: SIA/JH/MIN/ 541618 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.06.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 181288 Cum. (Max.) / 507606 TPA (Max).

Project and Location Details:

Sl. No.	Parameter	Details
1	Project Name	Goedaha Stone Mine
2	Lessee:	M/s Viraaaj Engicon Pvt. Ltd. Director- Shri Ajit Kumar Singh
3	Lessee Address	Shri Ajit Kumar Singh, S/o- Govardhan Prasad Singh, R/o Sakin-Narodih, PO +PS- Chakai, Dist.- Jamui, Bihar.
4	Mine Lease Area	2.853 Ha
5	Type of Land	Non-Forest Raiyati Land
6	Project Cost	Capital Cost: Rs. 322.86 Lakhs
7	EMP Budget	Capital Cost: Rs. 12.64 Lakhs Recurring Cost: Rs. 6.0962 Lakhs
8	New or Expansion	New
9	Mineable Reserves	CUM.: 897056 Tonnes: 2511757
10	Mine Life	5 years.
11	Man power	45 Person
12	Water Requirement	8.066 KLD ~ Say (8 KLD) (Drinking: 0.675 KLD, Dust Suppression: 1.064 KLD, Plantation: 6.327 KLD)
13	Water Source	From Nearby villages by tankers
14	DG Set / power	60 KVA D.G. Set proposed
15	Crusher	No crusher
16	Nearest Water Body	The nearest water source is Dharwa River flowing South to North at 1.2 km NE Direction from the Mine site.
17	Nearest Habitation	Goedaha, 0.55 km in the East direction.
18	Nearest Rail Station	Kharadih Station is at aerial distance of 5.21 km SE direction.
19	Nearest Air Port	Deoghar airport is at aerial distance of 15.83 km SW direction.
20	Nearest Forest	More than 250 m, as per Division Forest Officer NOC. letter no.- 1004 Dated- 07-06-2023.
21	Road & Highways	An approach road of approximately 266 meters originates from the mine site and connects to a village road. The village road extends, which further connects to the Major District Road (MDR), specifically the Jamtara - Godda Road.
22	Approach road	An approach road of approximately 266 meters

CO-ORDINATES

Point Name	Latitude	Longitude
1	24° 33' 02.66160231" N	086° 48' 31.31550025" E
2	24° 33' 04.37714978" N	086° 48' 31.33925635" E
3	24° 33' 05.39011954" N	086° 48' 31.32666962" E
4	24° 33' 06.40308027" N	086° 48' 31.31408293" E
5	24° 33' 07.17983071" N	086° 48' 31.32236844" E
6	24° 33' 07.08479505" N	086° 48' 32.40228091" E
7	24° 33' 07.06205292" N	086° 48' 32.66395413" E
8	24° 33' 07.32543881" N	086° 48' 32.92719719" E
9	24° 33' 07.54777505" N	086° 48' 33.12577717" E
10	24° 33' 07.82434290" N	086° 48' 33.41453555" E
11	24° 33' 08.00513357" N	086° 48' 33.45367897" E
12	24° 33' 08.11500200" N	086° 48' 33.73726281" E
13	24° 33' 08.20356329" N	086° 48' 33.99219665" E
14	24° 33' 08.49910657" N	086° 48' 34.01626375" E
15	24° 33' 08.80339825" N	086° 48' 34.03070337" E
16	24° 33' 08.91599325" N	086° 48' 34.08463243" E
17	24° 33' 09.36031738" N	086° 48' 34.43504515" E
18	24° 33' 09.74775609" N	086° 48' 34.90221154" E
19	24° 33' 09.51171436" N	086° 48' 35.31370998" E
20	24° 33' 09.28433823" N	086° 48' 35.88977270" E
21	24° 33' 09.96695877" N	086° 48' 36.46383714" E
22	24° 33' 10.1132947" N	086° 48' 37.59981607" E
23	24° 33' 09.88922328" N	086° 48' 37.67938298" E
24	24° 33' 09.56960587" N	086° 48' 37.85989110" E
25	24° 33' 09.42387667" N	086° 48' 37.93153346" E
26	24° 33' 09.14657727" N	086° 48' 37.94895361" E
27	24° 33' 08.93045447" N	086° 48' 38.10114285" E
28	24° 33' 08.78276629" N	086° 48' 38.33947154" E
29	24° 33' 08.69896354" N	086° 48' 38.60992553" E
30	24° 33' 08.60366533" N	086° 48' 38.74483603" E
31	24° 33' 08.86127429" N	086° 48' 38.82773817" E
32	24° 33' 08.85443321" N	086° 48' 39.16226189" E
33	24° 33' 08.65767018" N	086° 48' 39.69626600" E
34	24° 33' 08.71145228" N	086° 48' 39.84548850" E
35	24° 33' 08.82966807" N	086° 48' 40.09487553" E
36	24° 33' 08.74775565" N	086° 48' 40.27868864" E
37	24° 33' 08.47517694" N	086° 48' 40.27281209" E
38	24° 33' 08.22932394" N	086° 48' 40.13766560" E
39	24° 33' 08.27581096" N	086° 48' 39.77287626" E
40	24° 33' 08.08972592" N	086° 48' 39.68564065" E
41	24° 33' 07.72414086" N	086° 48' 39.59758727" E
42	24° 33' 07.50360128" N	086° 48' 39.27026707" E
43	24° 33' 07.24389944" N	086° 48' 39.19299410" E

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44	24° 33' 07.29506293" N	086° 48' 30.06328266" E
45	24° 33' 07.44830389" N	086° 48' 38.82260574" E
46	24° 33' 07.55803726" N	086° 48' 38.56056589" E
47	24° 33' 07.70257405" N	086° 48' 38.17493524" E
48	24° 33' 07.32317740" N	086° 48' 38.11534790" E
49	24° 33' 06.90381363" N	086° 48' 38.33431753" E
50	24° 33' 06.50258169" N	086° 48' 38.11501264" E
51	24° 33' 06.01220801" N	086° 48' 37.81657130" E
52	24° 33' 05.59645952" N	086° 48' 37.53864658" E
53	24° 33' 04.77025776" N	086° 48' 37.07513198" E
54	24° 33' 04.33416283" N	086° 48' 36.67666289" E
55	24° 33' 04.47759300" N	086° 48' 36.31955211" E
56	24° 33' 04.56515821" N	086° 48' 36.07887516" E
57	24° 33' 04.61332032" N	086° 48' 35.79728210" E
58	24° 33' 04.14045642" N	086° 48' 35.76117833" E
59	24° 33' 03.59753965" N	086° 48' 35.67453606" E
60	24° 33' 02.95391767" N	086° 48' 35.52576712" E
61	24° 33' 02.59475365" N	086° 48' 35.40918777" E
62	24° 33' 02.30810754" N	086° 48' 35.25334764" E
63	24° 33' 02.33136644" N	086° 48' 34.98424208" E
64	24° 33' 02.49213426" N	086° 48' 34.50288666" E
65	24° 33' 02.59475280" N	086° 48' 34.15691123" E
66	24° 33' 02.74033425" N	086° 48' 33.84393314" E
67	24° 33' 03.04499265" N	086° 48' 33.95031339" E
68	24° 33' 03.25877867" N	086° 48' 33.52774521" E
69	24° 33' 03.48860109" N	086° 48' 33.11005321" E
70	24° 33' 03.51831776" N	086° 48' 32.61882733" E
71	24° 33' 03.51831712" N	086° 48' 32.26157058" E

LAND DETAILS

Khata no.	Plot no.
04	04, 13, 14, 15, 16, 17 & 18

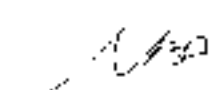
STATUTORY CLEARANCES

1	LOI / Lease docs	: The Letter of Intent (LoI) has been issued by District Mining Officer, Deoghar vide letter no. 612/M, dated 28.05.2025.
2	CO	: The CO, Mohanpur vide letter no. 670/Ra., dated 07.06.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II and also mentioned that the River at a distance of 250 meters of proposed project site, accordingly PAs has submitted EMP for the same.

3	DMO Cluster	DMO, Deoghar vide memo no. 683/M, dated 14.06.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	DFO, Wild life Division, Patanibag vide letter no. 1216, dated 26.06.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnathi & Jopcharchi Wildlife Sanctuary
5	DFO Territorial	Divisional Forest Officer, Deoghar Forest Division vide letter no. 1004, dated 07/06/2023 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 Deoghar District (Sl. no. 48, Page no. 48)
7	Gram Sabha	BDO, Mohanpur vide letter no. 794/vi, dated 07.06.2023 informme that Gram Sabha conducted on 05.06.2023
8	Mine Plan Approval	Approved by The Assistant Director, Geology, District Geological Office, Deoghar vide Letter No. 93, dated 13.06.2025
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	Open cast Semi Mechanized Method
2	Quarry Area	2.140 Ha. Life of Mine - 5 years
3	Waste Generation	57936 cum
4	Stripping Ratio	1:0.02
5	Working Days	400
6	Bench size	6 m x 6 m
7	Elevation of Mine	217 m - 211 m AMSL
8	Ground level Elevation	211 m AMSL
9	Ultimate Working Depth	170 m AMSL
10	Water Table	100m AMSL
11	Topography of Mine	Area represents gently sloping land.
12	Explosive Requirement	165.32 kg Nitro m x explosives Will be obtained from licenced vendors
13	Diesel/Fuel requirement	HSD - 453.48 liters / day (135.044 KL/year)







Production Details

Year	Production of Stone / Year			Removal of O.B.
	Cum recoverable	T.F.	Tonnes	Cum
1st	180064	2.8	504179	57936
2nd	181288	2.8	507606	0
3rd	180200	2.8	504560	0
4th	179520	2.8	502656	0
5th	175984	2.8	492755	0
Total	897056		2511757	57936

Land Use pattern

Sl. No.	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	Mining Quarry	0.00	2.140	2.140	Water body
2	Dumping	0.00	0.075	0.075	OB used for backfilling & area under plantation
3	Garland drain	0.00	0.039	0.000	-
4	Settling Tank	0.00	0.012	0.012	-
5	Safety Zone	0.00	0.584	0.623	Green Belt
6	Unutilized	2.853	0.003	0.003	Plantation
Total		2.853	2.853	2.853	-

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Location	No. of Plants	Area to be Covered (Ha)
1 st Year	Within 7.5m in Safety	1558	0.623

Zone Area			
Dumping & Unutilized	-	195	0.078
Approach road	266m	356	-
Total		2109	0.701

- 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 low mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by FCCF 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	Fencing	2,00,000	
3	Plantation 356 X 800 = Rs. 284800 (Gabion Plantation along approach road) 1558 X 400 = 701200 (Plantation within lease area) 195 X 400 = 78000 (Plantation in dumping area & Unutilized area) (also includes Fertilizer, Pesticides, Maintenance)	10,64,000	1,05,400
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		12,64,000	6,09,620

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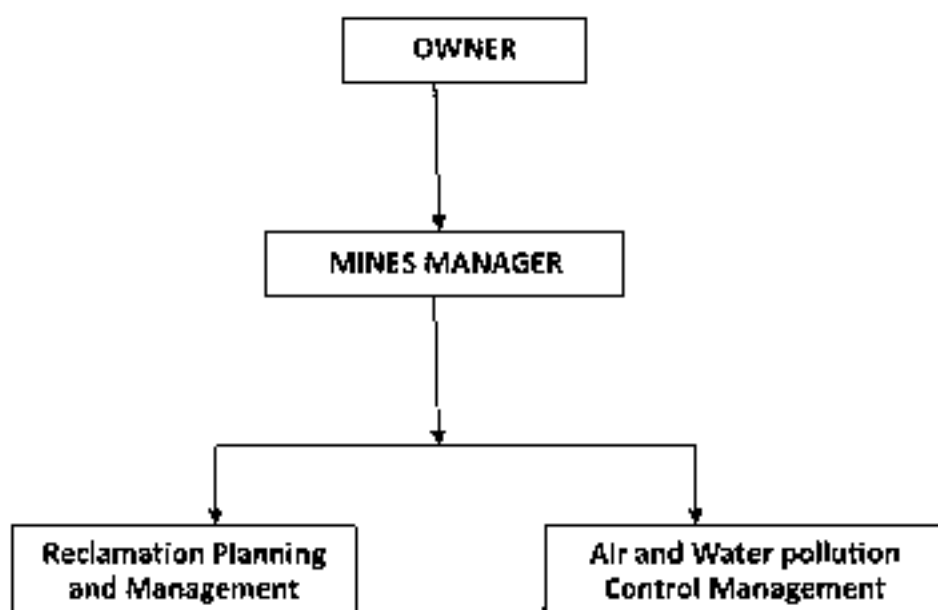
Environment Monitoring Programmed

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

57936 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 quarry 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 machines & transport vehicles would be repaired & maintained regularly

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

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

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

RISK ASSESSMENT

The hazard identification and risk analysis 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/Tipping (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

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

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

Preventive Measures:

Slope Failure

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

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

Control Measures

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

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

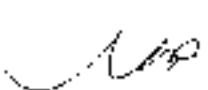
Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

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.

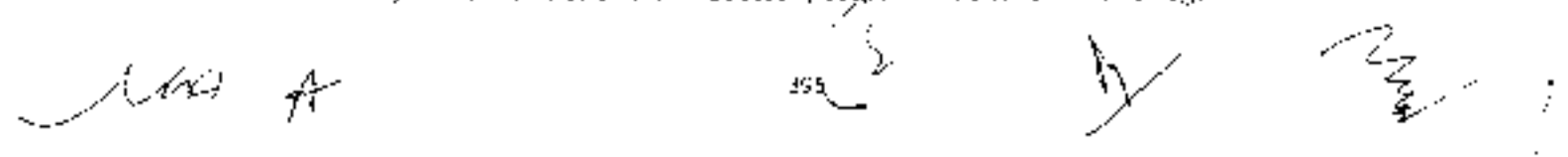
Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipments 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 1952
- 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/spottng 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 Goedaha Stone Mine of M/s ViraaJ Engicon Pvt. Ltd. (Director : Shri Ajit Kumar Singh), Village : Goedaha, Thana : Mohanpur, Distt. : Deoghar, Jharkhand (2.853 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I 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.mca.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 be 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. Breach of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

14. Sialpahari Stone Mine of M/s Shivay Minerals & Mining (Prop. : Shri Saral Kumar), Village : Sialpahari, Thana : Shrikripara, Distt. : Dumka, Jharkhand (1.764 Ha).

(Proposal no. : SIA/JH/MIN/ 539969 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand

This is a new project which has been taken for appraisal on 24.06.2025.

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: 56818 CUM. (MAX.) / 153408 TONS (MAX.) per year.

Monitoring Period- October 2025 to December 2025.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Sialpahari Stone Mine
		M/s Shivay Minerals & Mining
2	Lessee	Shri Saral Kumar, S/o Shri Ranjit Choudhary (Proponent)
3	Lessee Address	R/o Vill - Gauryan Bag, Kora Hanuman Mandir, P.O. : P.S. : Dist.

			– Ramgarh, Jharkhand, 829122.
4	Mine Lease Area	:	1.764 Ha
5	Type of Land	:	Non-Forest Raiyati Land
6	Project Cost	:	Capital Cost: Rs. 144.54 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 6.45 Lakhs Recurring Cost: Rs. 3.57 Lakhs
8	New or Expansion	:	New
9	Mineable Reserves	:	2,67,108cum 7,21,191tons
10	Mine Life	:	05years
11	Man power	:	22 Person
12	Water Requirement	:	4.418 KLD (Drinking: 0.330 KLD, Dust Suppression: 0.200 KLD, Plantation: 3.888 KLD).
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	60 KVA D.G. Set proposed
15	Crusher	:	No crusher
16	Nearest Water Body	:	Brahmani river at 8 km N direction
17	Nearest Habitation	:	Sialpahari Village – 0.500 Km in NW Direction
18	Nearest Rail Station	:	Pinergaria Railway Station at aerial distance of 5.06 km at NW direction.
19	Nearest Air Port	:	Deoghar Airport is at aerial distance of 101.23 km at North West direction.
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer NOC. letter no.-309 Dated- 11/02/2025
21	Road & Highways	:	Approach Road is 50m starts from SE side of the lease area, after that, this road connects to village road.
22	Approach Road	:	Approach Road is 50m.

CO-ORDINATES

Point ID	Latitude	Longitude
1	24° 09' 56.76534622" N	087° 39' 78.67331061" E
2	24° 09' 56.81680105" N	087° 39' 27.62803635" E
3	24° 09' 57.31188531" N	087° 39' 26.73449585" E
4	24° 09' 57.89614854" N	087° 39' 25.67999710" E
5	24° 09' 58.48040979" N	087° 39' 24.62549565" E
6	24° 09' 58.99526121" N	087° 39' 24.84054179" E
7	24° 09' 59.18138639" N	087° 39' 23.95340388" E

8	24° 09' 59.35086941" N	087° 39' 23.75307791" E
9	24° 09' 59.45789127" N	087° 39' 23.18282251" E
10	24° 10' 00.56188916" N	087° 39' 23.58206641" E
11	24° 10' 01.87174079" N	087° 39' 24.01445555" E
12	24° 10' 02.75749931" N	087° 39' 24.12518832" E
13	24° 10' 03.55174768" N	087° 39' 24.27450719" E
14	24° 10' 02.98305764" N	087° 39' 24.54104539" E
15	24° 10' 02.49817047" N	087° 39' 24.82299371" E
16	24° 10' 02.00905784" N	087° 39' 25.74036660" E
17	24° 10' 02.42039820" N	087° 39' 26.03203604" E
18	24° 10' 01.38003632" N	087° 39' 26.73232661" E
19	24° 10' 01.17450669" N	087° 39' 26.33354948" E
20	24° 10' 00.70176624" N	087° 39' 26.46046712" E
21	24° 10' 00.18727266" N	087° 39' 26.63585099" E
22	24° 09' 59.77955816" N	087° 39' 26.77591896" E
23	24° 09' 59.67332184" N	087° 39' 27.60810955" E
24	24° 09' 59.05282822" N	087° 39' 28.07383709" E
25	24° 09' 59.55661343" N	087° 39' 28.47228683" E
26	24° 09' 58.24743482" N	087° 39' 29.18855732" E
27	24° 09' 58.72580002" N	087° 39' 29.62915792" E
28	24° 09' 58.37365465" N	087° 39' 29.75578499" E
29	24° 09' 57.95901018" N	087° 39' 29.90272415" E
30	24° 09' 57.37503311" N	087° 39' 29.53503596" E
31	24° 09' 56.83344862" N	087° 39' 29.05394694" E

LAND DETAILS

J.B. no.	Plot no.
08	143 (P) & 146 (P)
13	144
8/1	145
3	147 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	The letter of intent (LOI) has been issued by District Mining Officer, Dumka vide letter no. 647/M, dated 30.04.2025
2	CO	The CO Shikarpur vide letter no. 180/Ra., dated 03.03.2025 has mentioned the plot no. of the project is not recorded as Jungle-land in R.S. Khatriyan & Register II

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3	DMO Cluster	DMO, Dumka vide memo no. 755/M, dated 30.05.2025 certified that 03 Lol (4.358 Acre, 7.16 Acre & 7.15 Acre) exists within 500 meters radius from proposed project site and total area is 23.031 Acre.
4	DFO Wild Life	DFO, Wildlife Division, Hazaribag vide letter no. 200, dated 15.02.2025 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. 309, dated 11.02.2025 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. 651/M, dated 02.05.2025 that this project is mentioned in approved DSR of Dumka District as a potential area (Page no. 318, Sl. no. 78).
7	Gram Sabha	Gram Sabha conducted on 19.01.2025.
8	Mine Plan Approval	Approved by District Mining Officer, Dumka vide Letter No. 675/M, dated 09.05.2025.
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 Semi-Mechanized Method
2	Quarry Area	1.273 Ha Life of Mine – 05year
3	Waste Generation	32394 cum (During Mine Plan Period)
4	Stripping Ratio	1:0.04
5	Working Days	300
6	Bench: size	6 m x 6 m,
7	Elevation of Mine	65mAMSL –62 mAMSL
8	Ground Level Elevation	62 m AMSL
9	Ultimate Working Depth	31m AMSL
10	Water Table	13 mAMSL
11	Topography of Mine	Area represents gently sloping land.
12	Explosive Requirement	53.46 kg Nitro Mix Explosive to be obtained from Licensed Vendors.
13	Diesel/Fuel requirement	HSD – 273.3 liters / day (81.99 KL/year)

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Production Details

Year	Production of Stone / Year			Removal Of O.B.
	Cum	T.F.	Tonnes	Cum
1st	56818	2.7	153408	16532
2nd	56020	2.7	151253	0
3rd	56795	2.7	153346	7388
4th	52476	2.7	141685	7874
5th	45000	2.7	121499	0
Total	267108		721191	32394

Land Use

EXISTING, PROPOSED & CONCEPTUAL LAND USE

Sl. No.	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 Area	-	1.273	1.273	Water body
2	Gorland drain	-	0.033	-	-
3	Safety Zone	-	0.458	0.491	Plantation
4	Utilized	1.764	-	-	-
Total		1.764	1.764	1.764	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.4921Ha	1228
2	Along Approach Road	50 m	68
TOTAL			1296

- Gab on 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.

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2.

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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 (i) Gabion Plantation along approach road) = 68 X 800 = INR \$4,400 (ii) Plantation within lease area/Green Belt) = 1228 X 400 = INR 491,200 (also includes Fertilizer, Pesticides, Maintenance)	545,600	54,560
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	6,45,600	357,780

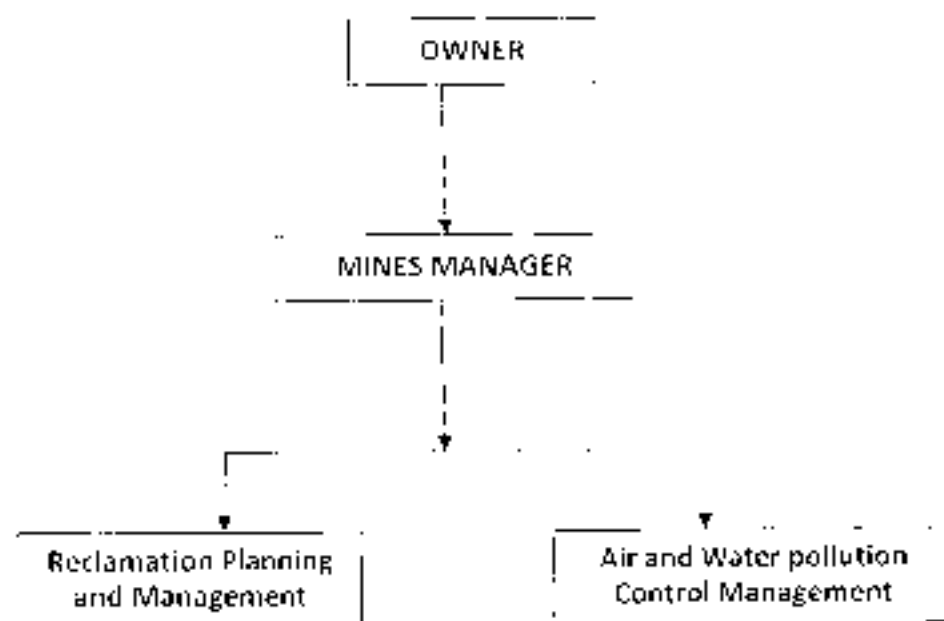
Environment Monitoring Programme

Sl. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	3 stations	6 Monthly
3.	Noise	3 stations	6 Monthly

Solid Waste Management

32394 cum O.E. will be used in maintenance of mine road and left over O.E. 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 quarry 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.
- Ear and 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

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- 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 Haul Road by using water Tankers.
- Regular repair of Haul Road
- All Trucks carrying stone outside lease area will have PUC certificate.

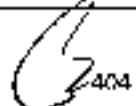
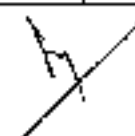
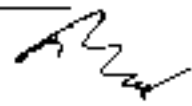
RISK ASSESSMENT

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

Hazard identification & Risk Analysis In Stone Mining operation

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

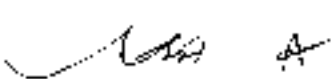
Control Measures

- 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

 A. K. Singh

 J. K. Singh

 M. K. Singh

 S. K. Singh

- 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.

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- 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.

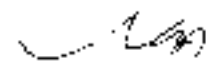
The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- 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.

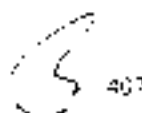
Health Hazards

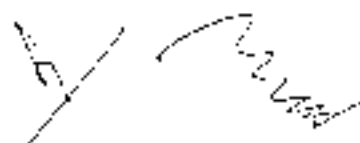
Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

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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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.

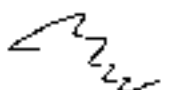
Transportation

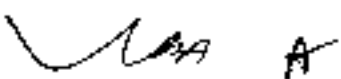
The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator 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


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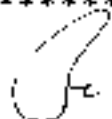


Undertaking submitted affirming.

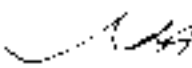
- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are 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.
- c. 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. Hereafter 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 (SFAC) during its meetings held during 23, 24, 25, 26 & 27.06.2025, 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 II alongwith following specific condition :-

1. In compliance of OM no. F.No. 143-22/3/2024-A III (F-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 Pad-Mo-se-Nagari" and the details of the same shall be uploaded in the ManiLife Portal (<https://manilife.nic.in/>). 10% of the total green belt proposed shall be allocated under this clause.


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15. Amchua Stone Mine of Shri Ravi Shankar Kumar, Village : Amchua, Thana : Shikaripara, Distt. : Dumka, Jharkhand (2.92 Ha).

(Proposal no.: SIA/JH/MIN/ 541214 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.06.2025.

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: 77825 CUM. (MAX.) / 210127 TONS (MAX.) per year.

Amchua Stone mines of area-2.92 ha falls within the same cluster with Amchua Stone mines area-2.869 ha of Mihir Kumar Mandal (SIA/JH/MIN/506645/2024 dated 13/12/2024 & Monitoring period- October 2024 to December 2024), therefore the baseline data used for Amchua Stone mines area-2.869 ha of Mihir Kumar Mandal will be used in this project.

Project and Location Details:

Sl	Parameter	Details	
1	Project Name	Amchua Stone Deposit	
2	Lessee:	Shri Ravishankar Kumar	
		Shri Ravishankar Kumar	
3	Lessee Address	S/o Shri Upendra Prasad Singh, R/o House No – 298, Ward No – 04, Near Singh Borewell, P.O.+P.S.+Dist.- Deoghar, 814112.	
4	Mine Lease Area	2.92 Ha	
5	Type of Land	Non-Forest Raiyat Land	
6	Project Cost	Capital Cost: Rs. 258.94 Lakhs	
7	EMP Budget	Capital Cost: Rs. 10.568 Lakhs	Recurring Cost: Rs. 5.989 Lakhs
8	New or Expansion	New	
9	Mineable Reserves	6,60,106 cum	17,82,285 tons
10	Mine Life	10 years	
11	Man power	37 Person	

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12	Water Requirement	: 6,298 KLD (Drinking 3,555 KLD, Fire suppression 1,600 KLD, Plantation 1,143 KLD)
13	Water Source	: From Nearby villages by tankers
14	DG Set / power	: 60 KVA D.G. Set proposed
15	Crusher	: No crusher
16	Nearest Water Body	: Brahmani river at 4.16 km N direction
17	Nearest Habitation	: Amchisua Village in NW Direction
18	Nearest Rail Station	: Pakdama Harising Railway Station at area distance of 4.37 km in NE direction.
19	Nearest Air Port	: Deoghar Airport is at area distance of 07.29 km NW direction.
20	Nearest Forest	: More than 250 m, as per Division Forest Officer NOC letter no. 903 Dated 22/04/2015
21	Road & Highways	: The distance of Approach Road is 400m, after that this road connects to village road. The village road continues for 3.09 km and after this the road connects to MDR Barasdjangal to Shikarpur.
22	Approach Road	: The distance of Approach Road is 400m

CO-ORDINATES

Point ID	Latitude	Longitude
1	24° 10' 32.04318054" N	087° 37' 12.06974304" E
2	24° 10' 32.81946037" N	087° 37' 12.27257575" E
3	24° 10' 33.56348664" N	087° 37' 11.45502451" E
4	24° 10' 33.90640958" N	087° 37' 11.09365881" E
5	24° 10' 34.32055727" N	087° 37' 10.70205392" E
6	24° 10' 34.76387398" N	087° 37' 10.35436540" E
7	24° 10' 34.91784649" N	087° 37' 10.91014193" E
8	24° 10' 35.24794679" N	087° 37' 10.65136412" E

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9	24° 10' 35.63860946" N	087° 37' 10.42528224" E
10	24° 10' 36.35477846" N	087° 37' 09.97575691" E
11	24° 10' 37.09872705" N	087° 37' 09.50492252" E
12	24° 10' 37.60626115" N	087° 37' 10.16763576" E
13	24° 10' 38.13479616" N	087° 37' 10.86855524" E
14	24° 10' 38.58060320" N	087° 37' 11.43858025" E
15	24° 10' 39.04768747" N	087° 37' 11.98287919" E
16	24° 10' 39.48472863" N	087° 37' 12.52703405" E
17	24° 10' 38.92536906" N	087° 37' 13.04057933" E
18	24° 10' 39.26899118" N	087° 37' 13.48599267" E
19	24° 10' 39.41874697" N	087° 37' 13.62537914" E
20	24° 10' 39.11003013" N	087° 37' 13.93403404" E
21	24° 10' 38.75301592" N	087° 37' 14.25721644" E
22	24° 10' 39.06238047" N	087° 37' 14.66298649" E
23	24° 10' 38.55777250" N	087° 37' 15.03089385" E
24	24° 10' 38.03095273" N	087° 37' 15.40185817" E
25	24° 10' 37.50974427" N	087° 37' 15.82560725" E
26	24° 10' 37.03599628" N	087° 37' 16.23743218" E
27	24° 10' 37.42218721" N	087° 37' 16.83193178" E
28	24° 10' 37.13644477" N	087° 37' 17.12981741" E
29	24° 10' 36.73443375" N	087° 37' 16.69706765" E
30	24° 10' 36.30258800" N	087° 37' 17.01509580" E
31	24° 10' 35.86007973" N	087° 37' 17.30542733" E
32	24° 10' 35.17723170" N	087° 37' 16.57714768" E
33	24° 10' 35.02881331" N	087° 37' 16.28842482" E
34	24° 10' 34.65503236" N	087° 37' 15.83044544" E
35	24° 10' 34.26794884" N	087° 37' 15.40375391" E
36	24° 10' 33.80429114" N	087° 37' 14.96498994" E
37	24° 10' 33.45852030" N	087° 37' 14.68906164" E
38	24° 10' 33.10097147" N	087° 37' 14.43978890" E
39	24° 10' 32.74875201" N	087° 37' 14.06977260" E
40	24° 10' 32.29726621" N	087° 37' 13.51200538" E

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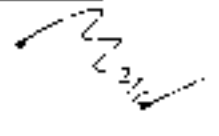
LAND DETAILS

J.B. no.	Plot no.
01	62
10	40, 50, 53, 55, 56 & 57
16	46 & 54
21	60
22	59
22	47
37	48
49	58

STATUTORY CLEARANCES

1	LOI / Lease docs	The Letter of Intent (LOI) has been issued by District Mining Officer, Dumka vide letter no. 662/M, dated 06.05.2025.
2	CO	The CO, Sutanupur vide letter no. 474/Ra., dated 22.04.2025 has mentioned the plot no. of the project is not recorded as "Jungle-land" in B.S. Khatriyan & Register I.
3	DMO Cluster	DMO, Dumka vide memo no. 760/M, dated 21.05.2025 certified that 01 other mining lease area (5.84 Acre) and 02 Lot (5.30 Acre & 7.09 Acre) exists within 500 meters radius from proposed project site and total area is 26.45 Acre.
4	DFO Wild Life	DFO, Wildlife Division, Hazaribag vide letter no. 814, dated 15.05.2025 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	Division Forest Officer, Dumka Forest Division vide letter no. 902, dated 22.04.2025 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. 788/M, dated 03.06.2025 that this project is mentioned in approved DSR of Dumka District as a potential area (Page no. 318, Sl. no. 46).
7	Gram Sabha	Gram Sabha conducted on 28.11.2024.
8	Mine Plan Approval	Approved by District Mining Officer, Dumka vide Letter No. /18/M, dated 21.05.2025.
9	Qualified Person	Shri Malay Kumar Mukhopadhyay was present in the meeting and

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		affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi-Mechanized Method
2	Quarry Area	:	2.389 Ha Life of Mine – 10 years
3	Waste Generation	:	22419 cum (During Mine Plan Period)
4	Stripping Ratio	:	1:0.02
5	Working Days	:	300
6	Bench size	:	6 m x 6 m
7	Elevation of Mine	:	90 m AMSL to 85 m AMSL
8	Ground Level Elevation	:	85 m AMSL
9	Ultimate Working Depth	:	42m AMSL
10	Water Table	:	28 m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	63.2 kg Nitro Mix Explosive to be obtained from Licensed Vendors.
13	Diesel/Fuel requirement	:	HSD 411.90 liters / day (123.57 KL/year)

Production Details

Year	Production of Stone / Year			Removal Of O.B.
	Cum	T.F.	Tonnes	Cum
1st	77825	2.7	210127	22419
2nd	70994	2.7	191682	0
3rd	64564	2.7	174323	0
4th	61751	2.7	166728	0
5th	58402	2.7	157686	0
Total	333536	2.7	900546	22419

Land Use

EXISTING, PROPOSED & CONCEPTUAL LAND USE

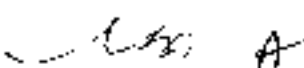
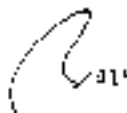
Sl. No.	Pattern of Utilization	Present/Existing land use pattern in (Ha)	Proposed Land use for current plan period (Ha)	Land to be used in remaining period of the life of the mine (Ha)	Land used at the conceptual stage i.e. end of mine life in (Ha)	Area to be converted in the conceptual period.
1	Quarry Area	0	1.236	2.389	2.389	Water body
2	Dumping	0	0.100	0	0	-
2	Garland Drain	0	0.036	0.036	0	-
3	Safety Zone	0	0.495	0.495	0.531	Plantation
4	Utilized	2.920	1.053	0	0	-
Total		2.920	2.920	2.920	2.920	-

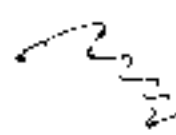
ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.531 Ha	1026
2	Along Approach Road	400 m	532
TOTAL			1860

- 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 P.O.F. 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 532 X 800 = Rs 425,600 (Gabion Plantation along approach road) 1328 X 400 = 531200 (Plantation within lease area/Green Belt) (also includes Fertilizer, Pesticides, Maintenance)	9,56,800	95680
3	Fencing	1,00,000	-
4	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs (3 point) - Rs.27,770 • 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 <i>Source: Central Pollution Control BoardNotification, New Delhi, the 23rd February, 2022</i>	..	2,03,220
Total		10,56,800	5,98,900

Environment Monitoring Programme

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	3 stations	6 Monthly

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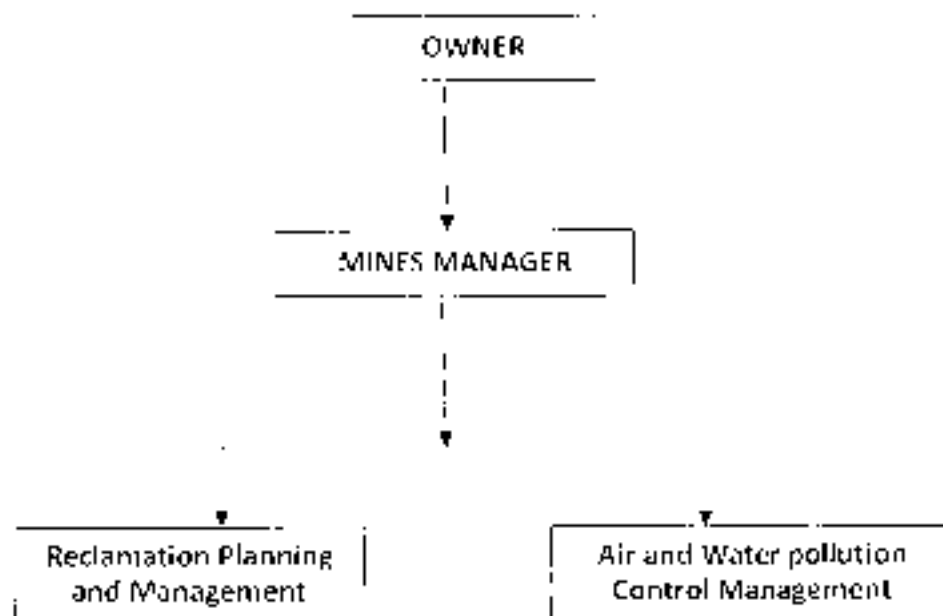
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3.	Noise	3 stations	6 Monthly

Solid Waste Management

22419 cum. O.R. will be used in maintenance of mine road and left over O.R. 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 quarry 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 settling
- 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 Haul Road by using water Tankers.
- Regular repair of Haul Road
- All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

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

Hazard identification & Risk Analysis In Stone Mining operation

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

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

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

Preventive Measures:

Slope Failure

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

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 205(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

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

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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

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Handling of Explosives

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

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

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

- Proper and safe storage of explosives in approved and licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lighters, mobile phones, cigarette or Bidri 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

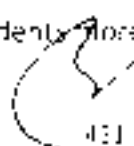
Health Hazards

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:



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

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

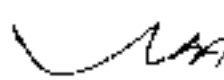
Transportation

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

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

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.

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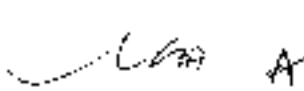




- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable 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. Slop of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.06.2025, 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 II alongwith following specific condition :-

- a. In compliance of OM no. F.No. 163 12/3/2024-IA III (E-741594) dated 29.07.2024 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 Pad Ma Ka Naam" and the details of the same shall be uploaded in the MeritIFF Portal (<https://meritiff.nic.in>) 10% of the total green belt proposed shall be allocated under this clause.

16. Kurunda Stone Mine of M/s ViraaJ Engicon Pvt. Ltd., Village : Kurunda, Thana : Shikaripara, Distt. : Dumka, Jharkhand (2.48 Ha).

(Proposal no.: SIA/JH/MIN/ 541790 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.06.2025.

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: 60500 CUM. / annum or 163349TPA

Chandipur Stone mines (Proposal No-SIA/JH/MIN/508058/2024 dated 13/12/2024, Monitoring Period- December 2024 to February 2025) falls within the same cluster with Kurunda Stone mines (2.48 Ha.) and the baseline data for both mines are the same. Therefore, undergo common EIA with Kurunda Stone mines Area 2.42 Ha.

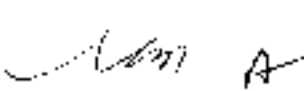
Project and Location Details:

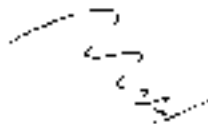
Sl	Parameter	Details
1	Project Name	: Kurunda Stone Mine
2	Lessee:	: Director: Shri Ravi Shankar Kumar, Partner: Shri Purushottam Sharan Prashant Partner: Shri Ajit Kumar Singh (Proponent of Partnership Firm: M/s ViraaJEngiconPvt. Ltd.)
3	Lessee Address	: Director: Shri Ravi Shankar Kumar S/o Shri Upendra Prasad Singh R/o House No: 298, Ward No.: 04, Near Singh Borewell, Williams Town, Shri Krishnapuri Deoghar, P.O + P.S.+ Dist.: Deoghar, 814112 Partner: Shri Purushottam Sharan Prashant S/o Late Kamla Sharan Singh R/o Vill.: Shrikant Road Belabagan, P.O.: Belabagan, P.S.+Dist.: Deoghar, State: Jharkhand Partner: Shri Ajit Kumar Singh
4	Miner Lease Area	: 2.48 Ha
5	Type of Land	: Non-Forest Raiyati Land
6	Project Cost	: Capital Cost: Rs. 135.685 Lakhs

7	FMP Budget	Capital Cost: Rs. 15,392 Lakhs Recurring Cost: Rs. 5,6714 Lakhs
8	New or Expansion	New
9	Minable Reserves	cum. 5,60,145 Cum Tones: 15,12,391 Tons
10	Mine Life	10 years
11	Man power	21 Person
12	Water Requirement	10.08KLD (Drinking: 0.315KLD, Dust Suppression: 1.56 KLD) Plantation: 8.714 KLD)
13	Water Source	From Nearby villages by tankers.
14	UG Set / power	20 KVA / 6 Set proposed
15	Crusher	Yes (250 TPH)
16	Nearest Water Body	Brahmani River flowing at 7.80 km in N direction.
17	Nearest Habitation	Purunda Village in the SE direction
18	Nearest Rail Station	Pinagaria Railway Station is at areal distance of 4.90 km NW direction
19	Nearest Air Port	Deoghar Airport is at areal distance of 102.20 km NW direction
20	Nearest Forest	More than 250 m, as per Division Forest Officer, Dumka. Letter no - 907 Dated- 22/04/2025
21	Road & Highways	NH-114A (Dumka-Rampurhat Road) is at areal distance of 2.20 km N Direction.
22	Approach Road	0.270 km

CO-ORDINATES

Point Name	Latitude	Longitude
1	24° 10' 37.00075225" N	087° 40' 14.04266187" E
2	24° 10' 36.84525645" N	087° 40' 14.29983772" E
3	24° 10' 36.72218409" N	087° 40' 14.25151335" E
4	24° 10' 36.46162798" N	087° 40' 14.75569761" E
5	24° 10' 36.15625952" N	087° 40' 15.35605382" E
6	24° 10' 36.64378412" N	087° 40' 15.39390852" E
7	24° 10' 36.04952445" N	087° 40' 16.03472217" E
8	24° 10' 35.97606845" N	087° 40' 16.50951509" E



9	24° 10' 35.91828050" N	087° 40' 17.15944201" E
10	24° 10' 35.89190408" N	087° 40' 17.79127348" E
11	24° 10' 35.86251361" N	087° 40' 17.96644933" E
12	24° 10' 36.00028142" N	087° 40' 18.02081424" E
13	24° 10' 36.08110519" N	087° 40' 18.09732783" E
14	24° 10' 35.94150049" N	087° 40' 18.44365248" E
15	24° 10' 35.72876398" N	087° 40' 19.26478925" E
16	24° 10' 36.13632710" N	087° 40' 19.30568878" E
17	24° 10' 36.07031338" N	087° 40' 19.74929140" E
18	24° 10' 35.64265905" N	087° 40' 19.71468410" E
19	24° 10' 35.57951543" N	087° 40' 19.88457447" E
20	24° 10' 35.98420851" N	087° 40' 20.04817259" E
21	24° 10' 36.27409483" N	087° 40' 20.20233237" E
22	24° 10' 36.69691939" N	087° 40' 20.49424521" E
23	24° 10' 36.99572171" N	087° 40' 20.72924942" E
24	24° 10' 37.24771712" N	087° 40' 21.04950692" E
25	24° 10' 37.49546528" N	087° 40' 21.48353244" E
26	24° 10' 37.54160283" N	087° 40' 21.68772610" E
27	24° 10' 37.47081029" N	087° 40' 22.30313954" E
28	24° 10' 36.92240626" N	087° 40' 22.20892635" E
29	24° 10' 37.00996908" N	087° 40' 22.65548219" E
30	24° 10' 37.06527005" N	087° 40' 23.22377679" E
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33	24° 10' 36.15628262" N	087° 40' 23.90986529" E
34	24° 10' 36.00072522" N	087° 40' 23.51297559" E
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37	24° 10' 36.27949073" N	087° 40' 22.60156186" E
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42	24° 10' 35.93052136" N	087° 40' 21.70739653" E
43	24° 10' 35.83132853" N	087° 40' 21.47986928" E
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45	24° 10' 35.32904685" N	087° 40' 20.79779030" E
46	24° 10' 35.07448092" N	087° 40' 21.40754720" E
47	24° 10' 34.73648979" N	087° 40' 21.69547991" E
48	24° 10' 34.65459902" N	087° 40' 21.96664205" E
49	24° 10' 34.37313272" N	087° 40' 21.85882582" E
50	24° 10' 34.35476361" N	087° 40' 21.78231223" E
51	24° 10' 33.77996616" N	087° 40' 21.60719335" E
52	24° 10' 33.32870682" N	087° 40' 21.41564018" E
53	24° 10' 32.93980085" N	087° 40' 20.77812383" E
54	24° 10' 33.18492312" N	087° 40' 20.51445124" E
55	24° 10' 33.25736423" N	087° 40' 20.19818151" E

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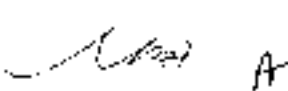
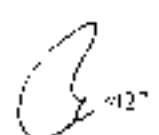
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58	24° 10' 32.35610276" N	087° 40' 18.92425756" E
59	24° 10' 32.21440686" N	087° 40' 18.58258505" E
60	24° 10' 32.64530351" N	087° 40' 17.88069402" E
61	24° 10' 33.07265053" N	087° 40' 17.15077584" E
62	24° 10' 32.65894105" N	087° 40' 16.72619140" E
63	24° 10' 33.13412835" N	087° 40' 15.88979131" E
64	24° 10' 33.51532401" N	087° 40' 15.05410375" E
65	24° 10' 33.91539075" N	087° 40' 14.11560782" E
66	24° 10' 34.28710817" N	087° 40' 12.96479645" E
67	24° 10' 34.97297339" N	087° 40' 13.05161923" E
68	24° 10' 35.69484394" N	087° 40' 13.47784019" E
69	24° 10' 36.55719214" N	087° 40' 14.00098693" E
70	24° 10' 36.64129578" N	087° 40' 13.86207047" E

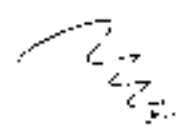
LAND DETAILS

Khata no.	Plot no.
06, 08, 10, 11, 12, 14 & 15	268/E, 269, 270, 271, Pl. 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 289, 290, 290 (Pl. 405, 406, 419, 420, 421, 422, 423, 424, 426, 427, 428, 429, 430, 431, 433, 434, 435, & 436

STATUTORY CLEARANCES

1. ICI/Lease docs	The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 702/M, dated 19.05.2025
2. CO	The CO, Shikaripara vide letter no. 428/Ra dated 10.05.2025 has mentioned the plot no. of the project is not recorded as "Jungle Hari" in R.S. Khatriyan & Register I
3. DMC Cluster	DMO, Dumka vide memo no. 873/M, dated 17.06.2025 certified that 07 Lot (5.19 Acre, 7.37 Acre, 6.51 Acre, 5.98 Acre, 4.57 Acre, 7.06 Acre & 5.43 Acre) exists within 500 meters radius from proposed project site and total area is 48.22 Acre.
4. DFO Wild Life	DFO, Wildlife Division, Hazaribag vide letter no. 813, dated 15.05.2025 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5. DFO Territorial	Division Forest Officer, Dumka Forest Division vide letter no. 907, dated 22.04.2025 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. 822/M. dated 17.06.2025 that this project is mentioned in approved DSR of Dumka District as a potential area (Page no. 318, Sl. no. 60).
7	Gram Sabha	: Gram Sabha conducted on 18.09.2024.
8	Mine Plan Approval	: Approved by District Mining Officer, Dumka vide Letter No. 805/M, dated 10.06.2025.
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	Mechanized Method	
2	Quarry Area	: 1.523 Ha	Life of Mine ~ 10years
3	Waste Generation	: 53,924cum	
4	Stripping Ratio	: 01:0.07	
5	Working Days	: 300	
6	Bench: size	: 6 m x 6 m	
7	Elevation of Mine	: 64m-58m AMSL	
8	Ground Level Elevation	: 58m AMSL	
9	Ultimate Working Depth	: 25 m AMSL	
10	Water Table	: 17m AMSL	
11	Topography of Mine	: Area represents gently sloping land.	
12	Explosive Requirement	: 53.46 kg Nitro mix explosives/day, will be obtained from lessened vendors.	
13	Diesel/Fuel requirement	: HSD – 287.49liters / day (86.247 KL/year)	

Production Details

Year	Production of Stone / Year			Removal of O.B.
	Cum	T.F.	Tonnes	Cum
1st	58877	2.7	158968	53924

2nd	59109	2.7	157594	0
3rd	56559	2.7	152710	0
4th	60500	2.7	163349	0
5th	59225	2.7	159907	0
Total	294270		794529	53924

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 - end of mine life in (Ha)	Area to be converted in the conceptual period.
1	Mining Quarry	-	1.523	1.523	1.523	Water body
2	Dumping	-	0.042	0.042	0.042	Plantation
3	Gravel and Drain	-	0.047	0.047	-	-
4	Settling Tank	-	0.006	0.006	0.006	-
5	Safety Zone	-	0.763	0.763	0.810	Plantation
6	Crusher	-	0.093	0.093	0.093	Plantation
7	Unutilised	2.480	-	-	-	-
Total		2.480	2.480	2.480	2.480	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Green Belt/Safety	0.951 Ha	2378

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	Zone/Crusher		
7	Along Approach Road	0.270 km	360
TOTAL			2738

- 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. 800 per tanker)	--	2,40,000
2	Plantation 360 X 800 = Rs 2,88,000 (Gabion Plantation along approach road) 2378 X 400 = 9,51,200 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	12,39,200	1,23,920
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.	--	2,03,220

Sl. No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
	$1,01,610 \times 2$		
	= Rs. 2,03,220		
<i>Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022</i>			
Total		13,39,200	5,67,140

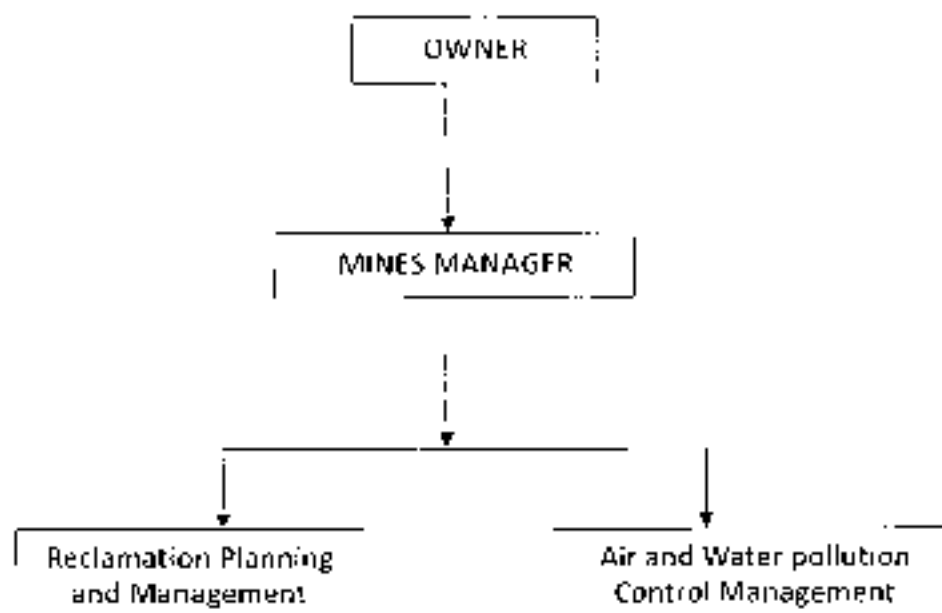
Environment Monitoring Programmed

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

53924 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.

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- Rainwater in quarry will be collected in a collection pit at quarry 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 Haul Road by using water Tankers.
- Regular repair of Haul Road
- All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

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

Hazard identification & Risk Analysis In Stone Mining operation

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

5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily Injury by hitting by loading material.	Very Unlikely	Minor	20
7	Transportation	Exposure to Dust 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

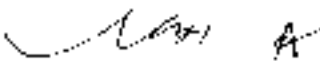
Control Measures

- It will be ensured that the drilling equipment is suitable for the job

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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.
- 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.

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- 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 precaution.
- 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 blaster's certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialized work. Planning for a round or 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.

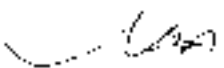
The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- 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 mainly 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.

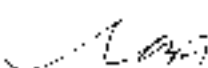
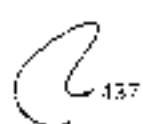
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Undertaking submitted affirming:

- 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 machines / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
If any tree felling than necessary permission shall be taken from the competent authority.
- i. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- 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 clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.06.2025, 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 CIA / EMP study as mentioned in Annexure II alongwith following specific condition :-

1. In compliance of OM no. F.No. 193 22/3/2024-IA III (F-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 MeriLF Portal (<https://meriLife.nic.in/>) 10% of the total green belt proposed shall be allocated under this clause

17. Kurunda Stone Mine of M/s Tridev Engicon Pvt. Ltd., Village : Kurunda, Thana : Shikaripara, Distt. : Dumka, Jharkhand (2.42 Ha).

(Proposal no.: SIA/JH/MIN/ 541899 /2025)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.06.2025.

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: 74594 CUM. / annum or 201404TPA.

Chandipur Stone mines (Proposal No-SIA/JH/MIN/508058/2024 dated 13/12/2024, Monitoring Period- December 2024 to February 2025), falls within the same cluster with Kurunda Stone mines (2.42 Ha.), and the baseline data for both mines are the same. Therefore, undergo common EIA with Kurunda Stone mines Area 2.48 Ha.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Kurunda Stone Mine
2	Lessee:	: Director: Shri Ravi Shankar Kumar, Partner: Shri Purushottam Sharan Prashant (Proponent of Partnership Firm: M/s Tridev Engicon Pvt, Ltd.)
3	Lessee Address	: Director: Shri Ravi Shankar Kumar S/o Shri Upendra Prasad Singh R/o House No: 298, Ward No.: 04, Near Singh Borewell, Williams Town, Shri Krishnapuri Deoghar, P.O + P.S.+ Dist.: Deoghar, 814112 Partner: Shri Purushottam Sharan Prashant S/o Late Kamla Sharan Singh R/o Vill.: Shrikant Road Belabagan, P.O.: Belabagan, P.S.+Dist.: Deoghar, State: Jharkhand
4	Lease Area	: 2.42 Ha
5	Type of Land	: Non-Forest Raiyati Land
6	Project Cost	: Capital Cost: Rs. 135.685 Lakhs
7	EMP Budget	: Capital Cost: Rs. 10.52 Lakhs Recurring Cost: Rs. 5.3842 Lakhs

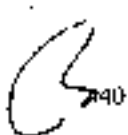
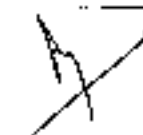


8	New or Expansion	New
9	Mineable Reserves	min: 6,43,929 Cum Tonnos : 17,38,508 Tons
10	Mine Life	10 years
11	Man power	22 Person
12	Water Requirement	7.95KLD (Drinking): 0.33 KLD (Pest Suppression) 1.50 KLD Plantation: 6.00 KLD
13	Water Source	From Nearby villages by tankers
14	DG Set / power	20 KVA D.G. Set proposed
15	Crusher	No
16	Nearest Water Body	Budumata River flowing at 7.40 km in N direction.
17	Nearest Habitation	Gharakour Village in the SE direction
18	Nearest Rail Station	Pinagana Railway Station is at areal distance of 5 km NW direction
19	Nearest Air Port	Deaghar Airport is at areal distance of 102 km NW direction.
20	Nearest Forest	More than 250 m, as per Division Forest Officer, Dumka letter no. 910 Dated- 22/04/2015
21	Road & Highways	NH 114A (Dumka-Bamponhat Road) is at areal distance of 2.30 km N Direction
22	Approach Road	270 m

CO-ORDINATES

Point Name	Latitude	Longitude
1	24° 10' 36.15628762" N	087° 40' 22.90986529" E
2	24° 10' 35.49769939" N	087° 40' 24.22781844" E
3	24° 10' 35.21315938" N	087° 40' 24.46876894" E
4	24° 10' 34.75146702" N	087° 40' 24.77305252" E
5	24° 10' 34.60300032" N	087° 40' 24.74377044" E
6	24° 10' 34.47333927" N	087° 40' 25.01985956" E
7	24° 10' 34.19856826" N	087° 40' 25.23768432" E
8	24° 10' 34.06489897" N	087° 40' 25.2385709" E
9	24° 10' 34.00580684" N	087° 40' 25.49255759" E

10	24° 10' 33.88372629" N	087° 40' 25.55321354" E
11	24° 10' 33.22954182" N	087° 40' 25.16032878" E
12	24° 10' 33.27706144" N	087° 40' 24.82135985" E
13	24° 10' 32.83799108" N	087° 40' 24.78937590" E
14	24° 10' 32.78368580" N	087° 40' 24.87462518" E
15	24° 10' 32.16354040" N	087° 40' 24.93671908" E
16	24° 10' 31.64357169" N	087° 40' 24.86514740" E
17	24° 10' 30.65491395" N	087° 40' 24.91057428" E
18	24° 10' 29.86174992" N	087° 40' 24.98432568" E
19	24° 10' 29.24467170" N	087° 40' 25.06417500" E
20	24° 10' 28.89606529" N	087° 40' 25.16861414" E
21	24° 10' 28.42225382" N	087° 40' 25.03001704" E
22	24° 10' 28.33471675" N	087° 40' 24.85182075" E
23	24° 10' 28.74700125" N	087° 40' 24.79396846" E
24	24° 10' 28.64586901" N	087° 40' 24.59526796" E
25	24° 10' 29.14617086" N	087° 40' 24.33855453" E
26	24° 10' 29.54861961" N	087° 40' 24.35081978" E
27	24° 10' 29.46446704" N	087° 40' 23.72726050" E
28	24° 10' 29.39488681" N	087° 40' 23.50240274" E
29	24° 10' 29.25209879" N	087° 40' 23.48629521" E
30	24° 10' 29.23484939" N	087° 40' 23.37989642" E
31	24° 10' 29.39766576" N	087° 40' 23.35771345" E
32	24° 10' 29.31563114" N	087° 40' 23.13115899" E
33	24° 10' 29.20364568" N	087° 40' 22.88304253" E
34	24° 10' 29.18873823" N	087° 40' 22.59871780" E
35	24° 10' 29.11348616" N	087° 40' 22.34184739" E
36	24° 10' 28.88356001" N	087° 40' 21.64581069" E
37	24° 10' 28.65433645" N	087° 40' 21.65881442" E
38	24° 10' 28.14748235" N	087° 40' 21.92026245" E
39	24° 10' 27.36524995" N	087° 40' 22.31290447" E
40	24° 10' 27.16199628" N	087° 40' 22.02809503" E
41	24° 10' 28.37918002" N	087° 40' 21.42953828" E
42	24° 10' 29.21147618" N	087° 40' 21.19803542" E
43	24° 10' 29.74546995" N	087° 40' 20.87935465" E
44	24° 10' 30.56942680" N	087° 40' 20.39807238" E
45	24° 10' 30.91290160" N	087° 40' 20.06263433" E
46	24° 10' 31.42422072" N	087° 40' 19.69352196" E
47	24° 10' 31.80639987" N	087° 40' 19.75104732" E
48	24° 10' 31.87731916" N	087° 40' 20.07378574" E
49	24° 10' 32.30918844" N	087° 40' 20.03357501" E
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51	24° 10' 32.67933447" N	087° 40' 20.24372696" E

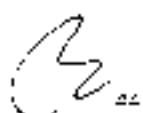

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53	24° 10' 32.62864953" N	087° 40' 29.81891262" E
54	24° 10' 32.99361100" N	087° 40' 21.54681276" E
55	24° 10' 33.18514612" N	087° 40' 21.49527291" E
56	24° 10' 33.32870582" N	087° 40' 21.41564018" E
57	24° 10' 32.77995513" N	087° 40' 21.60719335" E
58	24° 10' 34.35476363" N	087° 40' 21.78231223" E
59	24° 10' 34.37313273" N	087° 40' 21.85287532" E
60	24° 10' 34.12622820" N	087° 40' 22.16501441" E
61	24° 10' 34.43525256" N	087° 40' 22.37517679" E
62	24° 10' 34.60381658" N	087° 40' 22.10528272" E
63	24° 10' 34.65459902" N	087° 40' 21.95564205" E
64	24° 10' 34.73648979" N	087° 40' 21.69517991" E
65	24° 10' 35.07448092" N	087° 40' 21.40754723" E
66	24° 10' 35.32904685" N	087° 40' 20.79779032" E
67	24° 10' 36.04565736" N	087° 40' 21.17791674" E
68	24° 10' 35.84132785" N	087° 40' 21.27986928" E
69	24° 10' 35.93052136" N	087° 40' 21.70739653" E
70	24° 10' 35.84979929" N	087° 40' 21.81653194" E
71	24° 10' 36.07446001" N	087° 40' 21.98363169" E
72	24° 10' 36.07606843" N	087° 40' 22.78040776" E
73	24° 10' 36.12154089" N	087° 40' 22.62017865" E
74	24° 10' 36.17949073" N	087° 40' 22.60156786" E
75	24° 10' 36.35296684" N	087° 40' 23.01030549" E
76	24° 10' 35.87233084" N	087° 40' 23.17199883" E
77	24° 10' 36.00073532" N	087° 40' 23.51297539" E

LAND DETAILS

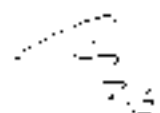
Khata no.	Plot no.
7, 8, 9, 10, 11	409, 410, 411, 414, 415, 416, 417, 418, 440,
12, 13, 14 & 15	441, 443, 444, 445, 446, 447, 448, 449, 508,
	509, 510, 511, 512, 513, 514, 515, 516, 517,
	518, 519 & 520

STATUTORY CLEARANCES

1. LOI / Lease docs	The Letter of Intent (LOI) has been issued by District Mining Officer, Durnka vide letter no. 701/M, dated 19.05.2025
2. CO	The CO, Shikaripara vide letter no. 427/Ra, dated 18.05.2025 has mentioned the plot no. of the project is not recorded as "Dungri"

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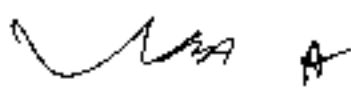


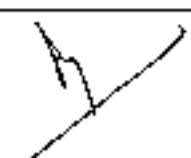
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		Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster	DMO, Dumka vide memo no. 825/M, dated 17.06.2025 certified that 06 Lol (6.13 Acre, 4.57 Acre, 7.06 Acre, , 7.37 Acre, 6.51 Acre & 5.19 Acre) exists within 500 meters radius from proposed project site and total area is 42.81 Acre.
4	DFO Wild Life	DFO, Wildlife Division, Hazaribag vide letter no. 815, dated 15.05.2025 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	Division Forest Officer, Dumka Forest Division vide letter no. 910, dated 22.04.2025 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. 824/M, dated 17.06.2025 that this project is mentioned in approved DSR of Dumka District as a potential area (Page no. 318, Sl. no. 60).
7	Gram Sabha	Gram Sabha conducted on 18.09 2024.
8	Mine Plan Approval	Approved by District Mining Officer, Dumka vide Letter No. 802/M, dated 10.06.2025.
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	:	Mechanized Method	
2	Quarry Area	:	1.756 Ha	Life of Mine – 10years
3	Waste Generation	:	34,450cum	
4	Stripping Ratio	:	01:0.04	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m	
7	Elevation of Mine	:	60m- 56m AMSL	
8	Ground Level	:	56m AMSL	
	Elevation	:		
9	Ultimate Working Depth	:	16 m AMSL	
10	Water Table	:	11 m AMSL	






11	Topography of Mine	: Area represents gently sloping land.
12	Explosive Requirement	: 64,452 kg Nitro mix explosives/day, will be obtained from lessened vendor.
13	Diesel/Fuel requirement	: HSD -301.35 liters / day (9040 KL/year)

Production Details

Year	Production of Stone / Year			Removal of O.B.
	Cum	T.F.	Tonnes	Cum
1st	66690	2.7	180063	34450
2nd	64720	2.7	173394	C
3rd	65455	2.7	176729	C
4th	74554	2.7	201404	C
5th	67925	2.7	183398	C
Total	338884		914987	34450

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	1.037	1.756	1.756	Water body
2	Dumping	0	0.102	0	0	-
3	Garbage Drain	0	0.033	0.033	0	
3	Safety Zone	0	0.631	0.631	0.654	Plantation

4	Unutilized	2.420	0.619	0	0	-
Total		2.420	2.420	2.420	2.420	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Green Belt/Safety Zone	0.664 Ha	1660
2	Along Approach Road	0.270 km	360
TOTAL			2020

- 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 replacemnt, 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. 800 per Tanker)	--	2,40,000
2	Plantation 360 X 800 = Rs 2,88,000 (Gabion Plantation along approach road) 1660 X 400 = 6,64,000 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	9,52,000	95,200
3	Fencing	1,00,000	
4	Environmental Monitoring (One Day Monitoring) Ambient Air 24 hrs (3 point) - Rs.27,270	--	2,03,220

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Sl. No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
	- Ground Water (7 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		
	<i>Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022</i>		
Total		10,52,000	5,38,420

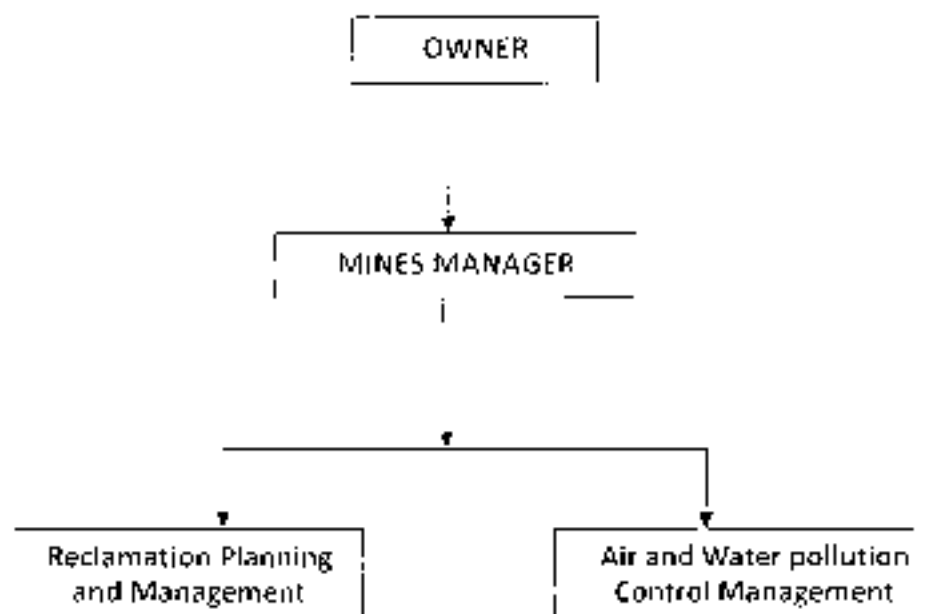
Environment Monitoring Programmed

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

34450cum 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 quarry 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 Haul Road by using water Tankers.
- Regular repair of Haul Road
- All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

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

Hazard Identification & Risk Analysis in Stone Mining operation

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

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3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	5
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tipping (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	10

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 miners 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.

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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.

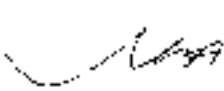
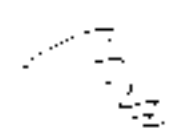
Handling of Explosives

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 DSMS 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.

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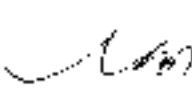


- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger 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:

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

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.06.2025, 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

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issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure II 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 Meri iFF Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.

18. Bindri Bandarkola Stone Deposit of M/s Pindari Enterprises (Prop. : Md. Jeeshan Kareem),
Village : Bindri Bandarkola, Anchal : Borio, Distt. : Sahibganj, Jharkhand (2.934 Ha).

(Proposal no.: SIA/JH/MIN/ 538607 /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 24.06.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 95,546 Cum Per Annum or 2,57,975 Ton Per Annum.

Project and Location Details:

S. No	Parameter	Details
1	Project Name	: Bindri Bandarkola Stone Deposit by M/s Pindari Enterprises
2	Proprietor	: Md. Jeeshan Kareem S/o Md Ehtesham
3	Lessee Address	: Village - Anjuman Nagar, Po-Mahadevganj, Ps-Jirwabadi District - Sahibganj, Jharkhand
4	Lease Area	: 2.934 Ha. 7.25 Acres
5	Type of Land	: Non-Forest, Ralyati Land
6	Project Cost	: 40.0 Lakhs
7	EMP Budget	: Capital: 30.8 Lakhs Recurring: 9.0 Lakhs per year
8	New or Expansion	: New
9	Mineable Reserves	: 24,98,720.5 Tones



10	Mine Life	5.7 years say 10 years
11	Man power	22 persons
12	Water Requirement	Total water requirement 10.77 KLD 0.77 KLD (Drinking & Domestic Use) + 2.02 (Plantation) KLD + 8.0 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	OG Set / power	50 KVA (Temporary setup for Back-up)
15	Crusher	No
16	Nearest Water Body	Ganga River is about 14.41 km in E direction
17	Nearest Habitation	Palashkuta village is about 1.1 km in ENE direction
18	Nearest Road Station	Kaigan Chak Railway Station is about 9.18 km in E direction.
19	Nearest Airport	Dumka Airport, Bihar is about 98.24 km in SSW direction
20	Protected Forest	Masbera P.F. within 5.06 km in E Direction
21	Road & Highways	Dumka-Sahibganj Road SH-18 is about 3.06 Km in WNW direction.
22	Approach Road	Approach road is 1500 meter from mines area.

CO-ORDINATES

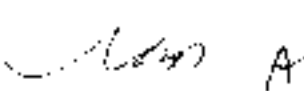
Pillar No.	Latitude	Longitude
P1	25°03'21.216" N	87°38'57.861" E
P2	25°03'17.802" N	87°39'17.93" E
P3	25°03'15.395" N	87°38'58.533" E
P4	25°03'12.988" N	87°38'55.783" E
P5	25°03'16.243" N	87°38'52.614" E
P6	25°03'18.277" N	87°38'54.762" E

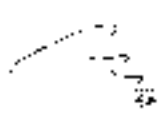
LAND DETAILS

Khata no.	Plot no.
46	538 (P)

STATUTORY CLEARANCES

1. LOI / Lease hold	The Letter of intent (LOI) has been issued by District Mining Officer, Sahibganj, vide letter no. 319/M, dated 16.02.2025
2. CC	The CC, Borno, Sahibganj vide letter no. 672/Bal., dated 12.03.2024 has mentioned the plot no. of the project is not recorded as

 A
 



		"Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster	DMO, Sahibganj vide memo no. 334/M, dated 19.02.2025 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. 1465, dated 01.07.2024 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. 1464, dated 01.07.2024 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. 1013/M, dated 05.06.2025 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 07.08.2024.
8	Mine Plan Approval	Approved by District Mining Officer, Sahibganj vide Letter No. 899/M, dated 17.05.2025.
9	Grid Certificate	DMO, Sahibganj vide memo no. 1110/M, dated 19.06.2025 certified that said project falls under grid no. 55 and Hon'ble NGT does not decided the production capacity of that Grid.
10	Qualified Person	Shri Vidya Bhushan Mishra through letter dated 23.06.2025 affirmed that the mine plan has been prepared by him.

WORKING DETAILS

1	Mining Method	:	OCM & Semi Mechanised	
2	Lease Area	:	7.25 Acre/ 2.934 Ha	Life of Mine – 9.7 years say 10 years
3	Waste Generation	:	5 years – 60467 Cum	
4	Stripping Ratio(t/m ³)	:	1:0:11	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Highest Elevation of lease Area	:	218Amsl	
8	Lowest Elevation of lease Area	:	168Amsl	
9	Ultimate Working Depth	:	137Amsl(31.8GL)	
10	Water Table	:	120Amsl	
11	Topography of Mine	:	Hillocks area	
12	Explosive Requirement	:	42.53 Mt/kg (External Agency)	







13. Diesel/Fuel requirement : 300litres per day

YEAR WISE PRODUCTION DETAILS

Year	Production of stone in Cum	Production of stone in Tonnes	Overburden in cum	Intercalated waste in Cum	Total Waste in Cum
1 st Year	91058	245255	23333	4794	28142
2 nd Year	92212	248772	5533	4853	10383
3 rd Year	93366	252088	7070	4914	11944
4 th Year	94392	254858	0	4968	4968
5 th Year	95546	257975	0	5029	5029
Total	466574	1259748	35910	24557	60467

LAND USE

Land Utilization	Existing Land use (Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry	NIL	1.637	2.478 Ha Area converted into water reservoir
Waste Dump	NIL	0.354	Comes under mining area
Road	NIL	0.018	0.00
Cusher	NIL	NIL	NIL
Safety Zone	NIL	0.506	0.506
Plantation			
Total	0.000	2.515	2.934
Unused Area	2.934	0.419	0.0
Total Lease Area		2.934	

ENVIRONMENT MANAGEMENT

Green Belt Development

The plantation will be done under the Campaign "Lekhe Ma Ke Naam". Total number of saplings to be planted in the entire plan period will be 2290 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 810 plants on 0.506 Ha area on 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	810	5060	0.506	2290

	Haul Road	3.0 x 3.0	2120	1590 m Approach Rd. Two rows both side of the road $1590/3 = 530$ $530*4=2120$ Plants		Bargad Palash Fruit Bearing Trees Mango, Jackfruit, Guava, Jamun
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			2930	--	0.506	

- 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)	16.15	5.0	Mining Mate supervised by Mine Manager	Daily Basis/Requirement Basis Register/Log book
2.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @No. of plants	No2, So2 & CO reduction Noise reduction	14.65	3.0	Mining Mate supervised by Mine Manager	Care taking @ twice a week, Tree Inventory.







7930 x 500Rs.

Sl.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	Deviation in Baseline	N/A		Outsource to NABRI Accredited Lab Monitored by Mine Manager	Mine Manager Review of base line as per monitoring plan proposed
			30.8	9.0		
TOTAL						

Solid Waste Management

The waste encountered during the mining operation is mainly . During 2 an period gritty soil removed will be dumped on northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period re-stored area of quarry will be reclaimed to the extent possible.

Environment Monitoring Cell:

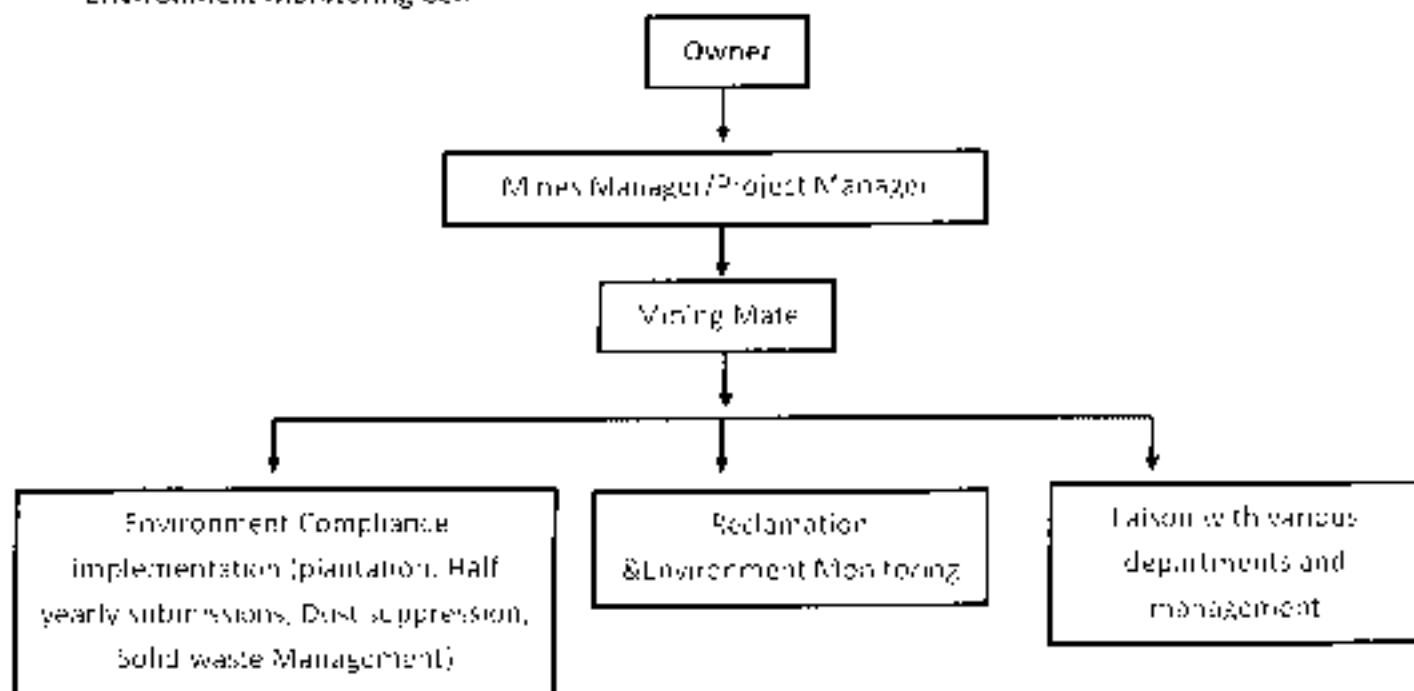


Fig: Organization Chart for Environment Management Cell

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

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- ✓ 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.

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.	3 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

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:

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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 Gadi road by using water Tankers
- Regular repair of Gadi road
- All Trucks carrying stone out of lease area will have PLC 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	Unattended 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/Side Slipping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by falling 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"

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1/11/2024

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

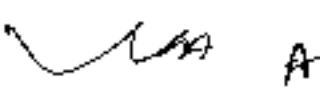
Falls from the edge of a bench

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 drilling 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 to 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 work place (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

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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 let 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 equipments 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 moving 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 taler /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.

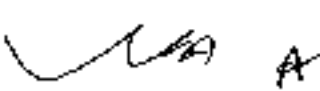
Undertaking submitted affirming:

- 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 Bindri Bandarkola Stone Deposit of M/s Pindari Enterprises (Prop. : Md. Jeeshan Kareem), Village : Bindri Bandarkola, Anchal : Borio, Distt. : Sahibganj, Jharkhand (2.934 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. In consideration of the comments regarding distance in the certificate issued by the DFO, Sahibganj regarding Man - Animal conflict in the area the PAs have submitted an undertaking that if any mitigation plan is prepared and implemented by DFO, Sahibganj the PAs will contribute their share of the funds, to the extent of their CSR budget on demand by the DFO, Sahibganj.
- II. In compliance of OM no. F.No. 143 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. 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 P.E., Audiometry and other required tests. Summary findings of same to be submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted 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.

19. Kundo Stone Deposit of M/s Pindari Enterprises (Prop. : Md. Jeeshan Karcom), Village : Kundo, Anchal : Borio, Distt. : Sahibganj, Jharkhand (2.468 Ha).

{Proposal no.: SIA/JH/MIN/ 539112 /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 24.06.2025

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

Application for Environmental Clearance (EC).

Proposed Capacity: 2,58,160 Ton Per Annum /95615 Cum Per Annum

Project and Location Details:

S. No	Parameter	Details
1	Project Name	: Kundo Stone Deposit by M/s Pindari Enterprises
2	Proprietor	: Md. Jeeshan Karcom S/o Md. Eanatesham
3	Lessee Address	: Village- Anjanar Nagar, P.O - Mahadevganj, P.S - Jirabadi District- Sahibganj, Jharkhand
4	Lease Area	: 2.468 Ha 6.10 Acres

5	Type of Land	: Non-Forest, Raiyati Land
6	Project Cost	: 40.0 Lakhs
7	EMP Budget	: Capital: 33.48 Lakhs Recurring: 8.0 Lakhs per year
8	New or Expansion	: New
9	Mineable Reserves	: 24,96,766 Tonnes
10	Mine life	: 9.7 Years Say 10 Years
11	Man power	: 22 persons
12	Water Requirement	: Total water requirement 11.27 KLD 0.77 KLD (Drinking & Domestic Uses) + 2.5 (Plantation) KLD + 8.0 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	: 25 KVA (Temporary setup for Backup)
15	Crusher	: No
16	Nearest Water Body	: Morong Nadi at 6.76 km in W direction. Ganges River at 10.61 km in ENE direction.
17	Nearest Habitation	: Pagar village is about 0.71 km in E direction.
18	Nearest Rail Station	: Kalian Chak Railway Station is about 5.81 km in E direction.
19	Nearest Airport	: Dumka Airport, Bihar at 99.24 km in SSW direction.
20	Reserve Forest	: Masbera P F is about 2.8 km in ENE Direction.
21	Road & Highways	: Rajmahal-Tinpahar -Borio RD is about 1.46 km in SW direction. Dumka -Sahibganj RD(SH-18) is about 6.8 km in W direction. NH-33 Sahibganj-Barharwa road at 10.09 km in E direction
22	Approach Road	: Approach road is 710 meter from mines area.

CO-ORDINATES

PILLARS	LATITUDE	LONGITUDE
1	25° 2'57.722"N	87°40'58.225"E
2	25° 3'1.425"N	87°40'52.979"E
3	25° 2'55.192"N	87°40'50.687"E
4	25° 2'55.109"N	87°40'53.849"E
5	25° 2'54.346"N	87°40'55.230"E

LAND DETAILS

Mouza	Khata no.	Plot no.
Kundo	01	50(P),
	02	51(P), 52(P)







STATUTORY CLEARANCES

1	LOI/Lease docs	The Letter of Intent (LOI) has been issued by District Mining Officer, Sahibganj vide letter no 354/M, dated 20.02.2025.
2	CO	The CO, Boro, Sahibganj vide letter no 674/Ra, dated 19.09.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Bhar" in R.S. Khatyan & Register II.
3	DMO Cluster	DMO, Sahibganj vide memo no 494/M, dated 19.03.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	DFO - in-charge Wildlife Sanctuary, Udhwā (Sahibganj) vide letter no 1475, dated 01.07.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwā Bird Sanctuary.
5	DFO Territorial	Divisional Forest Officer, Sahibganj Forest Division vide letter no 1474, dated 01.07.2024 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 1001/M, dated 05.06.2025 that this project is mentioned in approved DSR of Sahibganj District as a potential area (Page no 194).
7	Gram Sabha	Gram Sabha conducted on 05.08.2024.
8	Vine Plan Approval	Approved by District Mining Officer, Sahibganj vide Letter No 900/M, dated 17.09.2025.
9	End Certificate	DMO, Sahibganj vide memo no 1000/M, dated 05.06.2025 certified that said project falls under gnd no. 56 and production is within the over all permissible production limit.
10	Qualified Person	Shri Vidya Bhushan Mishra through letter dated 23.06.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	OCM & Semi-Mechanised
2	Lease Area	6.10 Acres/ 2.468 Ha
		Life of Mine 9.7 Years Say 10 Years
3	Waste Generation	5 years- 49552 Cum
4	Stripping Ratio/m ³	182.11
5	Working Days	300

6	Bench: size & No.	:	6m x 6m
7	Highest Elevation of lease Area	:	230m Amsl
8	Lowest Elevation of lease Area	:	202m Amsl
9	Ultimate Working Depth	:	152Amsl (62 BGL)
10	Water Table	:	140Amsl
11	Topography of Mine	:	hillock
12	Explosive Requirement	:	42.53 or 43 kg per day (outside agencies)
13	Diesel/Fuel requirement	:	300Litres per day

Year wise 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	87760	236952	20670	4619	25289
2nd	89120	240623	4770	4691	9461
3rd	92292	249187	0	4857	4857
4th	93349	252042	0	4913	4913
5th	95615	258160	0	5032	5032
Total	458135	1236964	25440	24112	49552

Land Use

LAND USE PATTERN			
	Existing	First to Fifth Years	After Life of Mine
Quarry	Nil	1.476	2.000 (area shall be converted as water reservoir) comes under mining area
Waste Dump	Nil	0.442	
Crusher	Nil	0.00	0.00
Road	Nil	0.004	0.00
Green belt in Safety Zone	Nil	0.468	0.468
Total	0.000	2.390	2.468
Unused area	2.468	0.078	0
Total Lease Area		2.468	

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	749	4680	0.468	Pipal

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				710 Meter Approach Rd.		Bargad
	Haul Road	3.0 x 3.0	948	Two row both side		Palash
				710/3-235 6 say 237		Fruit
				237*4-948 Plants		Bearing
2nd	Care & Protection	---	---	---	---	Trees
3rd	Care & Protection	---	---	---	---	Mango.
4th	Care & Protection	---	---	---	---	Jackfruit.
5th	Care & Protection	---	---	---	---	Guava.
	Total		1697	4680	0.468	Jamun

- Gation 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 FCCF Development, Department of Forest, Environment & Climate Change Govt. of Thailand. 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
	Water Sprinkling/Air pollution control					
1	(Dust Suppression along haulage road and mine) One Water Tanker	Dust (PM ₁₀ & PM _{2.5})	25.0	5.0	Mining Mate supervised by Mine Manager	Daily Basis/Requirement Basis Register/Log book
2	Green belt development safety zone 7.5mtr and along the road (for each plant including neeges	NO ₂ , SO ₂ & CO reduction Noise reduction	8.48	2.0	Mining Mate supervised by Mine Manager	Care taking twice a week. Tree Inventory

	and fences} @No. of plants 1697 x 500Rs.					
3.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	Deviation in Baseline	Nil	1.0	Outsource to NABL Accredited Lab- Monitored by Mine Manager	Mine Manager Review of base line as per monitoring plan proposed
	TOTAL		33.48	8.0		

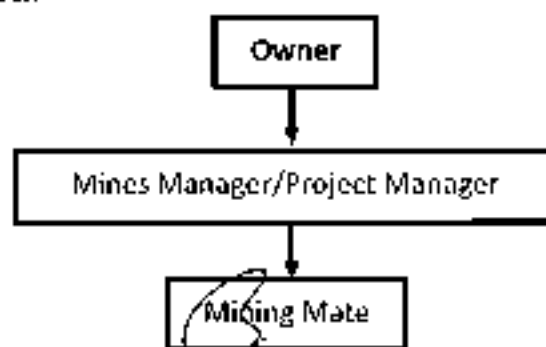
Monitoring Parameters and Frequency of Monitoring

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.	3 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



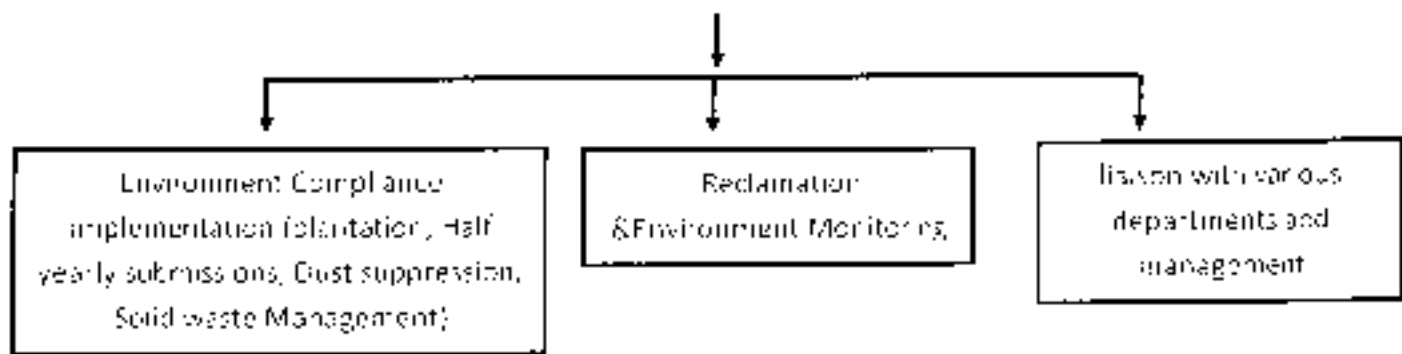


Fig: Organization Chart for Environment Management Cell

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. Desalted water will be allowed to flow into natural drainage.
- Gar and 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 deslting.
- 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:

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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 Gaur road by using water Tankers.
- Regular repair of Haul road.
- All Trucks carrying stone outside lease area will have PTC 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"

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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 10(5)(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 10(5)(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

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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.
- 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.

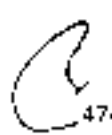
The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

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.

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Handling of Explosives

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

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, initiation lagged, 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, motor phones, cigarette or Bulb 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 boxes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

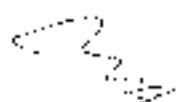
Health hazards should be interpreted as being harm from dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

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 work place (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.

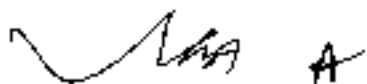
Transportation

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 pebbles 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 Kundo Stone Deposit of M/s Pindari Enterprises (Prop. : Md. Jeeshan Kareem), Village : Kundo, Anchal : Borio, Distt. : Sahibganj, Jharkhand (2.468 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. In consideration of the comments regarding distance in the certificate issued by the DFO, Sahibganj regarding Man - Animal conflict in the area the PAs have submitted an undertaking that if any mitigation plan is prepared and implemented by DFO, Sahibganj the PAs will contribute their share of the bonus, to the extent of their CSR budget or demand by the DFO, Sahibganj.
- II. In compliance of OM no. F.No. IA-3-22/3/2024-IA dt (6-241594) 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 Mo Ke Naam" and the details of the same shall be uploaded in the ManLife Portal (<https://manlifeportal.in/>). 10% of the total green belt proposed shall be allocated under this clause.
- III. 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. Nawabazar Stone Mine of M/s Mahamaya Stone (Partners : Shri Praveen Kumar Agrawal),
Village : Nawabazar, Thana : Nawabazar, Thana no. : 148, Distt. : Palamau, Jharkhand (2.73
Ha).**

(Proposal no.: SIA/JH/MIN/ 540217 /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 24.06.2025.

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

Application for Environmental Clearance (EC).

Proposed Capacity: Is 1,41,134 Ton Per Annum/52,272 Cum Per Annum

Project and Location Details:

S. No	Parameter	Details
1	Project Name	: Nawabazar Stone Mine M/s Mahamaya Stone
2	Partner's	: Shri Praveen Kumar Agrawal, Shri Arun Kumar Jaiswal & Shri Santosh Prajapati.
3	Lessee Address	: R/o - Duruwa , Post & Thana- Latehar, District- Latehar, Jharkhand
4	Lease Area	: Acres: 6.75 Ha: 2.73
5	Type of Land	: Raiyati Land

[Handwritten signatures and initials are present below the table, including a large 'A' and several scribbles.]

6	Project Cost	48.00 Lakhs			
7	EMP Budget	Capital: 25.10 Lakhs Recurring: 5.5 Lakhs / year			
8	New or Expansion	New			
9	Mineable Reserves	5,21,021.8 Cum 14,05 / 58 Tonnes			
10	Mine life	10 Years			
11	Man power	27 persons			
12	Water Requirement	Total water requirement is about 20.81 KLD=0.81 KLD (Drinking & Domestic Use) + 10.0 (Plantation) KLD + 10.0 KLD (Dust Suppression).			
13	Water Source	The drinking water will be available from nearby village by tractor tank manully by labors at the site			
14	DG Set / power	50 KVA -Temporary setup for Backup			
15	Crusher	No			
16	Nearest Water Body	Sardesh Dam is about 8.42 km in SSE direction.			
17	Nearest Habitation	Habitation near by about 1.12 km in W direction.			
18	Nearest Rail Station	Rajhura Railway station is about 17.32 km in SW direction.			
19	Nearest Airport	Gaya International Airport is about 95.07 km in NE direction			
20	Nearest Forest	S.no.	Protected Forest	Distance	Direction
			Madhur Jungle	11.83	S
			Adapur Khas PF	8.49	SW
			Turdaig PF	5.12	SSW
		1	Protected Forest	6.05	N
		3	Protected Forest	3.44	ESC
		6	Chirba Kalam PF	7.01	SL
		Protected Forest	1.41	S	
		6	Protected Forest	0.66	NW
21	Road & Highways	NH-139 is about 1.42 km in WSW direction.			
22	Approach Road	Approach road is 400 meter from mines area			

CO-ORDINATES

Pillars	Latitude	Longitude
1	24° 17' 4.332" N	84° 6' 43.709" E
2	24° 17' 3.978" N	84° 6' 47.094" E
3	24° 17' 3.534" N	84° 6' 50.292" E
4	24° 17' 1.134" N	84° 6' 50.477" E
5	24° 17' 0.329" N	84° 6' 53.880" E
6	24° 16' 59.487" N	84° 6' 57.435" E
7	24° 16' 57.520" N	84° 6' 57.043" E

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8	24° 16' 58.493" N	84° 6' 53.803"E
9	24° 16' 59.484" N	84° 6' 50.500"E
10	24° 17' 0.157" N	84° 6' 50.485"E
11	24° 17' 0.738" N	84° 6' 47.954"E
12	24° 17' 1.218" N	84° 6' 45.859"E
13	24° 17' 1.987" N	84° 6' 45.816"E
14	24° 17' 2.470" N	84° 6' 43.371"E

LAND DETAILS

Khata no.	Plot no.
28	639 (P) & 641 (P)
40	638 (P)

STATUTORY CLEARANCES

1	LOI / Lease Docs	: The Letter of Intent (LoI) has been issued by District Mining Officer, Palamau, Madininagar vide letter no. 1219/M, dated 17.05.2025.
2	CO	: The CO, Nawabazar (Palamau) vide letter no. 767, dated 17.12.2022 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatliyan & Register II.
3	DMO Cluster	: DMO, Palamau, Madininagar vide memo no. 1572/M, dated 10.06.2025 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	: Deputy Director, Palamau Tiger Project, North Division, Madininagar vide letter no. 54, dated 16.01.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve.
5	DFO Territorial	: Divisional Forest Officer, Madininagar Forest Division vide letter no. 1934, dated 05.07.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	: The DMO, Palamau, Madininagar has been certified vide memo no. 15/3/M, dated 10.06.2025 that this project is mentioned in approved DSR of Palamau District as a potential village (Page no. 102)
7	Gram Sabha	: Gram Sabha conducted on 04.12.2021.

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8	Mine Plan Approval	Approved by Assistant Director, Geology District Geological Officer, Paramau, Bakhanda vide Memo No. 84, dated 31.03.2025.
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	CUM & Semi-Mechanised
2	Lease Area	6.75 Acres/ 2.73 Ha. Life of Mine - 10 years
3	Waste Generation	5 years= 44543 Cum
4	Stripping Ratio(t/m ³)	1:0.06
5	Working Days	300
6	Benchest. size & No	6m x 6m
7	Highest Elevation of lease	312Amsl
8	Lowest Elevation of lease	217Amsl
9	Plan period Depth in M/T	300 Amsl
10	Ultimate Point in Depth	294 Amsl
11	Above water level	270 Amsl (41BGL)
12	Topography of Mine	Almost flat land
13	Explosive Requirement	119 kg per day (External agencies)
14	Diesel/Fuel requirement	388 Litres per day

Year wise Production Details

Year	Generation of waste/O.B in cum	Production of stone in Cum	Production of stone in Tonnes	Grade/Uses
1 st Year	16524	51548	139180	Construction & Road
2 nd Year	18568	52777	141134	Construction & Road
3 rd Year	9451	51555	139498	Construction & Road
4 th year	0.00	51888	140098	Construction & Road
5 th year	0.00	51993	140381	Construction & Road
Total	44543	259867	700291	

Land Use

Category	LAND USE PATTERN		
	Existing	First to Fifth Years	After Life of Mine
	Area in Hectares	Area in Hectares	Area in Hectares
Quarry	0.00	1.34	2.01 ha (area used for rain water harvesting)
Haul Road	0.00	0.02	0.00

Proposed Crusher	0.00	0.00	0.00
Green belt In Safety Zone	0.00	0.72	0.72
Dump with Parapet wall & Garland drain	0.00	0.14	0.00 (used for plantation, haul road dressing and backfilled)
Total area in use	0.00	2.22	2.73
Balance unused area	0.00	0.51	0.00
Balance used area	0.00	0.00	0.00
Total Applied Lease Area	2.73	2.73	2.73

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 1684 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 1152 plants on 0.72 Ha area or 2.5m X 2.5m grid pattern).

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	1152	7200	0.72	Pipal Bargad Palash Fruit Bearing Trees Mango, Jackfruit, Guava, Jamun
	Haul Road	3.0 x 3.0	532	400 M Approach Road $400/3=133\text{Plants}$ $133 \times 4\text{row}=532\text{ Plant}$		
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			1684	7200	0.72	

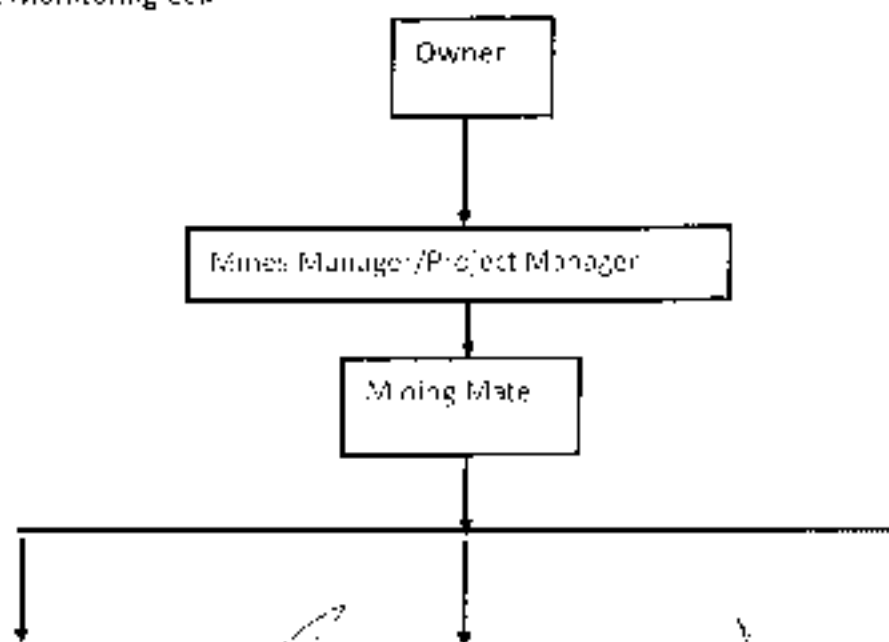
- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality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

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Environment 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 Suppressor along haulage road and mine) One Water Tanker	Dust (PM 10 & PM 2.5)	15.0	2.5	Mining Mate supervised by Mine Manager	Daily Basis/Requirement Basis Register/Log book
2.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @No. of plants 1684 x 500Rs	No2,SO2 & CO reduction Noise reduction	10.10	2.0	Mining Mate supervised by Mine Manager	Care taking @ twice a week. Tree inventory.
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			25.10	5.5		

Environment Monitoring Cell



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Environment Compliance
Implementation (plantation, Half
yearly submissions, Dust suppression,
Solid waste Management)

Reclamation & Monitoring
of Baseline

liaison with various
departments and
management

Fig: Organization 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.

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.	3 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

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Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water dumped out from quarry would be collected in a settling sump to be located within lease area. Decanted 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 settling.
- 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 effort 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 Gant 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 quantitative method.

Hazard Identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Transport, Loading & unloading	Load under exposure	Low	Catastrophic	6
2	Cracking of Exposure	Cracking of Exposure	Medium	Extremely High	6
3	Blasting	Failure of Blast (Bodily Injury)	High	Major	6
4	Drilling	Exposure to dust	High	Significant	5
5	Rock formation	Fail strength of rock (Bodily Injury)	High	Minor to	6
6	Use of Blasting	Failure of Blasting (Bodily Injury)	High	Major	20
7	Transportation	Vehicle Accident (Exposure to Dust)	High	Minor	6

NOTE: * Score of 1 to 10 (1 is the least & 10 is the highest) is given as follows:

- 1 to 5 score is between 5 to 20 there is minor risk from exposure to hazardous condition
- 6 to 10 score is between 21 to 30 there is minor risk from exposure to hazardous condition
- 11 to 15 score is between 31 to 40 there is minor risk from exposure to hazardous condition
- 16 to 20 score is between 41 to 50 there is minor risk from exposure to hazardous condition

Preventive Measures:

Slope Failure

Slope instability gives rise to rock fall, landslides. Slope instability may arise because of various geological fault factors, weathering, method of excavation, treatment. It will be necessary to apply an existing pattern and method of excavation along the face stability. The following measures will be taken:

- Slope of excavation should be excavated with
- Uniform slope heights and depths.
- Slope should be properly secured.
- The slope of excavation should be properly secured by the top of the bench face.
- The slope of excavation should be properly secured by the top of the bench face.
- The slope of excavation should be properly secured by the top of the bench face.

Drilling Operations

Drilling is a process by which the rock is drilled. It is a process by which the rock is drilled.

- The rock is drilled by a drill bit.
- The rock is drilled by a drill bit.

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.

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- 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 SI 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 work place (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

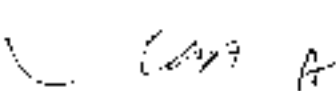
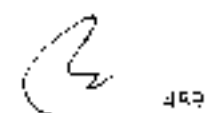
- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

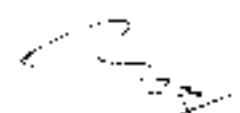
To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk

Transportation

The usual method of transporting minerals from the working face is by trucks /trippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of minerals 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 Nawabazar Stone Mine of M/s Mahamaya Stone (Partners : Shri Praveen Kumar Agrawal), Village : Nawabazar, Thana : Nawabazar, Thana no. : 148, Distt. : Palamau, Jharkhand (2.73 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - I along with following specific conditions :

- I. In compliance of OM no. F.No. 143-12/3/2024-IA (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 Pad Mo Ke Nool" 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 PFT, Audiometry and other required tests. Summary findings of same to be 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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21. Sahaspura Stone Deposit of M/s Laxmi Narayan Stone Works (Partners : Shri Sanjay Singh & Shri Ajit Kumar Singh), Village : Sahaspura, Thana : Untarl Road, Distt. : Palamau, Jharkhand (1.946 Ha).

(Proposal no.: SIA/JH/MIN/ S30462 /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 24.06.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 31,165 Cum Per Annum or 84,145 Ton Per Annum

Project and Location Details:

S. No	Parameter	Details
1	Project Name	: Sahaspura Stone Deposit by M/s Laxmi Narayan Stone Works
2	Partners	: Shri Sanjay Singh & Shri Ajit Kumar Singh
3	Lessee Address	: R/o- Karma Kalan, Thana -Chhatarpur, District- Palamu, Jharkhand
4	Lease Area	: Acres: 4.81 Ha:1.946
5	Type of Land	: Raiyati Land
6	Project Cost	: 46.00 Lakhs
7	EMP Budget	: Capital: 22.43Lakhs Recurring: 7.0Lakhs / year
8	New or Expansion	: New
9	Mineable Reserves	: 2,31,481.85Cum 6,25,001 Tonnes
10	Mine Life	: 10 Years
11	Man power	: 18 persons
12	Water Requirement	: Total water requirement is about 10.63 KLD= 0.63 KLD (Drinking & Domestic Uses) + 2.0 (Plantation) KLD + 8.0 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	: Yes (mobile crusher 250TPH)
16	Nearest Water Body	: North Koel River is about 1.40km in W direction.
17	Nearest Habitation	: Kallanpur is about 0.60 km in S direction.
18	Nearest Rail Station	: Karkatta Railway station is about 1.32 km in N direction.
19	Nearest Airport	: Gaya international Airport is about 125km in NE direction.
20	Nearest Forest	: NA
21	Road & Highways	: Rajmahal- Tinpahar - Borrio is about 0.96 km in SSE direction.
22	Approach Road	: Approach road is 200 meter from mines area.

CO-ORDINATES

Pillar	Latitude	Longitude	Pillar	Latitude	Longitude
1	24° 17' 14.039" N	83° 50' 30.066" E	22	24° 17' 9.059" N	83° 50' 32.231" E
2	24° 17' 13.439" N	83° 50' 29.453" E	23	24° 17' 9.493" N	83° 50' 31.568" E
3	24° 17' 12.515" N	83° 50' 29.590" E	24	24° 17' 10.458" N	83° 50' 32.238" E
4	24° 17' 13.148" N	83° 50' 30.422" E	25	24° 17' 10.169" N	83° 50' 32.699" E
5	24° 17' 11.349" N	83° 50' 30.444" E	26	24° 17' 9.409" N	83° 50' 32.466" E
6	24° 17' 10.960" N	83° 50' 31.237" E	27	24° 17' 8.361" N	83° 50' 32.478" E
7	24° 17' 10.213" N	83° 50' 30.624" E	28	24° 17' 7.757" N	83° 50' 33.008" E
8	24° 17' 9.684" N	83° 50' 30.589" E	29	24° 17' 7.663" N	83° 50' 33.949" E
9	24° 17' 9.317" N	83° 50' 30.252" E	30	24° 17' 7.985" N	83° 50' 34.319" E
10	24° 17' 9.970" N	83° 50' 30.508" E	31	24° 17' 7.796" N	83° 50' 35.019" E
11	24° 17' 9.980" N	83° 50' 29.910" E	32	24° 17' 8.506" N	83° 50' 35.213" E
12	24° 17' 9.515" N	83° 50' 29.705" E	33	24° 17' 8.810" N	83° 50' 35.013" E
13	24° 17' 9.338" N	83° 50' 29.418" E	34	24° 17' 9.295" N	83° 50' 34.047" E
14	24° 17' 9.163" N	83° 50' 29.038" E	35	24° 17' 9.786" N	83° 50' 33.190" E
15	24° 17' 8.842" N	83° 50' 29.181" E	36	24° 17' 10.289" N	83° 50' 33.130" E
16	24° 17' 7.917" N	83° 50' 29.805" E	37	24° 17' 11.666" N	83° 50' 33.912" E
17	24° 17' 6.682" N	83° 50' 30.680" E	38	24° 17' 12.467" N	83° 50' 33.460" E
18	24° 17' 6.163" N	83° 50' 31.044" E	39	24° 17' 12.193" N	83° 50' 33.066" E
19	24° 17' 7.145" N	83° 50' 32.010" E	40	24° 17' 14.414" N	83° 50' 32.266" E
20	24° 17' 7.763" N	83° 50' 32.545" E	41	24° 17' 13.640" N	83° 50' 31.175" E
21	24° 17' 8.205" N	83° 50' 31.990" E			

LAND DETAILS

Khata no.	Plot no.
04 & C7	270 (P), 271, 262 (P), 266 (P), 258 (P) & 264 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	The Letter of intent (LOI) has been issued by District Mining Officer Palamau, Medinipur vide letter no. 1779/M, dated 27.08.2024
2	CO	The CO, Udaipur Road Palamau vide letter no. 34, dated 25.01.2024 has mentioned the plot no. of the project is not recorded as "Jungle Thari" in R.S. Khatiyan
3	DMO Cluster	DMO Palamau, Medinipur vide memo no. 1149/M, dated 16.05.2025 certified that no other mining lease area exists within 500 m radius from proposed project site.

4	DFO Wild Life	Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 904, dated 26.10.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve.
5	DFO Territorial	Divisional Forest Officer, Medininagar Forest Division vide letter no. 1840 dated 26.06.2024 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 Palamau District (Sl. no. 23, Page no. 106).
7	Gram Sabha	BDO, Untari Road, Palamau vide letter no. 68, dated 29.01.2024 informed that Gram Sabha conducted on 12.01.2024.
8	Mine Plan Approval	Approved by Assistant Director, Geology District Geological Officer, Palamau, Jharkhand vide Memo No. 59, dated 19.03.2025.
9	Qualified Person	Shri Vidya Bhushan Mishra through letter dated 23.06.2025 affirmed that the mine plan has been prepared by him

WORKING DETAILS

1	Mining Method	: OCM & Semi Mechanised
2	Lease Area	: 4.81 ACRES / 1.946 HA
3	Waste Generation	: 5 years-26,656 Cum
4	Stripping Ratio(t/m ³)	: 1:0.03
5	Working Days	: 300
6	Bench: size & No	: 6m x 6m
7	Highest Elevation of lease Area	: 201AMSL
8	Lowest Elevation of lease Area	: 198AMSL
9	Ultimate Working Depth	: 170 AMSL
10	Water Table	: 150Amsl (48 BGL)
11	Topography of Mine	: Flat area
12	Explosive Requirement	: 21.26 kg (External Agency)
13	Diesel/Fuel requirement	: 196 Litres per 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
1 st Year	20007	54019	12285	1053	13338
2 nd Year	22187	59906	7695	1168	8863
3 rd Year	25650	69255	0	1350	1350

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4 th Year	27830	75142	0	1465	1465
5 th Year	31265	24145	0	1640	1640
Total	126839	342466	19980	6676	26656

LAND USE

Land Utilization	Existing Landuse(Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)
Excavation	0.0	0.577	1.205 (converted into water reservoir)
Waste Dump	0.03	0.225	comes under mining area
Road	0.0	0.013	0.0
Mobile Crusher	0.0	0.301	Remove from lease area
Safety Zone Plantation	0.0	0.743	0.743
Total	0.03	1.859	1.946
Unused Area	19.16	0.027	0.00
Total Lease Area			1.946

ENVIRONMENT MANAGEMENT

Green Belt Development

The plantation will be done under the Campaign "Ek Poo Ek Ake Naam". Total number of saplings to be planted in the entire plan period will be 4,000 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 1184 plants on 0.74 Ha area on 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	1184	7400	0.74	Neem, Peepal, Bargad, Jamun, Sakun
	Haul Road	3.0 x 3.0	268	2403 + 67 Plants 67 x 1 = 268 Plants	---	
2nd	Care & Protection	---	---	---	---	Mango,
3rd	Care & Protection	---	---	---	---	Jackfruit,
4th	Care & Protection	---	---	---	---	Amrad.
5th	Care & Protection	---	---	---	---	
Total			1452	7400	0.74	

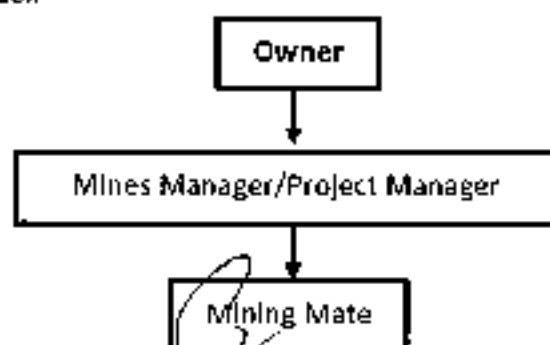
- Green Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality 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)	14.17	0.9	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 and fences) @No. of plants 1452 x 500Rs.	No2, So2 & CO reduction Noise reduction	7.26	5.0	Mining Mate supervised by Mine Manager	Care taking@twice a week, Tree Inventory,
3.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	Deviation in Baseline	Nil	1.0	Outsource to NABL Accredited Lab- Monitored by Mine Manager	Mine Manager Review of base line as per monitoring plan proposed
	TOTAL		22.43	7.0		

Environment Monitoring Cell



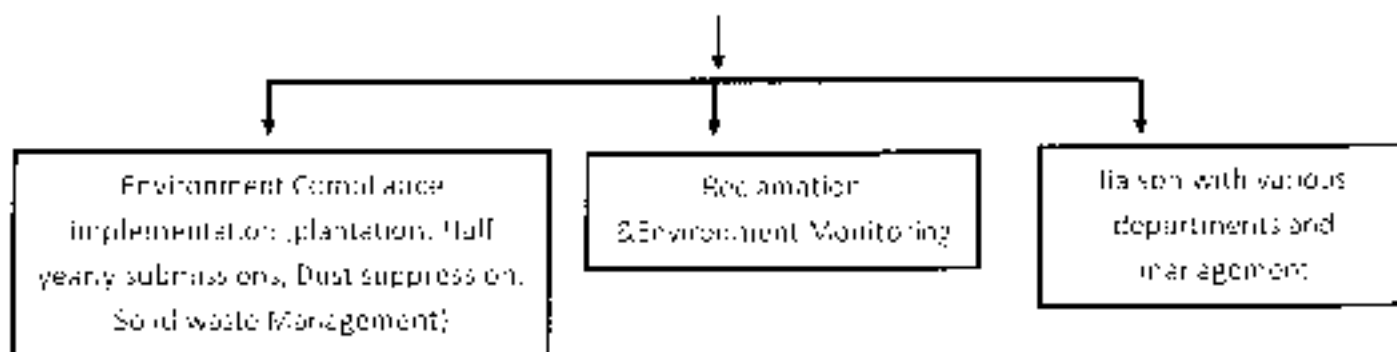


Fig: Organization Chart for Environment Management Cell

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.

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, SO ₂ , NO _x in the vicinity of the mine area, in the surrounding area covering project site only.	3 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.

Water Quality Management

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

Air Quality Management

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

Mitigation measures.

i. Use of Sharp Drill Bits

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

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

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

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

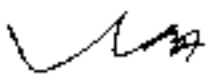
v. Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

vi. Movement of Trucks on Road – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:

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

RISK ASSESSMENT

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







Hazard Identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tipping (Bodily injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by falling material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	15

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 rocks are properly checked
- 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

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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 many 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 habitation, 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 D&MS 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 Bid, 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 work place (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.

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- 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 supervisor 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 base line 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 P.I.C 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 animal's 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.

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Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Sahaspura Stone Deposit of M/s Laxmi Narayan Stone Works (Partners : Shri Sanjay Singh & Shri Ajit Kumar Singh), Village : Sahaspura, Thana : Untari Road, Distt. : Palamau, Jharkhand (1.946 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I 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 MerLiFE Portal (<https://merillife.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. M/s Bardag Stone Mine of Shri Praveen Kumar Agarwal, Village : Bardag, Thana : Pipra, Distt. : Palamau, Jharkhand (4.89 Ha).

(Proposal no.: SIA/JH/MIN/ 539053 /2025)

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

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

Application for Environmental Clearance (EC) after ToR (Re-appraisal of Environment Clearance issued by DEIAA, Palamau).

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 170th meeting held on 20th - 24.01.2025 and SEIAA, Jharkhand has approved the ToRs in 170th meeting held on 28th & 29th January, 2025. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/2463/2024/590 dated 07.02.2025. The final EIA / EMP submitted by PP to SEAC on 03.06.2025.

The project has been granted EC by DEIAA, Palamau vide letter no. EC/DEIAA /2016-17/23 dated 19.05.2017.

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 / SLAC.

This is re-appraisal of the EC issued by DEIAA, Palamau which has been taken up for consideration on 24.06.2025. 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 $\mu\text{g}/\text{m}^3$ PM 2.5-567 $\mu\text{g}/\text{m}^3$ SO₂-18.2 NO₂- 19.0 $\mu\text{g}/\text{m}^3$. All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

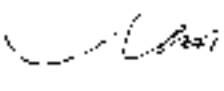
Greenbelt Developed

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

Production detail as per memo no. 2959/M dated 26.12.2024 by DMO, Palamau, Medinipur is within the permissible limit of EC.

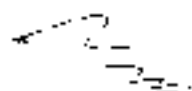
The compliance report of previous EC has been issued by ISPCB, Regional Office, Dhanuwa vide letter no. 90, dated 17.01.2025.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate regarding status of execution of compliance as no details have been provided. Hence, the Committee decided to obtain a self-certified compliance report along with the supporting details as evidence of execution.

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

Application for: Proposed Capacity:141300 Cum Per Annum/471 Cum Per Day or 423900 Ton Per Annum/ 1413 Ton per Day.

Project and Location Details:

S. No	Parameter	Details	
1	Project Name	M/s Bardag Stone Mine	
2	Partner's	Shri Parveen Kumar Agarwal, Sri Arun Kumar Singh, Sri Bipin Bihari Singh & Sri Amit Kumar Singh	
3	Lessee Address	Dhurwa, Po-Latehar, District-Latehar, Jharkhand	
4	Lease Area	Ha: 4.89 Ha	Acres: 12.09 Acres
5	Cluster Details	Total area: (7.0+10.0+12.09=29.09) Acres;11.77 Ha	Total no of Cluster: 02
6	Type of Land	Govt. Land	
7	Project Cost	65 Lakhs	
8	EMP Budget	Capital: 34.16 Lakhs	Recurring: 9.47 Lakhs
9	New or Expansion	Re-Appraisal (Lease Period- 20.11.2017 to 19.11.2027)	
10	Mineable Reserves	1810479.7 Cum	5431439 Tonnes
11	Mine Life	Up to the lease period i.e. 20.11.2017 to 19.11.2027.	
12	Man power	35 persons	
13	Water Requirement	Total water requirement is about 15.0 KLD=1.05 KLD (Drinking & Domestic Uses) + 6.0 (Plantation) KLD + 7.95 KLD (Dust Suppression).	
14	Water Source	by Authorised hired water tankers	
15	DG Set / power	125 KVA (Temporary setup for Backup)	
16	Crusher	Yes (200-250TPH) Installed	
17	Nearest Water Body	Tandwa Pond is about 9.36 km in NNW direction.	
18	Nearest Habitation	Bardag Village in SE direction	
19	Nearest Rail Station	JaplaPakur Railway Station is about 17.58 Km in NW direction.	
20	Nearest Airport	Gaya Airport is about 84.4 Km in ENE direction.	
21	Nearest Forest	Rakshel Range Forest is about 3.45 km in NNE direction. Reserved Forest is about 4.18 km in SSW direction.	
22	Road & Highways	SH-69 is about 8.26 km in E direction.	
23	Approach Road	Approach road is 1260 meter from mines area.	

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24° 28' 12.421" N	84° 9' 47.114" E	11	24° 28' 12.532" N	84° 9' 56.921" E
2	24° 28' 11.770" N	84° 9' 47.076" E	12	24° 28' 12.716" N	84° 9' 56.375" E
3	24° 28' 8.112" N	84° 9' 48.441" E	13	24° 28' 13.580" N	84° 9' 56.484" E
4	24° 28' 7.758" N	84° 9' 49.685" E	14	24° 28' 14.092" N	84° 9' 55.113" E
5	24° 28' 7.395" N	84° 9' 52.147" E	15	24° 28' 14.944" N	84° 9' 54.570" E
6	24° 28' 8.091" N	84° 9' 54.681" E	16	24° 28' 15.394" N	84° 9' 52.713" E
7	24° 28' 8.759" N	84° 9' 56.006" E	17	24° 28' 15.217" N	84° 9' 51.654" E
8	24° 28' 8.552" N	84° 9' 56.432" E	18	24° 28' 14.451" N	84° 9' 50.404" E
9	24° 28' 9.284" N	84° 9' 57.003" E	19	24° 28' 13.754" N	84° 9' 48.372" E
10	24° 28' 11.848" N	84° 9' 55.955" E	20	24° 28' 12.415" N	84° 9' 47.604" E

LAND DETAILS

Khata no.	Plot no.
130	429 (P1)

STATUTORY CLEARANCES

	i. Lease Deed 28.11.2017 to 19.11.2027.
1. LOI / Lease docs	ii. The Letter of Intent (LOI) has been issued by District Mining Officer, Palamau, Madinagar vide letter no. 2362/M, dated 29.12.2016.
2. CO	The CO, Ppara (Palamau) vide letter no. 256, dated 14.12.2024 has mentioned the plot no. of the project is not recorded as "Jungle Jhar" in Hal Survey.
3. DMD Cluster	DMD, Palamau, Madinagar vide memo no. 1528/M, dated 06.07.2023 certified that 02 other mining lease area (7.00 Acre & 10.00 Acre) exists within 500 m radius from proposed project site and total area is 29.09 Acre (11.77 Ha).
4. DFO Wild Life	Deputy Director, Palamau Tiger Project, South Division, Madinagar vide letter no. 210, dated 07.03.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve.
5. DFO Territorial	Divisional Forest Officer, Madinagar Forest Division vide letter no. 4518 dated 16.11.2015 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 Palamau District (SI no. 08, Page no. 175).

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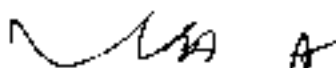
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7	Gram Sabha	:	Gram Sabha conducted on 22.10.2016.
8	Mine Plan Approval	:	Approved by Additional Director, Geology, Hazaribag vide Memo No. 13/G, dated 11.04.2022.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Palamau vide letter no. EC/DEIAA /2016-17/23, dated 29.05.2017.
10	Compliance report of EC	:	The compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide letter no. 90, dated 17.01.2025.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2193368 /2018 /601, dated 01.06.2018.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide Ref. no. : i. JSPCB/RO/RNC/CTO-13777200/2022/162, dated 21.07.2022. ii. JSPCB/RO/RNC/CTO-19002357/2024/86, dated 12.06.2024.
13	Production Report	:	Production report issued by DMO, Palamau, Medininagar vide memo no. 2969/M dated 26.12.2024.
14	Public Hearing	:	Public Hearing conducted on 30.04.2025.
15	Baseline Study Period	:	15 th October, 2024 to 15 th January, 2025.
16	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM & Mechanised
2	Lease Area	:	12.09 ACRES / 4.89 HA Life of Mine – Up to lease period i.e. 20.11.2017 to 19.11.2027.
3	Waste Generation	:	5 years– 78500
4	Stripping Ratio(t/m ³)	:	1:0.55
5	Working Days	:	300
6	Bench: size & No	:	6m x 6m
7	Highest Elevation of lease Area	:	223Amsl
8	Lowest Elevation of lease	:	205 Amsl






Area	
9 Ultimate Working Depth	174 Amsl
10 Water Table	165 Amsl (36BGL)
11 Topography of Mine	elipically isolated hills with gentle to sudden steep slope
12 Explosive Requirement	353 kg explosives (External Agency)
13 Diesel/Fuel requirement	440 Litres per day

Production Details

Year Wise	Weathered rock (cum)	Exploitation of Mineral	Saleable Quantities of stone	Soil (Cum)	Mineral reject	Grade
2022-23	00	1,41,300	4,23,900	00	Nil	Construction, Road
2023-24	00	1,41,300	4,23,900	00	Nil	Construction, Road
2024-25	00	1,41,300	4,23,900	00	Nil	Construction, Road
2025-26	00	1,41,300	4,23,900	00	Nil	Construction, Road
2026-27	00	1,41,300	4,23,900	00	Nil	Construction, Road
Upto- 19.11.2027						
Total	00	7,06,500	21,19,500	00		

Land Use

LAND USE PATTERN			
	Existing	First to fifth Year	After Life of Mine
Category	Area in Hectares	Area in Hectares	Area in Hectares
Quarry	2.24	4.11	4.23Ha will be left as water reservoir
Haul Road	0.02	0.04	0.00
Crusher	0.08	0.08	Crusher - Remove
Green Belt in Safety Zone	0.66	0.66	0.66
Camp with Parapet wall & Garbage Disposal	0.02	0.02	0.00
Total area in use	3.02	4.89	4.89
Balance unused area	1.87	0.00	0.00
Balance used area	0.00	0.00	0.00

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Total Existing Area	4.89	4.89	4.89

ENVIRONMENT MANAGEMENT

Public hearing:

Public hearing was successfully executed on date 30/04/2025.

S.No.	Name and address of the present villagers.	Questions / Suggestions / Issues etc.	Unit representative's response / solution.
1.	Mr.Bintrika Yadav, Village Bardag	Should the time of blasting be fixed?	The time of blasting will be between 01:00 and 03:00. The blasting will be done by an DGMS Certified blaster in his presence after creating a perimeter of 300 meters from the mine and giving a siren.
2	Shri Pradeep Paswan, Village Bardag	After going to Light, It becomes very dark at the crossing and on the way to the village. What support will the mine owner provide?	The mine owner assured that from his side 4-5 solar streets will be provided to the Bardag Mouza by the Mukhiya and solar street lights will be installed wherever orders are received from the villagers and the Mukhiya.
3	Mr. Rajeshwar Yadav, Village Bardag	Due to blasting, cracks develop in the kutchha houses near the mine. Will the mine owner cooperate in this?	The mine owner has given the assurance that under the supervision of the chief, district council and village head, the mine owner will compensate the owner of the kutchha houses which have developed cracks.
4	Mr. Ashok Kumar, Village Bardag	A lot of dust is generated due to the movement of vehicles on the village road. What cooperation will the mine owner provide in this regard?	The mine owner assured that the dust flying on the route between the mine and the village will be sprayed with water tankers 2-3 times a day, which will stop the dust from flying.
5	Mr. Anil Yadav, Village Bardag	There are a lot of mosquitoes in the village. What help will we get from the mine owner?	It has been assured by the Swadan owner that mosquito nets will be provided to the needy people of the village every year.
6	Mrs. Rekha Yadav, Village Bardag	Will the mine owner provide help to the needy people in the form of clothes and blankets	The mine owner has assured that every year clothes and blankets will be made available to the needy people of the village.

Action plan with time bound plan

S.No.	Action Item	Quantity / Scope	Timeline	Estimated Cost (INR)
1	Solar Streetlight	5 solar lights on village	Within 2 months	90,000 (18,000)

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2	Installation Compensation for damaged Kurcha houses	road Survey and compensation for affected houses	Survey within 1 month; pay out within 3 months	per night) 2,25,000 (15,000/house)
3	Mosquito Net Distribution	150 mosquito nets annually	Every pre-monsoon (May-June)	45,000 (300 per net)
4	Clothes & Blanket Distribution	150 winter kits (1 blanket + 2 clothes)	Every pre-winter (Oct-Nov)	90,000 (600 per kit)
Total				4,50,000

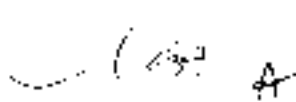
Green Belt Development

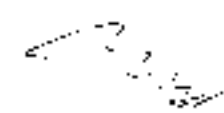
Year	Place of Plantation	Spacing b/w plants	Total No. Of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	1056	5600	0.66	Neem,
	Haul Road	3.0 x 3.0	1680	1760 M Approach Road 1760/3=420Plants 420x4row=1680Plant		Peepal, Bargad, Jamun, Fruit Bearing Trees
2nd	Care & Protection	---	---	---	---	Mango,
3rd	Care & Protection	---	---	---	---	Jackfruit,
4th	Care & Protection	---	---	---	---	Amrud
5th	Care & Protection	---	---	---	---	
Total			2736	6600	0.66	

- 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 PCO. Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

S.NO.	Particulars	Budget Provisions (Rs)	
		Capital	Recurring
Water Demand			
1(a)	Fixed Overhead water sprinkling system with solar pump for outgoing and incoming transportation vehicles for haul road and green belt Cost for 300 days for 13.95 KLD @5 KL tanker capacity. Rupees 500/- per tanker	1,00,000	4,18,500
	& One dedicated tanker of 5 KL for Greenbelt	10,00,000	50,000



Management			
1(b)	Discharge of waste water 300 days for 0.84 KLD @5 KL tanker capacity, Rupees 2000/per tanker	0	1,00,800
2	Prepare & Maintenance of approach road (Max. Road length 500 m. Width 4.0 m) @ 100 Rs. /Meter.	50,000	5,000
3	Monitoring (Air, Water, Soil & Noise)	Nil	1,00,000
4	Settling tank 2 in no's (LBH 12 m* 7 m* 4 m) & Garland drains	2,00,000	30,000
5	Wire Fence 807 m x 300 /- meter	2,42,100	24,210
Plantation Scheme			
Plantation in consultation with DFO & Gram Panchayat and conversion to Grazing land as far as possible.			
6	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) 2736 No. of plants x 500 Rs.	13,68,000	2,00,000
Solid Waste Management			
7	Bins 2 Nos	1,500	4,000
8	Transport of Dry Waste	5,000	
9	Vehicle Maintenance +PUC Certification	Nil	25,000
As per demand inPublic hearing			
10	Installation of Solar Streetlight on village road	90,000	10,000
11	Compensation for damaged kutchha houses	2,25,000	30,000
12	Mosquito Net Distribution	45,000	-
13	Clothes & Blanket Distribution	90,000	-
Total EMP Budget		34,16,600	9,47,110

Need based Socio-Economic

Corporate Environmental Responsibility (CER) Plan and Budget							
S.No	Activities	Estimated Cost In Rs. (in Lakhs)	Time Bound				
			1 st year	2 nd year	3 rd year	4 th year	5 th year
1	Donation to the villagers under supervision of Gram Panchayat to support for marriage or death feast.	2	0.4	0.4	0.4	0.4	0.4
2	Sports Kits(cricket, football, nets, etc)	0.5	0.2	0.2	0.1	-	-
3	Aestheticenhancement of Playground	0.5	0.5	-	-	-	-
4	Repairs of Hand pumps	1.5	1.5	-	-	-	-
Total		4.5	2.6	0.6	0.5	0.4	0.4

Environment Management Cell

Owner

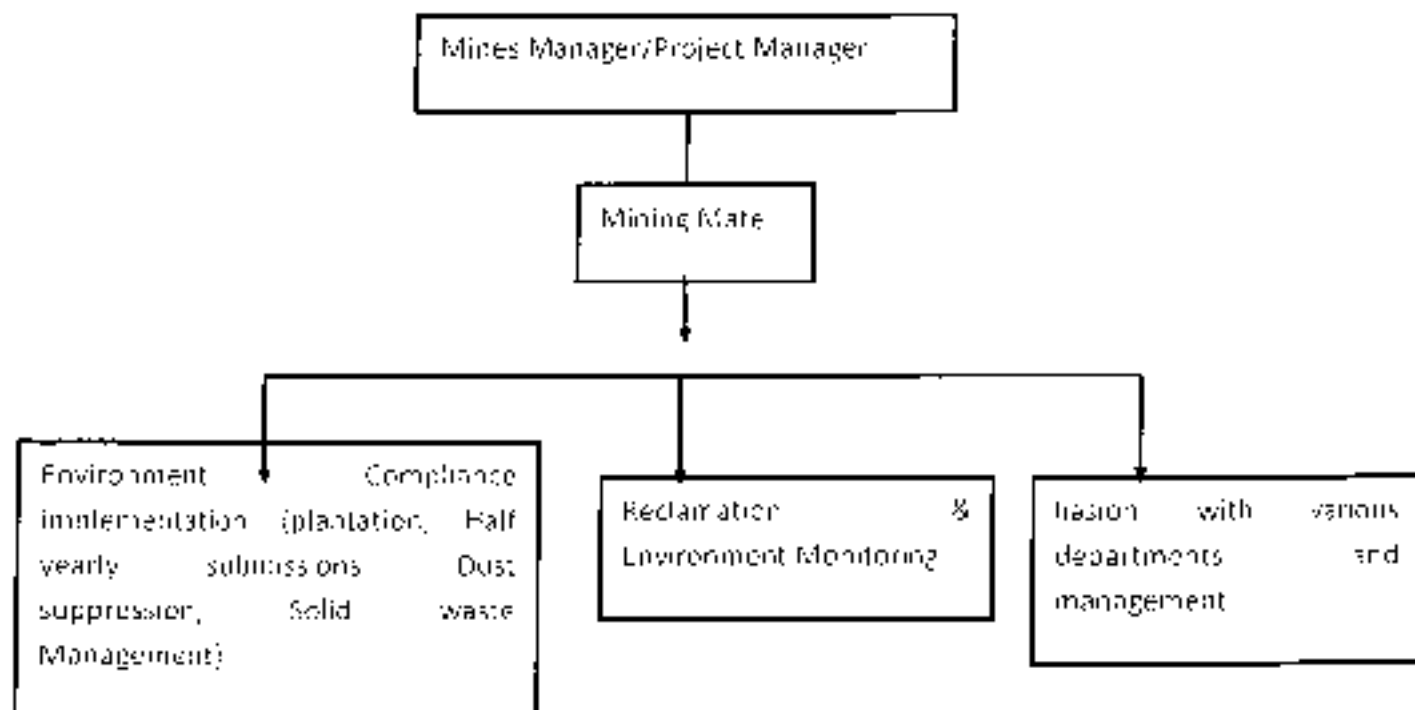


Fig: Organization Chart for Environment Management Cell

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

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring

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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.	3 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.

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

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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 Gant road by using water Tankers
- Regular repair of Hau road.
- All Trucks carrying stone outside lease area will have POC 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	5
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Side/Chipping (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.

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

Noise Generation during drilling

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

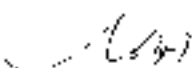
Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following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

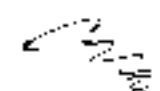
Handling of Explosives

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 initiation 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

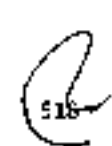
Identifying the hazards that come along with the presence of vehicles at the work place (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- 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

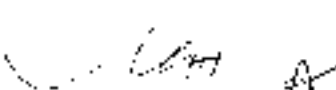
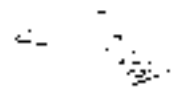


of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- 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 authorised 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/shooting 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 notified 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 stabilised using gabion plantation created at the end of life of the mine.

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- 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 M/s Bardag Stone Mine of Shri Praveen Kumar Agarwal, Village : Bardag, Thana : Pipra, Distt. : Palamau, Jharkhand (4.89 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - I 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.

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- VII Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 5 monthly compliance report
- IX Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

23. M/s UPS Stone & Chips of Shri Upendra Kumar Singh, Village : Khardiha, Thana : Naudihia Bazar, Thana no. : 368, Distt. : Palamau, Jharkhand (4.75 Ha).

[Proposal no.: SIA/JH/MIN/ 538574 /2025]

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

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

Application for Environmental Clearance (EC) after ToR (Re-appraisal of Environment Clearance issued by DEIAA, Palamau).

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 119th meeting held on 17.12.2024 - 22.12.2024 and SEIAA, Jharkhand has approved the ToRs in 119th meeting held on 30th & 31st December, 2024. TOR for the project was issued by SE AA, Jharkhand vide letter no. EC/SE AA/2024-25/3416/2024/525, Dated 13.01.2025. The final EIA / EMP submitted by PP to SEAC on 03.06.2025.

The project has been granted EC by DEIAA, Palamau vide letter no. LC/DEIAA/2016-17/32, dated 17.08.2017

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 SE AA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Palamau which has been taken up for consideration on 24.06.2025. 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 µg/m³ PM 2.5 567 µg/m³ SO₂ 18.2 NO₂ 19.6 µg/m³. All the data are within the permissible limit.

Dust suppression is being carried out on regular basis

Green belt Developed

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

Production detail as per memo no. 2654/M, dated 28.11.2024 by DMD, Palamau is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCO, Regional Office, Dhurwa vide letter no. 1547, dated 09.12.2024.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate regarding status of execution of compliance as no details have been provided. 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.

Application for: Proposed Capacity: 1,05,000 Cum Per Annum/350 Cum Per Day or 3,15,000 Ton Per Annum/ 1050.00 Ton per Day

Project and Location Details:

S. No	Parameter	Details	
1	Project Name	: M/s UPS Stone & Chips	
2	Partner's	: Sri Upendra Kumar Singh, Sri Rakesh Kumar Singh & Sri Anup Kumar	
3	Lessee Address	: Village - Khardiha PO- Saraidih, PS- Naudiha Bazar, District - Palamu, Jharkhand - 822113	
4	Lease Area	: Ha: 4.75 Ha	Acres: 11.75 Acres
5	Cluster Details	: Total area: (11.50+11.75=23.25Acre) or 9.41Ha	Total no of Cluster: 01
6	Type of Land	: Govt. Land	
7	Project Cost	: 58 Lakhs	
8	EMP Budget	: Capital: 25.62 Lakhs	Recurring: 8.70 Lakhs per year
9	New or Expansion	: New	
10	Mineable Reserves	: 1045497.83Cum	3136493.51 Tones
11	Mine Life	: Up to the lease period i.e. 14.11.2017 to 13.11.2027.	
12	Man power	: 18 persons	
13	Water Requirement	: Total water requirement is about 8.36 KLD 0.81 KLD (Drinking & Domestic Uses) + 5.55 (Plantation) KLD + 2.0 KLD (Dust Suppression).	
14	Water Source	: by Authorized hired water tankers	
15	DG Set / power	: 25 KVA (Temporary setup for Backup)	
16	Crusher	: No	
17	Nearest Water Body	: Unnamed irrigation Canal at 0.33km in N direction. Batane River is about 12.8 km in N direction.	

		Batane Dam is about 12.64 km in N direction
18	Nearest Habitation	Khairdiha Village is about 0.68 km in NE direction
19	Nearest Rail Station	Najn Railway Station is about 30.38 Km in SW direction
20	Nearest Airport	Gaya Airport is about 81.81 Km in NE direction
21	Nearest Forest	Hu'san P. is about 6.38 km in WSW direction Bhuthi Forest is about 7.26 km in SSE direction.
22	Road & Highways	Manatu Chhatarpur Road is about 1.36 km in S direction Chhatarpur Road is about 4.77 km in N direction
23	Approach Road	Approach road is 500 meter from mines area.

CO-ORDINATES

S. No	LATITUDE	LONGITUDE
1	24° 18' 50.538" N	84° 17' 16.473" E
2	24° 18' 50.007" N	84° 17' 8.521" E
3	24° 18' 47.760" N	84° 17' 5.461" E
4	24° 18' 45.195" N	84° 17' 5.475" E
5	24° 18' 42.558" N	84° 17' 5.459" E
6	24° 18' 40.553" N	84° 17' 9.795" E
7	24° 18' 41.712" N	84° 17' 15.833" E
8	24° 18' 44.975" N	84° 17' 16.159" E
9	24° 18' 46.075" N	84° 17' 13.359" E
10	24° 18' 46.486" N	84° 17' 9.599" E

LAND DETAILS

Khata no.

Plot no.

01

45 (P)

STATUTORY CLEARANCES

1	LOI / Lease deed	The Letter of Intent (LoI) has been issued by District Mining Officer, Palamau vide letter no. 2201/M, dated 24.11.2016. 1. Lease Deed- 04.11.2017 to 13.11.2027
2	CO	The CO Naudha Bazar, Palamau vide letter no. 221, dated 13.07.2016 has mentioned the plot no. of the project is not recorded as "Jungle-Jhar" in B.S. Khatiyan
3	DMO Cluster	DMO, Palamau vide memo no. 1219/MA, dated 08.05.2024 certified that 01 other mining lease area (11.50 Acre) exists within 500 m radius from proposed project site and total area is 23.25

		Acre or 9.41 Ha.
4	DFO Wild life	Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 514, dated 28.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve.
5	DFO Territorial	Divisional Forest Officer, Medininagar Forest Division vide letter no. 3964, dated 03.01.2016 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 Palamau District (Sl. no. 25, Page no. 70).
7	Gram Sabha	Gram Sabha conducted on 08.11.2016.
8	Mine Plan Approval	Mining scheme approved by Additional Director, Geology, Hazaribag vide Letter No. G/2022-23-67, dated 04.06.2022.
9	Previous Environmental Clearance (EC)	Previous EC granted by DEIAA, Palamau vide letter no. EC/DEIAA/2016-17/32, dated 17.08.2017.
10	Compliance report of EC	EC compliance report issued by JSPCB, Regional Office, Dhurwa vide letter no. 1547, dated 09.12.2024.
11	Consent to Establish (CTE)	CTE issued by JSPCB vide Ref. no JSPCB/HO/RNC/CTE-2026947/2018 /97, dated 23.01.2018.
12	Consent to Operate (CTO)	CTO issued by JSPCB vide ref. no. : JSPCB/RO/RNC/CTO-9201777/2022/1844, dated 28.12.2022.
13	Production Report	Production report issued by DMO, Palamau vide memo no. 2654/M, dated 28.11.2024.
14	Public Hearing	Public Hearing conducted on 29.04.2025.
15	Baseline Study Period	15 th October, 2024 to 15 th January, 2025.
16	Qualified Person	Dr. Amarjeet Kumar Singh vide email dated 21.12.2024 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	: OCM & Mechanised
2	Lease Area	: 11.75 ACRES / 4.75 HA
		Life of Mine – Up to the lease period i.e. 14.11.2017

522

X

22/11/24

to 13.11.2027.

3	Waste Generation	5 years= 0.0
4	Stripping Ratio(t/m ³)	0.0:0.0
5	Working Days	300
6	Bench size & No	6m x 6m
7	Highest Elevation of lease Area	293Amsl
8	Lowest Elevation of lease Area	281Amsl
9	Ultimate Working Depth	245 Amsl
10	Water Table	238Amsl (439GL)
11	Topography of Mine	The stone mine lease area situated in small hill.
12	Explosive Requirement	150 kg per day (External Agency)
13	Diesel/Fuel requirement	440 Litres per day

Year wise Production Details

Year	Tonnage factor (t/m ³)	Top Soil	Volume Stone (m ³)	Year wise excavation in tonne
2022 - 23	3.0	Nil	1,05,000.00	3,15000.00
2023 - 24	3.0	Nil	1,05,000.00	3,15000.00
2024 - 25	3.0	Nil	1,05,000.00	3,15000.00
2025 - 26	3.0	Nil	1,05,000.00	3,15000.00
2026 - 27	3.0	Nil	1,05,000.00	3,15000.00
Total			5,25,000.00	15,75,000.00

Land Use

LAND USE PATTERN			
	Existing	During scheme period of mine	After Life of Mine/ conceptual period
Category	Area in Acre	Area in Acre	Area in Acre
Quarry	1.97	0.66	9.90 (Entire area converted into water body)
Haul Road	0.01	0.01	0.00
Overburden dump	0.00	0.00	0.00
Garland drain	0.05	0.22	0.00
Infrastructure	0.00	0.01	0.00
Green belt	0.00	1.25	1.25
Total	1.98	11.75	11.75
Area which will	9.77	0.00	0.00

remain untouched			
Total	11.75	11.75	11.75

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	1184	7400	0.74	Neem Pipal Bargad Palash Fruit Bearing Trees Mango, Jackfruit, Guava Jamun
	Haul Road	3 x 3	668	500M Approach Road $500/3 = 167$ Plants $167 \times 4 \text{ row} = 668$ Plant		
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			1852	7400	0.74	

Note: A total of 1852 saplings were proposed to be planted. Out of which 850 plant in Safety Zone area have been planted during previous year of mining test will be done in upcoming months.

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

Environment Management Budget

S.NO.	Particulars	Budget Provisions (Rs.)	
		Capital	Recurring per year
Water Demand			
1(a)	Fixed Overhead water sprinkling system with solar pump for outgoing and incoming transportation vehicles for haul road and green belt	1,00,000	2,26,500

	Cost for 300 days for 7.55 KLD @5 KL tanker capacity. Rupees 500/- per tanker & One dedicated tanker of 5.0 KL for Greenbelt Management.	15,00,000	50,000
2(b)	Discharge of waste water 300 days for 0.65 KLD @5 KL tanker capacity. Rupees 2000/-per tanker	0	78,000
3	Maintenance of approach road (Max. Road length 507 m, Width 4.0 m) @ 100Rs /Meter	0	50,700
3	Monitoring (Air, Water, Soil & Noise)	Nil	1,00,000
4	Settling tank 2 in no's (LBH 12 m ³ 7 m ³ 4 m ³) & Earland drains	2,00,000	30,000
5	Wire Fence 1005 m x 300 /- meter	3,19,500	21,950
Plantation Scheme			
Plantation in consultation with DFO & Gram Panchayat and conversion to Grazing land as far as possible.			
6	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) 1852 No. of plants x 500 Rs.	9,26,000	2,00,000
Solid Waste Management			
7	Bins 2 Nos.	1,500	4,000
8	Transport of Dry Waste	5,000	0
9	Vehicle Maintenance +PUC Certification	Nil	25,000
As per demand in Public hearing			
10	Roads with potholes & Maintenance	1,20,000	10,000
11	Organize health camps twice a year with priority for 40+ age group		50,000
12	Mosquito Net Distribution	15,000	-
13	200 Sarees distribution during festivals	50,000	-
14	Installation of Solar Streetlight on village road	1,25,000	15,000
Total EMP Budget		25,62,000	8,70,150

Additional Blasting cost

In consonance with NGT guidelines dated 21.07.2020, when blasting is involved a setback of a minimum of 200 meters should be left from the habitation area towards mine site. As per the letter issued by the CO, Palamu vide letter no.221 Dated 13/07/2016, there is no habitation within 500m radius form the mining site.

Public hearing:

Public hearing was successfully executed on date 29/04/2025.

Sr. No.	Name of Local Resident & Village	Questions / Suggestions / Objections Raised	Clarifications Given by Mine Owner
1	Shri Upendra Kumar Singh, Village Khardiha	What type of mining will take place in the mine and who will be employed in it?	Mechanized mining has been applied for in the mine in which drilling and blasting will be used which will be done by the Mines Manager and DGMS Blaster Certified.

2	Shri Mahesh Kumar, Village – Khardiha	There are many big and small potholes on the road to the village. What help will the mine owner provide in this regard?	The mine owner assured that all the potholes on the road to the village will be repaired.
3	Shri Niraj Kumar, Village – Khardiha	The dust that flies from the mine to the road will be controlled by the mine owner.	The mine owner has assured that the mine owner will spray water 2 to 3 times a day on all the unpaved roads leading to the mine.
4	Shri Rishu Kumar, Village – Khardiha	Will the mine owner provide mosquito nets?	The mine owner has assured that mosquito nets will be provided to all needy villagers.
5	Shri Laik Thakur, Village – Khardiha	Will employment be provided by the mine owner?	The mine owner has assured that first of all the villagers will be given employment in the mine according to their qualifications
6	Shri Manoj Kumar Bhulya, Village – Khardiha	What help will the mine owner provide to the boys migrating from the village?	The mine owner has given the assurance that to stop migration, the boys of the village will be given employment in the mine as per their qualifications.
7	Shri Vinod Kumar Singh, Village – Khardiha	Blasting should be done at fixed times.	The blasting time will be between 1 pm and 3 pm. The blasting will be done by creating a circle of 300 meters from the mine, giving siren and only by DGMS Certificate blasters.
8	Shri Raja Singh, Village – Khardiha	Will the mine owner organize medical camps so that the villagers can get their health checkups done for free?	The mine owner has assured that free medical camps will be organized 2 to 3 times a year. Villagers above 40 years of age will be given primary medical treatment.
9	Shri Guddu Singh, Village – Khardiha	After power cuts, the squares and intersections become dark. Will the mine owner provide support for solar street lights?	The mine owner has assured that he will provide 4-5 solar street lights.
10	Shri Bipati Devi, Village – Khardiha	Will sarees be provided to rural women?	The mine owner has assured that sarees will be distributed to rural women during the festival time.

Action plan with time bound plan

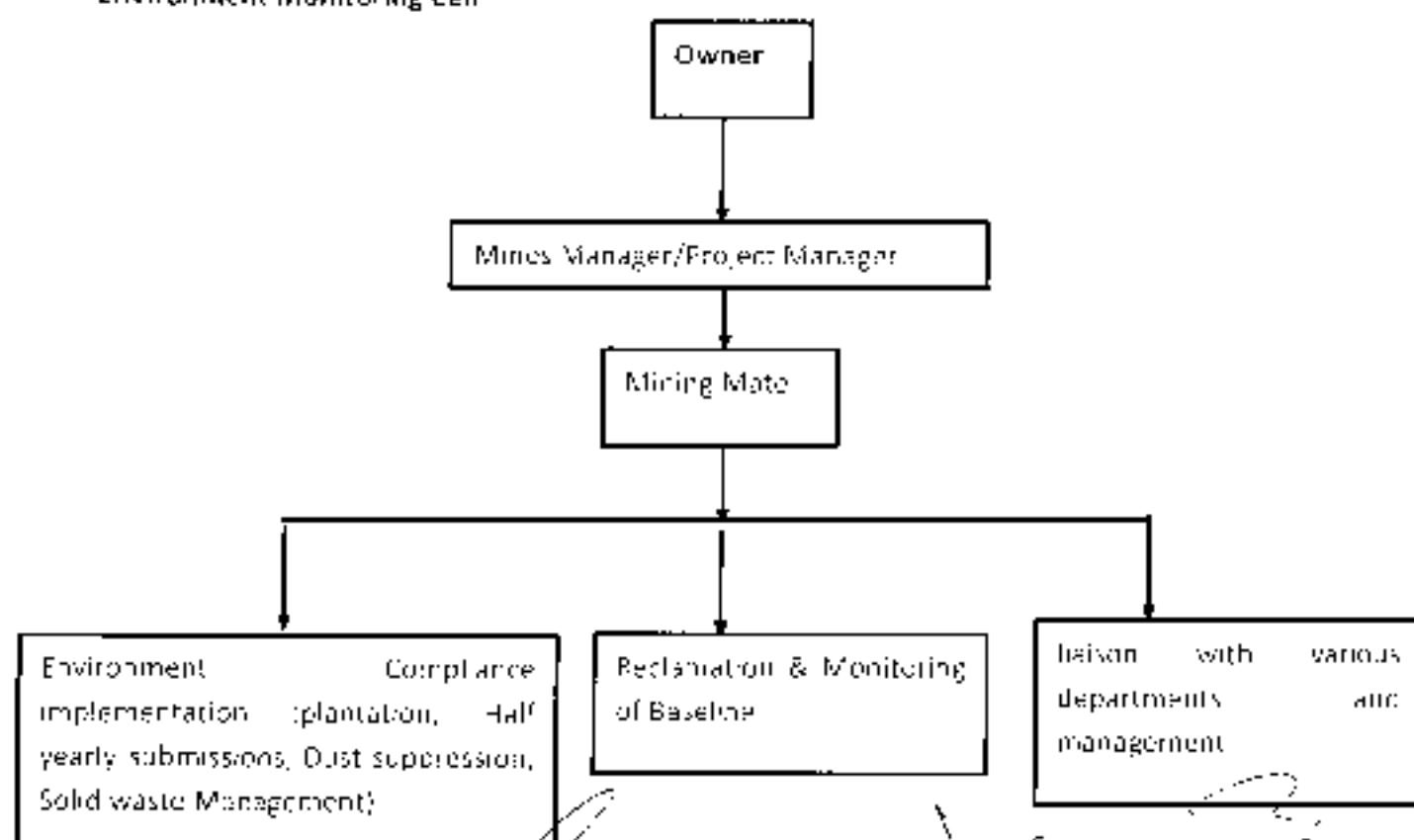
S. No.	Issue Raised	Action Plan	Timeline	Estimated Budget (INR)
1	Village road condition	Roads with potholes will be repaired	Within 6 months	1,20,000

2	Health camps	Free health check up camps	Every 6 months	50,000/year
3	Solar lighting	4-5 solar lights to be installed	By November each year	1,25,000
4	Mosquito infestation	Distribution of 150 mosquito nets to poor families	Within 1 month	15,000
5	Saree distribution in Festivals (Women)	200 Sarees distribution during festivals	Only festival time	54,000
Total				3,10,000

Need based Socio-Economic

Corporate Environmental Responsibility (CER) Plan and Budget							
S.No	Activities	Estimated Cost In Rs. (in Lakhs)	Time Bound				
			1 st year	2 nd year	3 rd year	4 th year	5 th year
1	Donation to the villagers under supervision of Gram Panchayat to support for marriage or death feast.	2	0.4	0.4	0.4	0.4	0.4
2	Sports Kit (cricket, football, etc)	0.5	0.7	0.7	0.4	-	-
3	Aesthetic enhancement of Playground	0.5	0.5	-	-	-	-
4	Repairs of Hand pumps	1.5	1.5	-	-	-	-
Total		4.5	2.6	0.6	0.5	0.4	0.4

Environment Monitoring Cell



Organization 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.

Environment Monitoring Plan (Operation Phase)

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.	3 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.

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.
- Gulland drain would be provided on upper contour around the quarry. Water collected in Gulland 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 machines & 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 Gull 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

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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.

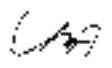
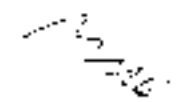
- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non availability of water), exhaust/ vacuum system will be provided which removes the dust from 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.

...  A   

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 Bidl 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 work place (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
- Overtaking 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 /hoppers/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.

✓ (1/11/21) A ✓ 5.35 ✓ ✓ ✓

- 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.

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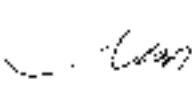
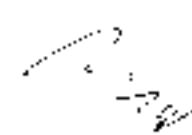
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Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for M/s UPS Stone & Chips of Shri Upendra Kumar Singh, Village : Khardiha, Thana : Naudihia Bazar, Thana no. : 368, Distt. : Palamau, Jharkhand (4.75 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I 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. A3-22/3/2024-IA + (L-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 Mein Ek Manna" and the details of the same shall be uploaded in the MeritBL Portal (<https://meritbl.mca.gov.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 sand 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 PFT, Audiometry and other required tests. Summary findings of same to be submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted 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. M/s UPS Stone & Chips of Shri Pradeep Kumar Singh, Village : Khardiha, Thana : Naudiha Bazar, Thana no. : 368, Distt. : Palamau, Jharkhand (4.65 Ha).

{Proposal no.: SIA/JH/MIN/ 538207 /2024}

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

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

Application for Environmental Clearance (EC) after ToR (Re-appraisal of Environment Clearance issued by DEIAA, Palamau).

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 119th meeting held on 17.12.2024 - 22.12.2024 and SEIAA, Jharkhand has approved the ToRs in 119th meeting held on 30th & 31st December, 2024. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/3432/2024/523, dated 13.01.2025. The final EtA / EMP submitted by PP to SEAC on 03.06.2025.

The project has been granted EC by DEIAA, Palamau vide letter no. EC/DEIAA/2016-17/33, dated 17.08.2017.

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, Palamau which has been taken up for consideration on 24.06.2025. 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 µg/m³ PM_{2.5} -567 µg/m³ SO₂ -18.2 NO₂ - 19.0 µg/m³ 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. 2653/M, dated 28.11.2024 by DMO, Palamau is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide letter no. 1544, dated 09.12.2024.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate regarding status of execution of compliance as no details have been provided. Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.



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

Application for: Proposed Capacity: 1,00,020 Cum Per Annum or 3,00,060 Ton Per Annum.

Project and Location Details:

S. No	Parameter	Details
1	Project Name	M/s JPS Stone & Chips
2	Partner's	M. Pradip Kumar Singh and Smt. Manita Kumari
3	Lessee Address	Village - Khairdih FO- Saraidih, PS- Naudih Bazar, District - Palamu, Jharkhand
4	Lease Area	Ha: 4.55 Ha Acres: 11.50 Acres
5	Cluster Details	Total area: (11.50-11.75=23.25 Acres) or 9.41 Ha Total no of Cluster: 01
6	Type of Land	Govt. Land
7	Project Cost	58 Lakhs
8	EMP Budget	Capita: 28.81 Lakhs Recurring: 8.60 Lakhs per year
9	New or Expansion	DEIAA TO SE AA (New)
10	Mineable Reserves	2440518.26 Cum 2980778.21 Tones
11	Mine Life	Up to the lease period i.e. 14.11.2017 to 13.11.2027.
12	Man power	18 persons
13	Water Requirement	Total water requirement is about 6.41 KLD. 0.81 KLD (Drinking & Domestic Uses) - 4.0 (Plantation) KLD - 1.6 KLD (Dust suppression).
14	Water Source	by Authorized hired water tankers.
15	DG Set / power	25 KVA / temporary setup for backup!
16	Crusher	No
17	Nearest Water Body	Unmanned irrigation Canal at 0.24km in NE direction. Batane River is about 13.1 km in N direction
18	Nearest Habitation	Khairdih Village is about 0.76 km in ENE direction
19	Nearest Rail Station	Haidar Nagar Railway Station is about 39.21 km in NW direction
20	Nearest Airport	Gaya International Airport is about 82.24 km in NE direction.
21	Nearest Forest	Kolrah Forest 13.25 E Bhuthi Forest 5.4 SSE Sahi PT 13.97 WSW Hulsem 6.78 WSW
22	Road & Highways	Patan Chhatrapur Road is about 9.35 km in W direction.

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		Manatu- Chhatarpur Road is about 1.67 km in S direction.
23	Approach Road	Approach road is 400 meter from mines area.

CO-ORDINATES

S. No	LATITUDE	LONGITUDE	S. No	LATITUDE	LONGITUDE
1	24° 18' 57.803" N	84°16' 57.443"E	11	24° 18' 54.305" N	84°17' 2.241" E
2	24° 18' 57.608" N	84°16' 59.151"E	12	24° 18' 53.049" N	84°17' 0.645" E
3	24° 18' 58.574" N	84°17' 0.408"E	13	24° 18' 52.546" N	84°16' 59.242"E
4	24° 18' 58.665" N	84°17' 2.839"E	14	24° 18' 51.882" N	84°16' 57.310"E
5	24° 18' 57.855" N	84°17' 2.253" E	15	24° 18' 50.724" N	84°16' 56.190"E
6	24° 18' 57.806" N	84°17' 2.483" E	16	24° 18' 50.670" N	84°16' 53.467"E
7	24° 18' 56.580" N	84°17' 2.355" E	17	24° 18' 54.347" N	84°16' 55.564"E
8	24° 18' 56.803" N	84°17' 4.547" E	18	24° 18' 56.399" N	84° 16' 56.117" E
9	24° 18' 56.487" N	84°17' 6.291" E			
10	24° 18' 54.010" N	84°17' 5.695" E			

LAND DETAILS

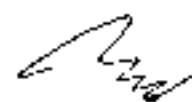
Khata no.	Plot no.
01	44 (P) & 45 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	i. The Letter of Intent (LoI) has been issued by District Mining Officer, Palamau vide letter no. 2221/M, dated 30.11.2016. ii. Lease Deed- 14.11.2017 to 13.11.2027.
2	CO	The CO, Naudihia Bazar, Palamau vide letter no. 222, dated 13.07.2016 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khaliyan.
3	DMO Cluster	DMO, Palamau vide memo no. 1220/M, dated 08.06.2024 certified that 01 other mining lease area (11.75 Acre) exists within 500 m radius from proposed project site and total area is 23.25 Acre or 9.41 Ha.
4	DFO Wild Life	Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 513, dated 28.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve.
5	DFO Territorial	Divisional Forest Officer, Medininagar Forest Division vide letter no. 5533, dated 03.01.2016 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 Palamau District (Sl. no. 26, Page no. 70)
7	Gram Sabha	Gram Sabha conducted on 05.11.2016.
8	Mine Plan / Mining Scheme Approval	Mining scheme approved by Additional Director, Geology, Hazaribag vide Letter No. G/2022-23 68, dated 04.06.2022
9	Previous Environmental Clearance (EC)	Previous EC granted by DFOAA, Palamau vide letter no. EC/DL AA/ 2016-17/33, dated 17.08.2017
10	Compliance report of EC	EC compliance report issued by JSPCB Regional Office, Dhanuwa vide letter no. 1544, dated 09.12.2024
11	Consent to Establish (CTE)	CTE issued by JSPCB vide Ref. no. JSPCB/HQ/RNC/CTE-2026491 /2018 /100, dated 23.01.2018.
12	Consent to Operate (CTO)	CTO issued by JSPCB vide Ref. no. JSPCB/HQ/RNC/CTO-13306820 /2022/1842 dated 29.12.2022
13	Production Report	Production report issued by DMO, Palamau vide memo no. 2054/M dated 28.11.2024
14	Public Hearing	Public Hearing conducted on 22.04.2025
15	Baseline Study Period	15 th October, 2024 to 15 th January, 2025.
16	Qualified Person	Dr. Anuraj Kumar Singh vide email dated 21.12.2024 affirmed that the mine plan has been prepared by him

Working Details

1	Mining Method	OCM & Semi-Mechanised
2	Lease Area	11.50 ACRES / 4.65 HA
		Life of Mine - Up to the lease period i.e. 14.11.2017 to 13.11.2027
3	Waste Generation	5 years-0.0
4	Stripping Ratio (m ³)	1:16
5	Working Days	300
6	Bench size & No	6m x 6m
7	Highest Elevation of lease Area	292Amsl
8	Lowest Elevation of lease Area	280Amsl
9	Ultimate Working Depth	250 Amsl
10	Water Table	242 Amsl (289GL)

11	Topography of Mine	The stone mine lease area situated in small hilly.
12	Explosive Requirement	108 kg per day (External Agency)
13	Diesel/Fuel requirement	440 Litres per day

Year wise Production Details

Year	Tonnage factor (t/m3)	Top Soil	Volume Stone (m3)	Year wise excavation in tonne
2022 - 23	3.0	Nil	1,00,020.00	3,00060.00
2023 - 24	3.0	Nil	1,000,20.00	3,00060.00
2024 - 25	3.0	Nil	1,000,20.00	3,00060.00
2025 - 26	3.0	Nil	1,000,20.00	3,00060.00
2026 - 27	3.0	Nil	1,000,20.00	3,00060.00
Total			5,00,100.00	1,5003,00.00

Land Use

Category	Existing in Acres	During Scheme Period of Mines Acre	During Conceptual Period/after closure of mines in acre
Quarry	2.63	9.12	9.40 (Entire area converted into water body)
Road	0.01	0.01	0.00
Overburden Dump	0.00	0.00	0.00
Garland Drain	0.00	0.26	0.00
Infrastructure	0.00	0.01	0.00
Green Belt	0.00	2.10	2.10
Total	2.64	11.50	4.47
Area which will remain untouched	8.86	0.00	0.00
Lease hold area	11.50	11.50	11.50

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	1344	8400	0.84	Neem Pipal Bargad Palash Fruit Bearing Trees
	Haul Road	3 x 3	532	400M Approach Road 400/3= 133Plants 133x4row=532Plant		
2nd	Care & Protection	---	---	---	---	Mango, Jackfruit, Guava
3rd	Care & Protection	---	---	---	---	
4th	Care &	---	---	---	---	

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13	Clothes & Blanket Distribution	22,500	-
Total EMP Budget		28,81,500	8,70,950

Need based Socio-Economic

Corporate Environmental Responsibility (CER) Plan and Budget

S.No	Activities	Estimated Cost In Rs. (In Lakhs)	Time Bound				
			1 st year	2 nd year	3 rd year	4 th year	5 th year
1	Donation to the villagers under supervision of Gram Panchayat to support for marriage or death feast.	2	0.4	0.4	0.4	0.4	0.4
2	Sports Kits(cricket, football, nets, etc)	0.5	0.2	0.2	0.1	-	-
3	Aesthetic enhancement of Playground	0.5	0.5	-	-	-	-
4	Repairs of Hand pumps	1.5	1.5	-	-	-	-
Total		4.5	2.6	0.6	0.5	0.4	0.4

Additional Blasting cost

In consonance with NGT guidelines dated 21.07.2020, when blasting is involved a setback of a minimum of 200 meters should be left from the habitation area towards mine site. As per the letter Issued by the CO, Nauhidā Bazar vide letter no.222/Ra. Dated 13/07/2016, there is no habitation within 500m radius form the mining site.

Public hearing:

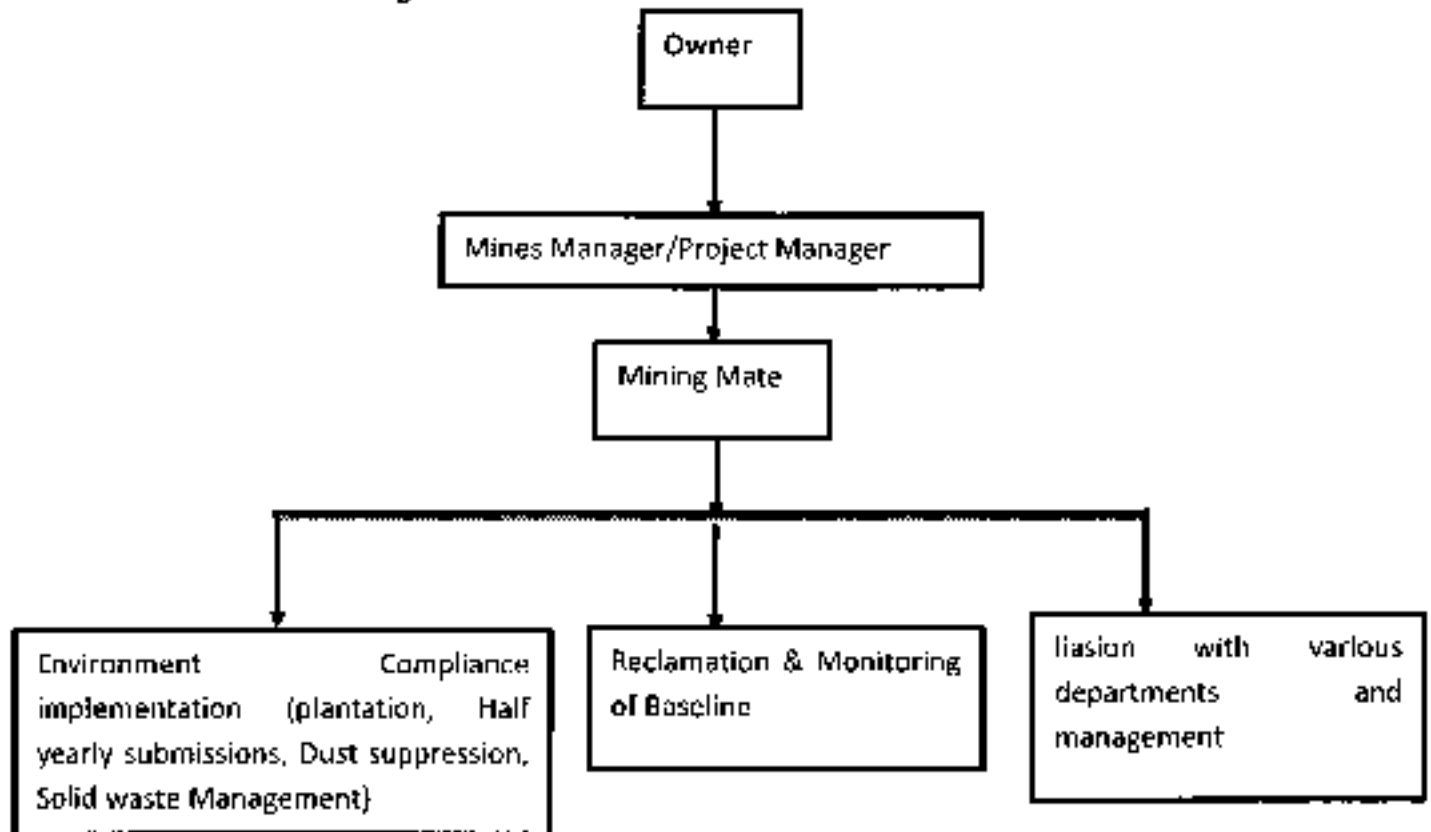
Public hearing was successfully executed on date 22/04/2025.

S.No.	Name and address of the present villagers.	Questions / Suggestions / Issues etc.	Unit representative's response / solution.
1.	Dilip Kumar Singh Village Khardiha	What support will be provided by the mine owner for repairing the potholes on the rural road?	The road will be repaired from time to time which will help the villagers in commuting.
2	Dharamendra Kumar Singh, Village Khardiha	What will be the solution to the problem of drinking water?	Drinking water will be provided by getting a boring done at the place where the hand pump has dried up and installing a small tank along with the hand pump.
3	Vinod Kumar Singh, Village Khardiha	Will the blasting take place at the scheduled time and what safety measures will be taken by the mine owners?	Blasting will be done during the day from 01:00 PM to 02:00 PM. Siren will be sounded before blasting. Traffic will be closed on the village roads within 500 meter radius. So that citizens can be saved from the danger caused by blast.
4	Sudheer Kumar Singh, Village - Khardiha	What will be the dust mitigation measures?	Water will be sprinkled three times a day by the mine owner on haul road, approach road.

5	Mancy Bhuiyan Khardiha	Kumar Village	How will employment opportunities be available?	Local people will be given priority in the available employment according to their qualifications.
6	Raja Village	Singh Khardiha	What help will the robot provide for health checkup?	Health checkup camps will be organized twice a year in which people above the age of 40 years will be screened.
7	Ashay Village	Thakur Khardiha	What help will the villagers get from the mine owner during the winter season?	Blankets will be made available/distributed to needy people during the winter season.
8	Santosh Village	Bhuiyan Khardiha	There is a lot of mosquito infestation in the village. What help will the mine owner provide to solve this problem?	The mine owner will distribute mosquito repellents to the needy people.
9	Shravan Singh Khardiha	Kumar Village	What will be done by the mine owner when the mine's time limit expires?	At the time of closing the mine, a fence will be erected around the mine. After the mine's life is over, whatever waste material is left will be dumped in some part of the mine. The remaining pits of the mine will be used for fish farming, irrigation etc. for the local people.
10	Dinesh Singh Khardiha	Kumar Village	Under which rule and how will blasting in the mine be done?	Before the opening of the mine, Expert Blaster, Mines Manager and Foreman will be appointed who will be DGM Certified. Proper benching system will be installed in the mine whose height will be 6x6 meters and wagon drill and control blasting will be done in it as per MSMB, 1961.

Action plan with time bound plan

S. No.	Issue Raised	Action Plan	Timeline	Estimated Budget (INR)
1	Drinking water availability	Bore hand pumps (2 units), install 5000 water tanks	Within 6 months	₹ 1,20,000
2	Health camps	Organize health camps twice a year with priority for 40+ age group	Every 6 months	₹ 50,000/year
3	Winter support (blankets)	Distribution of 150 blankets to poor families	By November each year	₹ 22,500
4	Mosquito infestation	Distribution of 150 mosquito nets to poor families	Within 1 month	₹ 15,000

Environment Monitoring Cell**Fig: Organization 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.

Environment Monitoring Plan (Operation Phase)**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 PM ₁₀ , PM _{2.5} , SO ₂ , NO _x in the vicinity of the mine area. In the surrounding area covering project site only	3 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area	3 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 gummy soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gummy soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

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

Air Quality Management

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

Mitigation measures

- 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 favourable weather conditions.
- iv. **Operation of Diesel Equipment's** – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.
- v. **Loading of Product on Truck** – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.
- vi. **Movement of Trucks on Road** – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:
- Regular water sprinkling on Haul road by using water Tankers.
 - Regular repair of Haul road.
 - All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

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

Hazard identification & Risk Analysis in Stone Mining operation

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

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

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

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

Preventive Measures:

Slope Failure

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

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

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 105.4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 105.5) 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 material's falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

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

Dust generation during drilling

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

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

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- 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

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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 mishaps, 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 work place (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 (Possible 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:

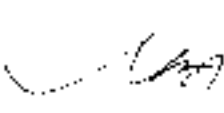
- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are 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.

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- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling into 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 M/s UPS Stone & Chips of Shri Pradeep Kumar Singh, Village : Khardiha, Thana : Naudaha Bazar, Thana no. : 368, Distt. : Palamau, Jharkhand (4.65 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I 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, whichever is less.
- II. In compliance of O.M no. F.No. 1A3-22/3/2024-1A.III (1-241594) 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 Mu Ke Naam" and the details of the same shall be uploaded in the Meri Life 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 new 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

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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.

25. Chandangaria Stone Deposit of M/s Swastik Mining Agency (Partners : Shri Nehal Kumar Chawda), Village : Chandangaria, Anchal : Shikaripara, Distt. : Dumka, Jharkhand (2.917 Ha).

(Proposal no.: SIA/JH/MIN/ 537933 /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 24.06.2025.

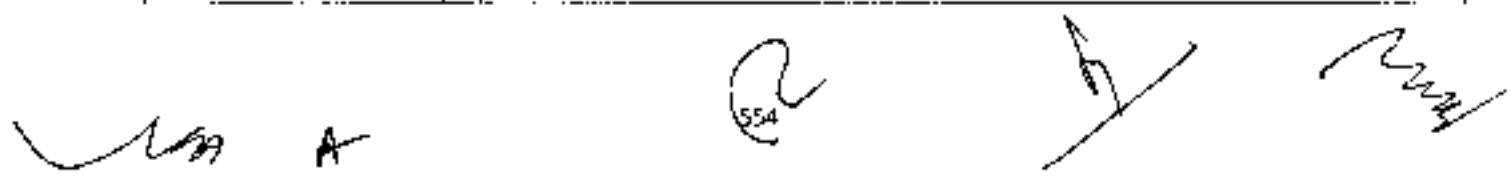
Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA Notification, 2006.

ToR Application for: Proposed Capacity: 65,132Cum Per Annum or 1,75,856 Ton Per Annum

Project and Location Details:

S. No	Parameter	Details
1	Project Name	: Chandangaria Stone Mine of M/s Swastik Mining Agency
2	Partner's	: Shri Nehal Kumar Chawda, Shri Uttam Kumar Singh & Shri Sandeep Kumar Mahato
3	Lessee Address	: Gram+P.O-Bakudih, Dist.-Sahibganj, Jharkhand.



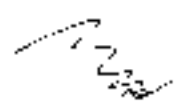
4	Lease Area	Acres: 7.71	Hy: 2.91 /
5	Cluster Details	Total Area: (6.99+5.19+5.49+6.07+4.89+7.40+4.80+7.21+48.04) Acres or 19.44 Ha)	Total no of cluster: 7 nos
6	Type of Land	Barayati Land	
7	Project Cost	55.00 Lakhs	
8	FMF Budget	Capital: 21.97 Lakhs	Recurring: 8.82 lacs / year
9	New or Expansion	New	
10	Mineable Reserves	3,11,485.92 Cum	8,41,012 Tonnes
11	Mine Life	5 Years	
12	Man power	17 persons	
13	Water Requirement	Total water requirement is about 13.555 KLD (0.95 KLD (Drinking & Domestic Use) + 5.0 (Plantation) KLD + 8.0 KLD (Dust Suppression).	
14	Water Source	The drinking water will be available from nearby village by tractor tank manually by labors at the site.	
15	DG Set / power	25 KVA (Temporary setup for Backup)	
16	Crusher	Not Proposed	
17	Nearest Water Body	Kairabani Dam is about 13.77 km in W direction Brahmani River is about 8.11 km in N direction	
18	Nearest Habitation	Nearest habitation in ENE direction	
19	Nearest Rail Station	Pinargaria Railway Station is about 7.21 km in NE direction	
20	Nearest Airport	Silo Kanhu Airport is about 31.92 km in WNW direction	
21	Nearest Forest	PURBAHAR P.F. 2.61 SE SHIKARIPARA P.F. 7.13 SSE LITIA PAHAR P.F. 5.21 SW	
22	Road & Highways	Sisunga- Benargaria road is about 3.17 km in ENE direction Dumka- Ramchahal Road (NH-114A) is 13.71 KM away from the mine site in W direction.	
23	Approach Road	Approach road is 277 Meter from mines area	

CO-ORDINATES

S. No	LATITUDE	LONGITUDE	S. No	LATITUDE	LONGITUDE
1	24° 10' 40.182" N	87° 34' 48.538" E	19	24° 10' 48.443" N	87° 34' 36.225" E
2	24° 10' 40.358" N	87° 34' 47.390" E	20	24° 10' 47.655" N	87° 34' 35.967" E
3	24° 10' 40.999" N	87° 34' 46.326" E	21	24° 10' 47.125" N	87° 34' 36.500" E
4	24° 10' 41.912" N	87° 34' 45.565" E	22	24° 10' 46.555" N	87° 34' 38.797" E







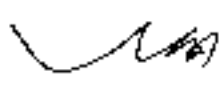
5	24° 10' 42.152" N	87° 34' 46.191" E	23	24° 10' 45.536" N	87° 34' 38.345" E
6	24° 10' 42.576" N	87° 34' 46.277" E	24	24° 10' 44.451" N	87° 34' 39.578" E
7	24° 10' 42.573" N	87° 34' 45.701" E	25	24° 10' 43.323" N	87° 34' 40.837" E
8	24° 10' 43.358" N	87° 34' 46.164" E	26	24° 10' 41.887" N	87° 34' 42.416" E
9	24° 10' 44.392" N	87° 34' 44.815" E	27	24° 10' 40.973" N	87° 34' 43.587" E
10	24° 10' 44.802" N	87° 34' 43.566" E	28	24° 10' 40.311" N	87° 34' 44.458" E
11	24° 10' 43.748" N	87° 34' 42.949" E	29	24° 10' 39.648" N	87° 34' 45.362" E
12	24° 10' 44.061" N	87° 34' 42.258" E	30	24° 10' 38.895" N	87° 34' 46.421" E
13	24° 10' 44.425" N	87° 34' 41.613" E	31	24° 10' 39.424" N	87° 34' 46.865" E
14	24° 10' 45.230" N	87° 34' 41.981" E	32	24° 10' 39.030" N	87° 34' 47.469" E
15	24° 10' 45.898" N	87° 34' 40.773" E	33	24° 10' 38.135" N	87° 34' 47.067" E
16	24° 10' 46.250" N	87° 34' 39.643" E	34	24° 10' 37.262" N	87° 34' 47.658" E
17	24° 10' 47.466" N	87° 34' 40.345" E	35	24° 10' 38.169" N	87° 34' 48.799" E
18	24° 10' 47.929" N	87° 34' 38.238" E			

LAND DETAILS

Khata No.	Plot No.
15	924(P), 925
16	952(P)
20	926(P), 927, 931(P), 932(P), 951(P)
32	934
36	936(P)

STATUTORY CLEARANCES

1	LOI / Lease docs	: The Letter of Intent (LOI) has been issued by District Mining Officer, Dumka vide letter no. 1014/M, dated 31.08.2024.
2	CO	: The CO, Shikaripara vide letter no. 432/Ra., dated 30.05.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatyan & Register II.
3	DMO Cluster	: DMO, Dumka vide memo no. 505/M, dated 12.03.2025 certified that 07 other mining lease area (6.99 Acre, 5.19 Acre, 5.49 Acre, 6.07 Acre, 4.89 Acre, 7.40 Acre & 4.80 Acre) exists within 500 m radius from proposed project site and total area is 48.04 Acre.
4	DFO Wild Life	: DFO, Wildlife Division, Hazaribag vide letter no. /81, dated 08.05.2024 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. 498 dated 11.03.2024 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 Dumka District (Sl. no. 61, Page no. 293).
7	Gram Sabha	Gram Sabha conducted on 08.07.2024.
8	Mine Plan Approval	Approved by DMD Dumka vide Letter No. 78/M, dated 13.01.2025
9	Qualified Person	Shri Vidya Bhushan Mishra through letter dated 22.08.2025 affirmed that the mine plan has been prepared by him
10	Baseline study period	1 st March, 2025 to 30 th May, 2025.

WORKING DETAILS

1	Mining Method	OCM & Semi Mechanised
2	Lease Area	7.71 ACRES / 2.917 HA
3	Waste Generation	5 years-59,924 Cum
4	Stripping Ratio (m ³)	1.0:0.3
5	Working Days	300
6	Bench: size & No	2m x 6m
7	Highest Elevation of lease Area	132 Amsl
8	Lowest Elevation of lease Area	139 Amsl
9	Ultimate Working Depth	854msl
10	Water Table	76Amsl (13 BGL)
11	Topography of Mine	The mine area (outcrop)
12	Explosive Requirement	21.26 kg (External Agency)
13	Diesel/Fuel requirement	228 litres per 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	59824	161551	14834	3149	17983
2nd	65132	175856	12916	3478	16344
3rd	61679	166533	0	3246	3246
4th	61634	166412	10824	3244	14068
5th	62379	159423	0	3283	3283
Total	310658	838776	38574	16350	54924

LAND USE

Land Utilization	Existing Land use Hectares	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry	0.0	1.946 (0.172ha area shall be Backfilled.)	1.946 (converted into water reservoir)

SS7

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Waste Dump	0.00	0.00 (Comes under quarry)	(Comes under quarry)
Road	0.0	0.00 (Comes under quarry)	0.00
Infrastructure (Crusher)	0.0	0.0	0.0
Safety Zone Plantation	0.0	0.971	0.971
Total	0.00	2.917	2.917
unused area	2.917	0.00	0.0
Total Applied Lease Area	2.917		

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 1926 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 1554 plants on 0.971 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	1554	9710	0.971	Pipal Bargad Palash Fruit Bearing Trees Mango, Jackfruit, Guava, Jamun
	Haul Road	3.0 x 3.0	372	277 meter Approach Road $277/3 = 92.5$ say 93 Plants 2row plantation of both side road $93 \times 4 = 372$ Plant		
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			1926	9710	0.971	

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

to be maintained and will be submitted with compliance report.

Environment Management Budget

S NO.	Particulars	Budget Provisions (Rs)	
		Capital	Recurring
Water Demand			
1(a)	Overhead water sprinkling Cost for 300 days for 3.0 KLD @5 KL tanker capacity, Rupees 500/- per tanker	1,00,000	2,40,000
	Green belt Cost for 300 days for 5.0 KLD @5 KL tanker capacity, Rupees 500/- per tanker		1,50,000
	& One dedicated tanker of 5 KL for Greenbelt Management	10,00,000	50,000
1(b)	Handling of sewage water	0	28,500
2	Prepare & Maintenance of approach road (Max. Road length 277.5 m, Width 4.0 m) @ 500Rs. /Meter	1,38,750	15,000
3	Monitoring (Air, Water, Soil & Noise)	Nil	1,00,000
4	Settling tank 2 in no's (LBP 12 m ² 7 m ² 4 m ²) & Garland drains	2,00,000	30,000
5	Wire Fence 1295 m x 300 cm meter	3,80,700	40,000
Plantation Scheme			
Plantation in consultation with DFO & Gram Panchayat and conversion to Grazing land as far as possible			
6	Green belt development safety zone 7 (intra and along the road (for each plants including hedges and fences and tree guard at approach roads), 1926 No. of plants x 500 Rs.	9,63,000	2,00,000
Solid Waste Management			
7	Bins 2 Nos.	1,500	4,000
8	Transport of Dry Waste	5,000	
9	Vehicle Maintenance +PUC Certification	Nil	25,000
Total EMP Budget		27,97,950	8,82,560

Environment Monitoring Cell

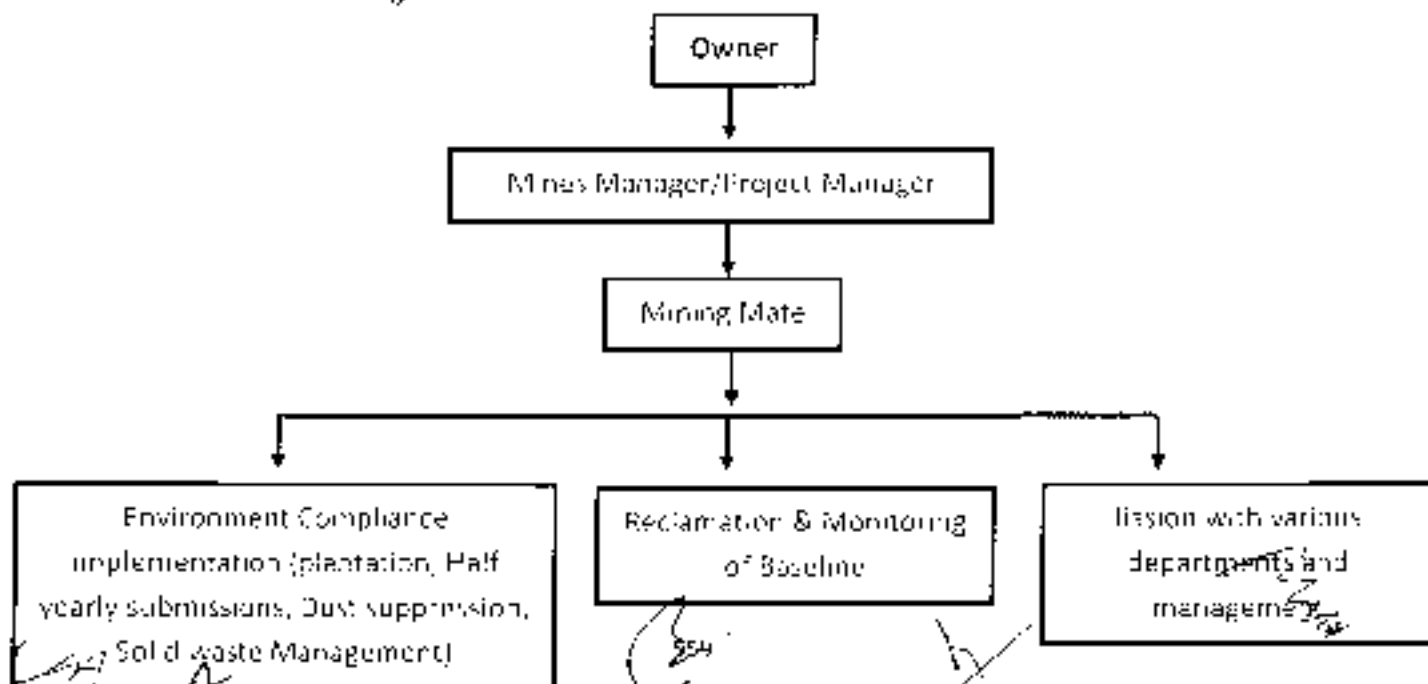


Fig: Organization Chart for Environment Management Cell

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.

Environmental Monitoring period: March 2025 to May 2025

Baseline Monitoring Location

AIR MONITORING LOCATIONS

S. No.	Particulars	Distance (KM)	Direction	Land use	Latitude	Longitude
AAQ1	Project Site	-	-	Project site	24°10'42.16"N	87°34'43.29"E
AAQ2	Chandangaria Village	0.23	SSW	Residential Area	24°10'35.45"N	87°34'38.83"E
AAQ3	Saharpur Village	0.38	FNF	Residential Area	24°10'47.20"N	87°34'58.47"E
AAQ4	Primary School Saharpur	0.73	ENE	Silent Zone	24°10'47.08"N	87°35'11.35"E
AAQ5	Chandangaria School	1.46	SE	Silent Zone	24°10'3.70"N	87°35'23.64"E
AAQ6	Ghutkandar Village	1.25	SW	Residential Area	24°10'17.64"N	87°34'7.47"E
AAQ7	Shiv Mandir Benagariya	3.41	E	Silent Zone	24°10'47.98"N	87°36'48.63"E
AAQ8	Shikaripara Village	2.29	W	Residential Area	24°10'39.74"N	87°33'17.90"E

Value of Test report

PM ₁₀ (µg/m ³)					PM _{2.5} (µg/m ³)				
Monitoring Station	Min	Max	Average	98% Per	Monitoring Station	Min	Max	Average	98% Per
AAQ 1	49.7	55.6	52.5	55.3	AAQ 1	36.9	39.9	38.6	39.9
AAQ 2	57.8	63.3	60.5	63.1	AAQ 2	38.8	42.7	40.9	42.6

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AAQ 1	59.1	55.9	62.5	65.5	AAQ 3	39.8	45.9	44.4	45.5
AAQ 4	42.9	48.9	46.3	43.8	AAQ 4	29.1	25.7	32.9	35.2
AAQ 5	45.2	51.4	48.7	51.4	AAQ 5	29.9	25.2	32.7	35.2
AAQ 6	44	50.4	47.7	50.3	AAQ 6	28.1	36.1	23.2	30
AAQ 7	37.7	43.6	40.9	47.5	AAQ 7	26.6	34.1	30.3	33.8
AAQ 8	40.7	50.4	47.9	50.7	AAQ 8	31.6	36.6	34.7	36.4

SO₂ (µg/m³)

NO₂ (µg/m³)

Monitoring Station	Min	Max	Average	98% Per	Monitoring Station	Min	Max	Average	98% Per
AAQ 1	7.4	10.4	9.5	10.4	AAQ 1	10.7	14.4	13	14.3
AAQ 2	9.9	15.1	12	15.4	AAQ 2	12.1	15.6	14.7	16.5
AAQ 3	10.1	14.4	11.9	14.3	AAQ 3	10.5	17.1	14.1	16.7
AAQ 4	8.8	15	11	13	AAQ 4	10.9	15.5	13.8	15.6
AAQ 5	10.1	14.8	12.8	14.5	AAQ 5	12.9	18.9	16.7	18.7
AAQ 6	10.5	14.9	13.3	14.9	AAQ 6	14.1	17.6	16.5	17.6
AAQ 7	10.5	11.7	10.3	11.6	AAQ 7	12.4	17.1	14.8	17.9
AAQ 8	9.6	12.4	11.2	12.4	AAQ 8	14.1	17.4	15.8	17.5

CO (mg/m³)

Monitoring Station	Min	Max	Average	98% Per
AAQ 1	0.8	1.03	0.94	1.03
AAQ 2	0.89	1.26	1.06	1.24
AAQ 3	0.87	1.29	1.08	1.28
AAQ 4	0.84	1.22	1.01	1.22
AAQ 5	0.86	1.42	1.1	1.41
AAQ 6	0.78	1.41	1.07	1.39
AAQ 7	0.69	1.14	0.91	1.12
AAQ 8	0.8	1.24	1.01	1.22

S. No.	Particulars	Distance (KM)	Direction	Landuse	Latitude	Longitude
NQ1	Project Site			Project site	24°10'42.16"N	87°34'44.29"E
NQ2	Chendargana Village	0.23	SSW	Residential Area	24°10'35.45"N	87°34'35.83"E
NQ3	Saharpur Village	0.28	ENE	Residential Area	24°10'47.20"N	87°34'38.47"E
NQ4	Primary School Saharpur	0.73	NI	Silent Zone	24°10'47.06"N	87°35'11.49"E
NQ5	Chandargana School	1.05	SE	Silent Zone	24°10'27.70"N	87°35'23.50"E

Sl. No.	Monitoring Stations	Zone	Equivalent Noise Level, dB (A)			
			Observed Value, dB(A)		Prescribed	
					Limit, dB(A)	
			Day	Night	Day	Night
Core Zone						
1	NQ1	Project Site	58.9	43.3	75	70

Buffer Zone						
2	NQ2	Residential Area	41.2	29.2	55	45
3	NQ3	Residential Area	39.2	28.6	55	45
4	NQ4	Silent Zone	36.3	28.1	50	40
5	NQ5	Silent Zone	32.2	27.2	50	40

SOIL MONITORING LOCATIONS

S. No.	Particulars	Distance (KM)	Direction	Landuse	Latitude	Longitude
SQ1	Project Site		-	Project site	24°10'42.16"N	87°34'43.29"E
SQ2	Chandangaria Village	0.23	SSW	Residential Area	24°10'35.45"N	87°34'38.83"E
SQ3	Saharpur Village	0.38	ENE	Residential Area	24°10'47.20"N	87°34'58.47"E
SQ4	Primary School Saharpur	0.73	ENE	Silent Zone	24°10'47.08"N	87°35'11.35"E
SQ5	Chandangaria School	1.46	SE	Silent Zone	24°10'3.70"N	87°35'23.64"E

SL No.	SOIL	UNITS	METHOD	SQ-1	SQ-2	SQ-3	SQ-4	SQ-5
1	Texture	...	IS 2720 (Part-4)	Sandy Clay Loam	Sandy Clay Loam	Sandy Clay Loam	Sandy Clay Loam	Sandy Clay Loam
2	Sand	%	IS 2720 (Part-4)	53.1	55.2	54.3	56.8	58.3
3	Silt	%	IS 2720 (Part-4)	28.7	27.8	28.4	26.1	24.2
4	Clay	%	IS 2720 (Part-4)	18.2	17	17.3	17.1	17.5
5	Electrical Conductivity (EC)	µs/cm	IS 14767	19.9	21.1	21.6	22	22.4
6	pH	...	IS 2720 (Part-26)	7.55	7.46	7.75	7.77	7.8
7	Bulk Density	g/cm ³	IS 2386 (Part-4)	1.33	1.39	1.44	1.35	1.4
8	Water Holding Capacity (WHC)	%	IS 2720 (Part-2)	35.8	36.9	36.2	36.8	34.7
9	Sodium, (Na)	mg/kg	USEPA-3050A	121.3	123.2	119.8	121.9	125.5
10	Potassium (K)	mg/kg	USEPA-3050A	220.4	231.5	249.2	222.3	229.9
11	Total Nitrogen (N)	mg/kg	ETS/STP/SOIL-15	150.44	165.11	162.18	177.36	173.61
12	Chloride, (Cl)	mg/kg	BS 1377-3	455.8	470.2	438.2	451.5	430.3
13	Magnesium, (Mg)	mg/kg	ETS/STP/SOIL-08	398.5	380.4	413.8	363.7	386.6
14	Organic Matter, (OM)	%	IS 2720 (Part-22)	2.52	2.51	2.58	2.89	2.63

15	Aluminium (Al)	mg/kg	USEPA 3050A	0.15	0.17	0.36	0.50	0.58
16	Cadmium (Cd)	mg/kg	USEPA 3050A	0.40	0.5	0.49	0.48	0.44
17	Chromium (Cr)	mg/kg	USEPA-3050A	0.20	0.28	0.27	0.50	0.4
18	Copper (Cu)	mg/kg	USEPA-3050A	1.22	1.26	1.41	1.39	1.44
19	Iron (Fe)	mg/kg	USEPA 3050A	175.2	144	206.8	155.1	133.6
20	Lead (Pb)	mg/kg	USEPA-3050A	2.00	1.63	2.11	2.14	1.98
21	Manganese (Mn)	mg/kg	USEPA-3050A	3.52	3.89	3.29	3.17	3.78
22	Zinc (Zn)	mg/kg	USEPA 3050A	1.73	1.66	1.8	1.77	1.81
23	Barke (Ba)	mg/kg	USEPA-3050A	1.19	1.45	1.13	1.35	1.29
24	Calcium (Ca)	mg/kg	IS 12120 (Part-2)	1022	1094.5	1107.9	998.5	1130.8
25	Fluoride (F ⁻)	mg/kg	CTE/STP/SCIL-16	40.1	49.1	39.9	46.5	43.3

GROUND WATER MONITORING LOCATIONS

S. No.	Particulars	Distance (KM)	Direction	Landuse	Latitude	Longitude
GWQ1	Chandargana Village	0.75	SSW	Residential Area	24°15'43.10"N	87°34'38.44"E
GWQ2	Primary School Sanargan	0.72	ENE	Silent Zone	24°15'47.04"N	87°35'11.35"E
GWQ3	Shiv Mandir Beraganga	2.41	E	Silent Zone	24°15'47.68"N	87°36'45.07"E

SURFACE WATER MONITORING LOCATIONS

S. No.	Particulars	Distance (KM)	Direction	Landuse	Latitude	Longitude
SWQ1	Upstream Brahman River	0.85	NW		24°15'43.16"N	87°34'00.20"E
SWQ2	Downstream Brahman River	0.91	NNE		24°15'43.40"N	87°34'59.17"E

S. No.	GROUNDWATER	Units	METHOD	GWQ1	GWQ2	GWQ3
1	Temperature	°C	APHA 2550.9			
2	Color	H.U	APHA 2170.2	<50	<50	<50
3	Odor	Qualitative	APHA 2110.8	Agreeable	Agreeable	Agreeable
4	Taste	Qualitative	APHA 2150.2	Agreeable	Agreeable	Agreeable
5	pH	-	APHA 4520.11	7.7	7.61	7.69
6	Conductivity	µS/cm	APHA 2170.15	<100	<100	<100
7	Total Dissolved Solids (TDS)	mg/l	APHA 2540.0	105.9	868.3	880.5
8	Fluoride (F ⁻)	mg/L	APHA 4520.11C	0.22	0.28	0.19
9	Total Alkalinity (CaCO ₃)	mg/l	APHA 2540.11	151.8	115.5	140.7
10	Total Hardness (CaCO ₃)	mg/L	APHA 2540.0	170.8	213.7	199.5

11	Calcium, (Ca)	mg/L	APHA 3500: (Ca)-B	78	77.2	68.8
12	Chloride, (Cl)	mg/L	APHA 4500: (Cl)-B	129.3	123.8	95.5
13	Magnesium, (Mg)	mg/L	APHA 3500: (Mg)-B	8.2	7.75	8.19
14	Nitrate, (NO ₃)	mg/L	APHA 4500: (NO ₃)-D	0.98	1.01	0.81
15	Sulphate, (SO ₄)	mg/L	APHA 4500: (SO ₄)-E	44.5	51.05	50.44
16	Boron, (B)	mg/L	APHA 4500: (B)-C			
17	Aluminium, (Al)	mg/L	APHA-3120B	<2.0	<2.0	<2.0
18	Arsenic, (As)	mg/L	APHA 3120B	<0.01	<0.01	<0.01
19	Cadmium, (Cd)	mg/L	APHA 3120B	<0.001	<0.001	<0.001
20	Chromium, (Cr)	mg/L	APHA-3120B	<0.01	<0.01	<0.01
21	Copper, (Cu)	mg/L	APHA 3120B	0.07	0.07	0.05
22	Iron, (Fe)	mg/L	APHA-3120B	0.26	0.22	0.27
23	Lead, (Pb)	mg/L	APHA-3120B	<0.01	<0.01	<0.01
24	Manganese, (Mn)	ug/L	APHA-3120B	<1.0	<1.0	<1.0
25	Mercury, (Hg)	mg/L	APHA-3114C	<0.001	<0.001	<0.001
26	Selenium, (Se)	mg/L	APHA-3120B	<1.0	<1.0	<1.0
27	Zinc, (Zn)	mg/L	APHA-3120B	0.88	0.79	0.91
28	Anionic Detergent, (MBAS)	mg/L	APHA 5540-C			
29	Mineral Oil	mg/L	IS 3025 (Part-39)			
30	Phenolic Compound, (C ₆ H ₅ OH)	mg/L	APHA 5530-C	<0.001	<0.001	<0.001
31	Conductivity	us/cm	APHA 2510-B:	555.92	605.83	637.63
32	Total Coliform Count	per 100mL	IS 15185	Absent	Absent	Absent
33	Escherichia coli	per 100mL	IS 15185	Absent	Absent	Absent

S. No.	SURFACE WATER	UNITS	METHOD	SW 1	SW 2
1	Temperature	°C	APHA 2550-B		
2	Colour	Hazen	APHA 2120-B	<5.0	<5.0
3	Odour	...	APHA 2150-B	Agreeable	Agreeable
4	pH	...	APHA 4500-H+	7.15	7.09
5	Total Dissolved Solids, (TDS)	mg/L	APHA 2540-C	668.9	791.5
6	Biological Oxygen Demand (BOD _{5@27°C})	mg/L	IS: 3025 (Part-44)	3.77	4.42
7	Chemical Oxygen Demand, (COD)	mg/L	APHA 5220-B	14.71	21.36
8	Calcium, (Ca)	mg/L	APHA 3500: (Ca)-B	56.6	72.2
9	Turbidity	NTU	APHA 2130-D	9.12	17.13
10	Total Hardness, (CaCO ₃)	mg/L	APHA 2340-C	156.3	229.8
11	Dissolved Oxygen (DO)	mg/L	APHA 4500: (O)-C	6.17	4.88
12	Anionic Detergent, (MBAS)	mg/L	APHA 5540-C		
13	Magnesium, (Mg)	mg/L	APHA 3500: (Mg)-B	12.47	14.02
14	Chloride, (Cl)	mg/L	APHA 4500: (Cl)-B	61.2	65.5
15	Conductivity	us/cm	APHA 2510-B	650.3	670.39
16	Nitrate, (NO ₃)	mg/L	APHA 4500: (NO ₃)-B	0.84	0.91
17	Sulphate, (SO ₄)	mg/L	APHA 4500: (SO ₄)-E	30.59	48.54
18	Potassium, (K)	mg/L	APHA-3120B		
19	Fluoride, (F)	mg/L	APHA 4500: (F)-D	0.23	0.27
20	Chromium, (Cr ⁺⁶)	mg/L	APHA 3500: (Cr)-B	<0.01	<0.01
21	Cyanide, (CN ⁻)	mg/L	APHA 4500: (CN)-D	<0.02	<0.02
22	Cadmium, (Cd)	mg/L	APHA 3120B	<0.001	<0.001
23	Sodium, (Na)	mg/L	APHA-3120B		
24	Copper, (Cu)	mg/L	APHA 3120B	<0.05	<0.05
25	Iron, (Fe)	mg/L	APHA-3120B	0.22	0.29

27	Copper (Cu)	mg/L	APHA 4500/Cu-C	<0.05	<0.05
28	Zinc (Zn)	mg/L	APHA 4120/C	0.15	0.06
29	Manganese (Mn)	mg/L	APHA 4120/C	<0.1	<0.1
30	Phenolic Compound (C ₆ H ₅ OH)	mg/L	APHA 5530/C		
31	Mineral Oil	mg/L	IS 1025 (Part 29)		
32	Total Coliform Count	MPN/100mL	IS 1022	755	342
33	Fecal Coliform Count	MPN/100mL	IS 1022		

Environment Monitoring Plan (Operation Phase)

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, SO ₂ , NO _x in the vicinity of the mine area, in the surrounding area covering project site only	3 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area	1 Surface water 2 Ground water	5 x 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.

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. Decanted water will be allowed to flow into natural drainage.
- Gulland drain would be provided on upper contour around the quarry. Water collected in Gulland 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 decanting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

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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 Gaur 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.

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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"

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 vice 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 hence 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 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 initiation 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 Bird, etc. will be put in place.
- Explosives shall be conveyed in special container.
- 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

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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 work place (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:

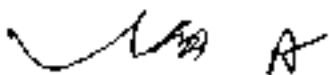
- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

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.

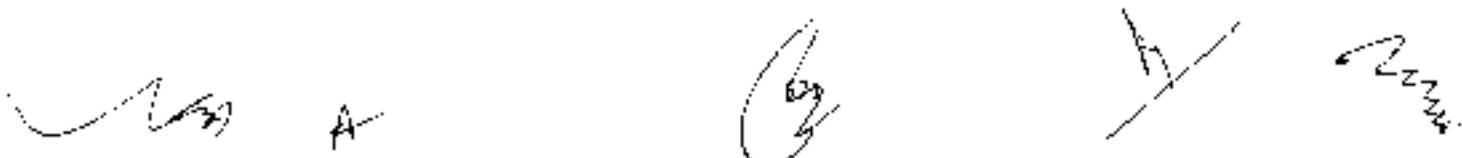


Undertaking submitted affirming:

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

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.06.2025, 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 II alongwith following specific condition :-

1. In compliance of OM no. F.No. IA3-22/3/2024 (A.11/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 Nloom" and the details of the same shall be uploaded in the Meritree Portal (<https://meritree.nic.in/>). 10% of the total green belt proposed shall be allocated under this clause



26. Golpur Stone Deposit of M/s Majestic Stone Works, Village : Golpur, Thana no. : 85, Anchal : Pakuria, Distt. : Pakur, Jharkhand (2.477 Ha).

(Proposal No : SIA/JH/MIN/ 541719/2025)

Name of the consultant : Rian Enviro Pvt. Ltd., Patna, Bihar.

This is a new project which has been taken for appraisal on 24.06.2025.

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 118th meeting held on 22.10.2024 - 26.10.2024 and SEIAA, Jharkhand has approved the ToRs in 118th meeting held on 28th & 29th October, 2024. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/3268/2024/421, dated 09.12.2024. The final EIA / EMP submitted by PP to SEAC on 19.06.2025.

EC Application for: Boulder Stone:39373 Cum Per Annum /118121 Tonnes Per Annum.

PROJECT and LOCATION Details:

Sl.	Parameter	Details
1	Project Name	: Golpur Stone Deposit
2	Lessee:	: Partner- Shri Vikash Kumar & Shri Prashant Shekhar
3	Lease Address	: Mauza- Golpur, Thana No -85, Anchal- Pakuria, District- Pakur, Jharkhand
4	Lease Area	: Ha:2.477 ha Acres:6.12Acres
5	Type of Land	: Non-Forest – Rayati Land
6	Project Cost	: 50.0 Lakhs
7	CMP Budget	: Capital: 17.95Lakhs Recurring: 4.34 Lakh / year
8	CSR / CER Budget	: CER 4.8 Lakhs
9	New or Expansion	: New Project
10	Mineable Reserves	: Cu.M.:393513Cu. M. Tonnes:1180542Tonnes
11	Mine Life	: 10 years
12	Man power	: 36
13	Water Requirement	: 14.08 KLD=1.08 KLD (Drinking & Domestic Uses) + 9.5 (Plantation) KLD + 3.5 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	: Brahmani River, approx.1.94 Km
18	Nearest Habitation	: Golpur
19	Nearest RailStation	: Pinargaria Railway Station, 6.5 KM



20	Nearest Air Port	Danghar Airport is about 96.50 km in WNW direction
21	Nearest Forest	Reserve Forest Approx 7.5 Km towards East. Protected Forest Approx 2.20 Km towards SSW.
22	Road & Highways	NH 114A (Dumka- Ramaurhat Marg) – 0.75 KM
23	Approach road	Nearest Metal Road is approx. 0.150 Km
24	FOR	ToR letter No. LC/SCIAA/2024-25/3268/2024 dated 23.12.2024
25	Monitoring Date	15 October 2024 to 15 January 2025
26	PH Date	Public hearing conducted on 30.05.2025

CO-ORDINATES

1	Latitude	From 24°16'15.400" N	To 24°16'22.953" N
2	Longitude	From 87°38'26.762" E	To 87°38'35.771" E

LAND DETAILS

Khata no.	Plot no.
12	543 (P)
18	545
04	546 (P)

STATUTORY CLEARANCES

1	LOI/Lease docs	The Letter of Intent (LOI) has been issued by District Mining Officer, Pakur vide memo no. 1567/M, dated 23.09.2024.
2	CO	The CO, Pakura (Pakur) vide letter no. 477/Ra, dated 18.07.2024 has mentioned the plot no. of the project is not recorded as "Jung-e-Jhar" in R.S. Khutiyan & Register II.
3	DMO Cluster	DMO, Pakur vide memo no. 1596/M, dated 25.09.2024 certified that 05 other mining lease area (4.69 Acre, 35.56 Acre, 19.00 Acre, 12.94 Acre & 18.25 Acre) exists within 500 meters radius from proposed project site and total area is 56.64 Acre or 39.11 Ha.
4	DFO Wild Life	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1254, dated 26.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	Divisional Forest Officer, Pakur Forest Division vide memo no. 836, dated 25.06.2024 certified that the distance of forest is 364 meters from proposed project site.
6	DSR	The DMO, Pakur has been certified vide memo no. 1597/M, dated

Signature

Signature

Signature

Signature

Signature

		25.09.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 115, Page no. 139).
7	Gram Sabha	Gram Sabha conducted on 06.07.2024.
8	Mine Plan Approval	Approved by District Mining Officer, Pakur vide Memo No. 1603/M, dated 25.09.2024.
9	Public Hearing	Public Hearing conducted on 30.05.2025.
10	Baseline Monitoring period	15 th October, 2024 to 15 th January, 2025.
11	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 Method, Mechanized Mine, Wagon Drilling & Control Blasting will be deployed
2	Quarry Area	: Area~2.477 ha. Life of Mine – 10 Yrs
3	Waste Generation	: 5 years- 24350 cum Gritty Soil & 10361 cum Intercalated Waste
4	Stripping Ratio	: 1:0.17
5	Working Days	: 300
6	Bench: size & No	: 6m x 6m
7	Elevation of Mine	: 114-102 m AMSL
8	Ground Level Elevation	: 102m AMSL
9	Ultimate Working Depth	: 66 m AMSL
10	Water Table	: 58-53 m AMSL
11	Topography of Mine	: A Part of hillock with rock mass of Basalt.
12	Explosive Requirement	: 63 Kg/Day
13	Diesel/Fuel requirement	: 592 Litres/day

Production Details

Year	Production of stone (Cum)	Production of stone (Tonne)
1 st	39351	118051
2 nd	39363	118089







2 nd	39373	118121
3 rd	39363	118089
4 th	39373	118121
Total	196823	590471

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)			
				Backfill	Stone pitching wall	Water Body	Plantation
Quarry	Nil	1.720 Including backfill 0.400 & stone pitching wall 0.001 Ha	1.720 Including backfill 0.352 & stone pitching wall 0.001 Ha	0.400	0.001	0.626	0.693 (Dead bench plantation)
Greenbelt within Safety Barrier	Nil	0.757	0.757	...	...	...	0.757
Road	0.050	Nil	Nil	...	...	...	...
Total	0.050	2.477	2.477	0.400	0.001	0.626	1.450
Area in use	...	...	...	...	...	...	...
Balanced	2.477	Nil	Nil	...	...	...	...
Area unused	...	...	...	...	...	...	...
Total	2.477	2.477	2.477	...	...	2.477	...
Applied Area	...	...	...	...	...	...	...

ENVIRONMENT MANAGEMENT

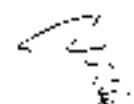
Public Hearing: -

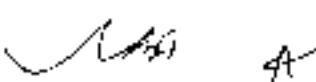
Public hearing was successfully executed on date 30-05-2025

Sr.No	Name & address of Citizen	Suggestion/ question asked by citizen	Answers given by Project Proponent/ Environmental	Time-bound Action Plan	Budgetary Provision

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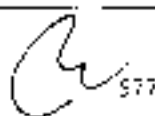






			Consultant		
1.	Mr. Sonat Hembram, Village- Golpur	During mining work, dust will fly on the roads and due to the dust, crops of all the villagers will be damaged, how can this be solved?	The project proponent assured to carry out continuous water sprinkling and dense tree plantation to reduce dust and ensure no impact on crops.	During operation of mine, Water sprinkling and plantation work will be done.	water sprinkling and plantation Budget included under EMP
2	Mr. Saheb Hembram Village- Golpur	Villagers should get employment. How will the loss of trees and plants due to mining work be compensated?	The villagers will be given employment as per their qualification. The proponent will distribute fruit bearing and timber saplings to the local community for plantation. The unit has proposed to plant saplings.	After obtaining the NOC from the Pollution Control Board, the local people will be informed, and their hiring for mining work will commence within a month. During operation of mine, Plantation work will be also done within a year.	Plantation Budget Included under EMP
3	Mrs. Sundarmukhi Marandi Village- Golpur	All the villagers should be provided financial support in marriage or death feast.	The project proponent assured its arrangement under CSR.	After start of mining, Project proponent will be financial support in marriage or death feast.	Rs. 2 Lakhs will be donated to the Gram Panchayat to support for marriage or death feast.
4	Mr. Arnesth Hembram Village- Golpur	Blasting should be done as per rules so that there is no vibration and no damage occurs.	The project proponent said that the blasting work should be done as per the rules.	-	-

5	Mr. Yogeshwar Munni Village-Gelpur	Planting should be done after removing the trees and plants and we the ryots should be provided financial help in times of happiness and sorrow.	The project proponent assured its arrangement under CSR. Besides it was assured that mining work would be carried out only after legal removal of trees and plants.	After start of mining, Project proponent will be followed.	Expense will be incurred as per the budget provision already mentioned in part 3 of this table.
6	Mr. Kishan Fadu Village-Gelpur	The playing field should be levelled and sports equipment should be provided for football.	The project proponent assured to provide equipment for the football game as well as the playground will be levelled.	Once mining operations commence, Project proponent will provide sports materials to support the youth activities. Additionally, during the operational phase of the mine, Project proponent will undertake leveling of the playground.	A budget of Rs 0.50 lakhs is earmarked for sports material. A budget of Rs 0.50 lakhs is earmarked for leveling of playground.
7	Mr. Priyansh Fadu Village-Gobur	Hand pumps should be arranged for water facilities and immediate medical facilities should be provided.	The project proponent assured that arrangements for deep boring for water and immediate medical facilities will be made available.	Once mining operations commence, hand pumps at community level will be installed.	A budget of Rs 1.50 lakhs is earmarked for handpump.
8	Mr. Hansa Village-Gobur	Rural youth should be given employment.	The villagers will be given employment as per their qualification and	After obtaining the NOC from the Pollution Control Board, the	Payment to mines workers will be done in compliance with the

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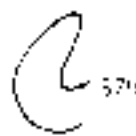


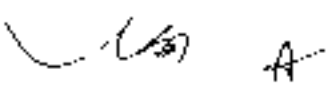


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			requirement,	will be informed, and their hiring for mining work will commence within a month.	applicable/prevaling wages norms.
9	Mr. Daniyal Tudu Village- Golpur	After completion of the mine, unders should be given to fill the mine through overburden and the football field should be levelled. Also, a house should be built for club and Two (02) deep boring should be done.	The project proponent assured that rules will be followed and levelling of the football field was also assured.	After completion of mining, the mine will be backfilled with overburden. Once mining operations commence, the project proponent will undertake leveling of the playground.	Expense will be incurred as per the budget provision already mentioned in point 6 of this table.
10	Mr. Tobin Murmu Village- Golpur	The proper fencing of Manjhi than and Jaher than and OB should be kept in the lease area only.	Manjhi than and Jaher than will be fenced properly under CSR by the project proponent. Also, assurance was given to keep OB in the mining lease area only.	Once mining operations commence, proper fencing of Manjhi than and Jaher than will be done by project proponent.	A budget of Rs 0.50 lakhs is earmarked for fencing.
11	Mr Babulal Murmu Village- Golpur	Sarees should be distributed to women during Bandhana festival and financial help should be provided on 30 th June.	The project proponent assured its arrangement under CSR.	Once mining operations commence, the project proponent will actively participate in the local Bandhana festival by distributing sarees to women and financial help in the nearby	A budget of Rs 0.50 lakhs is earmarked for sarees. A budget of Rs 0.50 lakhs is for financial held in wedding and festivals.

12	Mr. Ravindra Marandi Village- Colpur	Sarees should be given during festival and financial support should be provided. Also help should be provided during weddings and festivals.	The project proponent assured its arrangement under CSR.	Once mining operations commence the project proponent will actively participate in the local Usalana festival by distributing sarees to women and financial help in wedding and festivals. The nearby communities	Expense will be incurred as per the budget provision already mentioned in point 11 of this table.
13	Mr. Sewa stula Marandi Village- Gopur	Rural youth should be given employment.	The villagers will be given employment as per their qualification and requirement.	After obtaining the NOC from the Pollution Control Board, the local people will be informed and their hiring for mining work will commence within a month.	Payment to mines workers will be done in compliance with the applicable/prevaling wages norms.
14	Mr. Subashan Murmu Village- Colpur	A teacher should be arranged. A health aid centre should be set up and Ambulance should be arranged. Also the problem of water should be solved.	The project proponent assured its arrangement under CSR.	After start of mining, Project proponent will be followed.	A budget of Rs 0.50 lakhs is earmarked for first aid facility and drinking purpose.



15	Mr. Kaleshwar Hembram (Mukhiya- Badasinghpur Panchayat)	Health related problems should be solved in rural areas. The water level is going down due to the mining work; hence deep boring work should be done.	Health related arrangements were assured under CSR by the project proponent. Apart from this, assurance was also given to the villagers to do deep boring after identifying the place for drinking water.	During operation of mine PPE kits, face masks, and other health-related equipment will be provided as per the requirement. Along with that annual health check-up will be done for the mines labour.	Rs 3.0 Lakhs will be separately secured for the occupational health & safety and deep boring.
16	Mrs. Leelmuni Tudu Village- Mohanpur	Employment arrangements should be made for women and support should be given for the education of one child.	Rural women will also be given employment as per their qualification and requirement and support for children's education was also assured.	After obtaining the NOC from the Pollution Control Board, the local people will be informed, and their hiring for mining work will commence within a month.	Payment to mines workers will be done in compliance with the applicable/prevaling wages norms.

Budget of the CER activities based on the need-based assessment

S.No.	Activities	Expected Budget (in Lakh)	Time Frame with Budget (in Lakh)		
			1 st Yr	2 nd Yr	3rd Yr
1.	Providing health facilities like distribution of medicines, sanitizers, sanitary pads and other hygiene products for the well-being of the local community living in Gopipur, Dumri Baramasia and Barasingpur villages.	1.5	0.5	0.5	0.5
2.	Vaccination & Deworming camps for prevention of diseases in the Livestock in Mohanpur and Gopipur villages	1.5	0.50	0.50	0.50

5.	Development of a Learning Center in Golpur Panchayat center room) for imparting free literacy and tuition to the students of the Golpur village @Rs 5000/month for 36 months	1.8	0.60	0.60	0.60
Total Budget		4.8	1.6	1.6	1.6

Budget for commitment made during public hearing

Sl. No.	Activities	Estimated Cost In RS.	Time Bound				
			1 st year	2 nd year	3 rd year	4 th year	5 th year
1	Donation to the Gram Panchayat to support for marriage or death feast	2.0 L	Rs - 0.40 L	Rs - 0.40 L	Rs - 0.40 L	Rs - 0.40 L	Rs - 0.40 L
2	Sports material in village Golpur	0.50 L	Rs - 0.20 L	Rs - 0.20 L	Rs - 0.10 L		
3	Levelling of Playground in village Golpur	0.50 L	Rs - 0.50 L				
4	Installation of Handpumps in village Golpur	1.50 L	Rs - 1.50 L				
5	For fencing of Manjhi, than and Jaler than in village Golpur	0.50 L	Rs - 0.50 L				
6	Distributing sarees to women in village Mohanpur and Golpur	0.50 L	Rs - 0.50 L				
7	Financial help for 30 th June festivals (Hool Divas)	0.50 L	Rs - 0.10 L	Rs - 0.10 L	Rs - 0.10 L	Rs - 0.10 L	Rs - 0.10 L
8	For first aid facility/health at community level	0.50 L	Rs - 0.20 L	Rs - 0.20 L	Rs - 0.10 L		
9	For deep boring in village Mohanpur and Golpur	2.0 L	Rs - 2.0	Rs - 1.0			
Total		9.5 L					

Green Belt Development

Sl.	LOCATION	Area/Length	No of Trees
1	Safety Zone	0.757 ha	1893 trees @ 2500 trees per ha
2	Other Reclaimed Area	0.693 ha	1733 trees @ 2500 trees per ha
3	Haft /Approach Road	0.051 a	150 trees @ 2500 trees per ha

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary)

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1/1/1

1/1/1

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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 Monitoring Plan

Particulars	Monitoring Frequencies	Location	Important Monitoring Parameters	Budget, INR
Surface water / Tube well	Twice in a year at two locations	One Surface Water and One Ground Water from the nearest source.	pH, SS, TDS, Iron, Hardness, Alkalinity Chlorides, Nitrates Sulphate & Fluorides	20000.00
Ambient air monitoring	Twice in a year at three locations	One in Lease area, Others are in villages located at downwind direction	PM ₁₀ , PM _{2.5} , SO _x and NO _x	20000.0
Noise Pollution	Twice in a year at three locations	One in Lease area, Others are in villages located at downwind direction	Level in dB(A) and dB(C)	7000.0
Soil Sampling	Twice in a year at two locations	Nearby agriculture land located in downwind direction	pH, Conductivity, Sulphate, Nitrate, Phosphates, Alkalinity & texture.	10000.0
Total				57000.0

Environment Management Plan Budget:

S NO.	Particulars	Annual Budget Provisions (Rs)	
Site Facilities		Capital	Recurring
1	Water sprinkling facility with solar pump / diesel pump	100000	40000
	Cost of Water 200/Tanker/day (Capacity 5.0KL x 3No.) (200X 3 X 300)		180000
2	Garland Drains and Settling Tanks (10m x 02 m x 03m x 2No.)	75000	15000

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3	Contribution in W.B.M. Road Development and Maintenance (Road length approx 150m, Width 5.0mt.)	130000	40000
4	Plantation (3775 saplings) @ 80% survival rate.		
	Within Lease Area (In Barrier Zone) -1893 sapling (@50 Rs	34650	18930
	/Sapling in one year)		
	Outside the Lease Area (Kachha road and village front)- 15030000	1500	
	saplings @50rs. /Tree, in one year), with tree guard @ 150 Rs.		
	Other Reclaimed 1737 saplings. @50rs. /Tree (in conceptua	86850	17320
	plan period;		
Labor Welfare			
5	Drinking Water Facility and rest shelter (10x20 m) with solar light	100000	10000
6	Toilets 2 nos @Rs 15000 x 2	30000	5000
7	Occupational health checkup in a year for 36 workers (@twice/year) @ 200 x 2 x 36	Nil	14400
8	Provision of PPEs (helmets, safety shoes, safety glasses, gloves etc. (36 x 3000)	108000	5000
9	Vocational training on mining methods and safe work practices (@twice/year) @ 250 x 2 x 36)	Nil	18000
Emergency Rescue Plan			
10	Fire Extinguishers (2 Nos) @ 25000 / firefighting and, first aid @2000 per kit	50000	1000
11	Safety signage and warning boards like signs, red flags, cones etc.	50000	5000
Solid Waste Management			
12	a) Bins 2 Nos @ Rs 1500 each	3000	5000
	b) Pit and Composting	10000	
	c) Transport of Dry Waste	5000	
13	Environment Monitoring	-	57000
14	Public Hearing Commitment	550000	
Total INR		1794250	433150
Say		1795000	434000

Capital Cost of EMP: Seventeen Lakhs Ninety-Five Thousand Only

Recurring Cost of EMP: Four Lakhs Thirty-Four Thousand Only

Solid Waste Management

- Waste Generation will be 24350 cum Gritty Soil & 10361 cum Intercalated Waste during the life of mine. 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-0.258 Ha. (L x W x H= 66m x 39m x 6m) & Area- 0.074 Ha. (L x W x H= 46m x 16m x 6m)], at the north-east part of the area with suitable precautions like parapet wall, garland drain & in 3rd year intercalated waste will be removed and this will be backfill within the exhausted quarry & In 4th year removed gritty soil & intercalated waste will be backfill within the exhausted quarry & in 5th year removed gritty soil & intercalated waste & total temporarily dumped material will be backfill within the exhausted quarry. In conceptual period total removal intercalated waste will backfill within the exhausted quarry.

Water Quality Management

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

Air Quality Management

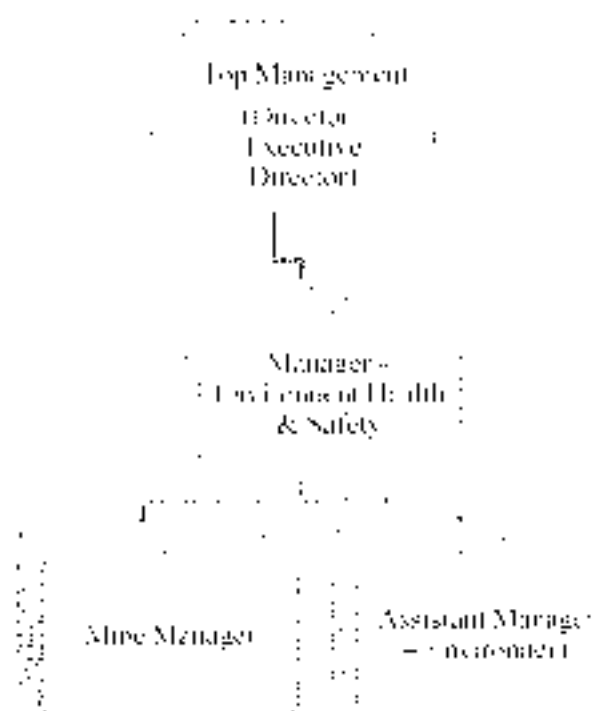
- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission.
-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

Quantity of HSD/ Fuel consumption per day of Golpur Stone Deposit

S. No	Machine	Details of fuel (Diesel) requirements	Consumption of Diesel (in liters/day.)
1	Wagon Drill	Number of Machines=1 Diesel consumption in one shift working. (i.e-10 liters) $=1 \times 8 \times 10 = 80 \text{ liters}$	80
2	Excavator	Number of Machine=2 Diesel consumption in one shift working (i.e-57 litre/hr) $=2 \times 8 \times 7 = 112 \text{ liters}$	112
3	Tipper	Number of Tipper=03 Diesel consumption in one shift working (i.e 40/hr) $=03 \times 10 \times 4 = 120$	120
4	DG Set	Number of DG Set =1(60 KVA) Diesel consumption by one in one shift working.(i.e 16 liter/hr) $=1 \times 10 \times 16 = 160 \text{ liters}$	160
5	Water Sprinkler	Number of Sprinkler=01 Diesel consumption by Sprinkler in one shift working (i.e 2ltr/hr) $=1 \times 10 \times 2 = 20 \text{ liters}$	20
6	Extra	Transport vehicle, supervision vehicle, maintenance vehicle	100
Total			592

Environment Monitoring Cell



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S. No.	Designation	Proposed responsibility
1	Top Management (Director / Executive Director)	Overall, in-charge of operation of environment management facilities; Ensuring legal compliance by properly undertaking activities as laid down by various regulatory agencies from time to time and interacting with the same.
2	Manager – Environment Health & Safety	- Interaction with Environmental Consultant. - Scheduling regular health check-up of the employee. - Submission of Monitoring Report as per Schedule - Environment Budget and sanctions.
4	Mine Manager	- Execution of Greenbelt development, Environmental Monitoring execution activities near site as per CSR and working procedure framed out by EHS officer. - Drilling and blasting supervision. - Supervision of Slope stability and mining operations
3	Assistant Manager – Environment	- Implementation of EMP - Allotment of daily job - Field visit - Liaison with MOEF&CC/SPCB

RISKASSESSMENT

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,

		There by 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	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 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 spraying 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 drilling 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.

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- 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.

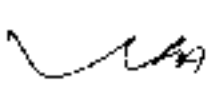
Transportation

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.



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- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained
- i. If any tree falling 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 Golpur Stone Deposit of M/s Majestic Stone Works, Village : Golpur, Thana no. : 85, Anchal : Pakuria, Distt. : Pakur, Jharkhand (2.477 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I 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.

Day 3 : June 25th, 2025 [Wednesday]

Consideration of proposals :

A. Site inspection to :

- a. Multistoried Residential Complex "Panchwati IVY" of M/s Panchwati Builders (A Unit of Panchwati Promoters Pvt. Ltd.), Village : Murramkala, Tehsil : Ramgarh, Dist. : Ramgarh, Jharkhand.

The Project Authorities, in the 123rd meeting of SEAC, had submitted documented evidence of implementation of Remediation Plan and Community Resource Augmentation Plan as per EC letter no. EC/SEIAA/2022-23/2567/2022/256, dated 09.09.2022.

It was decided to have a joint site visit with the representative from IRD, MoEF&CC, Govt. of India, Ranchi and SEAC, Jharkhand as per direction of S.O. no. 804 (31), dated 11.03.2017, to evidence the implementation of the Remediation Plan and Community Resource Augmentation Plan as reported.

As per Environmental Clearance letter no. EC/SEIAA/2022-23/2567/2022/256, dated 09.09.2022, the Remediation Plan and Community Resource Augmentation Plan was as follows :-

Sr. No.	Major Environment	Details	Cost Rs in Lacs
1	Air Environment	Provide Air monitoring equipments	10,00,000/-
2	Water Environment	Repair of culverts and embankments etc. or any suggestion from the local authority	10,00,000/-
3	Soil Environment	Green belt development.	10,00,000/-
4	Socio-Economic Environment	Provide equipments etc. to charitable school, hospital and other allied services	10,00,000/-
5	Energy conservation	Provide solar power panel	7,31,250
Total cost Rs. In Lacs			47,31,250/-

The PAs had approached the DFO, Ramgarh and requested vide letter dated 10.07.2024 to execute the above remediation plan on their behalf which was accepted by the DFO, Ramgarh vide letter no. 1408, dated 12.07.2024.


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Accordingly, the PAs vide letter dated 25.07.2024 submitted a sum of Rupees 47,31,250 to Divisional Forest Officer, Ramgarh vide DD no. 504638, dated 24.07.2024 of ICICI Bank for the purpose of execution and implementation of the above plan.

The DFO, Ramgarh had completed the execution of the above Remediation Plan and Community Resource Augmentation Plan and provided the details of the same to the PAs vide letter no. 676, dated 06.03.2025.

The utilization of the funds are done and certified by DFO, Ramgarh which are as per the above mentioned Remediation Plan and Community Resource Augmentation Plan.

As per the report of the DFO, Ramgarh alongwith the details and photograph provided are as follows :-

- i. Real time Air Monitoring System installed at the Forest Division, Ramgarh.
- ii. Pond deepening work at Kankebar / Murramkala / Bengabar, Ramgarh.
- iii. Old check dam repair at Chhotkidundi, Ratwe, Barkidundi, Bongabar, Bhuiyandih and Madaura under Kujju range.
- iv. Rain Water Harvesting system in the campus of Forest Division, Ramgarh.
- v. PVC net gabion plantation 150 numbers in the campus of Ramgarh College, SDM Residence and nearby Gosa, Kankebar Mountain.
- vi. Water coolers, water filter in Schools and Govt. Hospitals at Sadar Hospital, Ramgarh, Referral Hospital, Bharech Nagar, Bazar Tanr UPHC, Barkakana PHC and Golpar UPHC.
- vii. Equipment for tree cutting, 02 big chain saw cutter at Forest Division, Ramgarh.
- viii. Solar power panels 02 number of 03 KVA each at Range Office, Kujju and Ramgarh.

During the site visit on 25.06.2025 the team witnessed the reported work by the DFO, Ramgarh.

Hence, It is recommended and requested for further action to facilitate the release of the Bank Guarantee of Rupees 47,31,250 (Rupees Forty Seven Lakh Thirty One Thousand Two Hundred Fifty only) submitted to Jharkhand State Pollution Control Board, Ranchi, vide Bank Guarantee No. : 1314NDDG00201623 dated : 31.08.2022.

Hence, the Member Secretary, SEAC will write a formal letter to SEIAA regarding above.

b. Green Residential Project "EASTATE ECO SYMPHONY" of M/s ESTATE BUILDCON PVT. LTD., Village : Gari, Tehsil : Sahar (Bargain), Dist : Ranchi, Jharkhand.

The Project Authorities, in the 123rd meeting of SFAC, had submitted documented evidence of implementation of Remediation Plan and Community Resource Augmentation Plan as per EC letter no. EC/SE/AA/2021-27/7515/2021/216, dated 06.08.2022.

It was decided to have a joint site visit with the representatives from IRO, MoEF&CC, Govt. of India, Ranchi and SFAC, Jharkhand as per direction of S.O. no. 804 (FI), dated 14.03.2017, to evidence the implementation of the Remediation Plan and Community Resource Augmentation Plan as reported.

As per Environmental Clearance letter no. EC/SE/AA/2021-27/7515/2021/216, dated 06.08.2022, the Remediation Plan and Community Resource Augmentation Plan was as follows.

Sf. No.	Major Environment	Details	Cost Rs in Lacs
1	Air Environment	Paving the sides of immediate nearby road with pavers to prevent dust or Carpeting of the immediate nearby road blacktop provision of Rs. 30 Lacs has been provided for an approximate area of 3,500 to 4,000 sqm	30.00
2	Soil Environment	Provide Organic waste Composter (OWC) in immediate neighborhood for processing of organic waste. Provide large bins for organic waste and recyclable waste	07.00
		Prevent direct loss to soil environment due to water erosion, by plantation of various types of trees and creation of green belt	04.00
3.	Water Environment	Construction of rainwater harvesting pits 6 Nos. in the surrounding area to recharge the ground directly by channelizing the rainwater flow in the slope before water getting wasted	09.00
4.	Socio-Economic Environment	To impart education about the sustainable environment practices and to establish science and computer lab. A provision of Rs. 10 Lacs has been done	10.00
5	Energy conservation	Rooftop Solar panel to generate solar energy w/ grid connected system with net metering for which the provision of Rs. 20 Lakh.	20.00
Total Cost Rs. in Lacs			80.00

The PAs had approached the DFO, Ranchi and requested to execute the above remediation plan on their behalf which was accepted by the DFO, Ranchi.

Accordingly, the PAs vide letter dated 27.05.2024 submitted a sum of Rupees 80 Lakh to Divisional Forest Officer, Ranchi vide Bankers cheque no. 001139, dated 27.05.2024 of Bank of India for the purpose of execution and implementation of the above plan.

The DFO, Ranchi had completed the execution of the above Remediation Plan and Community Resource Augmentation Plan and provided the details of the same to the PAs vide letter no. 783, dated 21.03.2025.

The utilization of the funds are done and certified by DFO, Ranchi which are as per the above mentioned Remediation Plan and Community Resource Augmentation Plan.

As per the report of the DFO, Ranchi alongwith the details and photograph provided are as follows :-

- i. Paver Block road constructed over a distance of 1.5 KM at Nagar Van, Baranatu, Ranchi.
- ii. Organic Waste Composter (OWC) installed at Nursery Complex, Dhurwa, Ranchi.
- iii. PVC net gabion plantation 175 numbers between Ring Road Manatu and Law University, Ranchi.
- iv. 06 numbers of Rain Water Harvesting structures constructed at Kanke Range Office (02 Nos), DFO Residence campus (02 Nos.), Getalsud FRH (01 no.) and Van Bhawan, Doranda (01 no.)
- v. 41 numbers of Animal Intrusion detection and repellent system (ANIDER) installed at Chatambari, Silli and Angara.
- vi. Rooftop solar panel of 20 KVA installed at Kanke Range Office, Ranchi.

During the site visit on 25.06.2025 the team witnessed the reported work by the DFO, Ranchi.

Hence, it is recommended and requested for further action to facilitate the release of the Bank Guarantee of Rupees 80 Lakh (Rupees Eighty Lakh only) submitted to Jharkhand State Pollution Control Board, Ranchi, vide Bank Guarantee No. : 4599IPEBG220015 dated : 25.07.2022.

Hence, the Member Secretary, SEAC will write a formal letter to SEIAA regarding above.

Day 4 : June 26th, 2025 [Thursday]

Consideration of proposals :

1. Grain based Distillery to produce Ethanol with installed capacity 40 KLPD under 100% EBP program by M/s Maheshwari Carbons Private Limited, Village : Nawadih, Thana : Saraikela, Thana no. : 292, Distt. : Saraikela-Kharsawan, Jharkhand.

{Proposal no.: SIA/JH/IND2/ 540168 /2025}

The PAs vide letter dated 25.06.2025 have requested for deferment of the consideration of the proposal to the next meeting of SEAC.

Hence, the proposal will be taken up for consideration in the next meeting.

2. Proposed Residential Project of M/s Megaspac Infrastructure Private Limited, Mouza : Simalia, Gutua, Distt. : Ranchi, Jharkhand.

(Proposal no.: SIA/JH/INFRA2/539611 /2025)

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

This is a new project which has been taken for appraisal on 26.06.2025.

Project Sector: 8(a) Building and Construction Projects , Category: B2.

Application for Environment Clearance (EC) as per EIA notification, 2006.

EC application for: Proposed Residential project at Plot No- 04, 1927,1928 Khata No.- 55,112 Thana No.- 138,139, Mauza- Simalia, Gutua District-Ranchi, Jharkhand by M/s Megaspac Infrastructure Private Limited

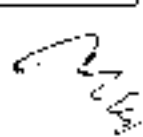
Built-up Area: 25694.95 sq. meter

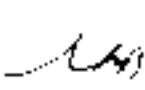
PROJECT and LOCATION Details:

Parameters	Description
Total Plot Area	1.379 Acre or 5583.25 Square meter
Project Cost	INR 38 Crores
Built-up Area (@5 D.F.A.R)	25694.95 sq. m.

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Green Area (@ 24 % of net plot area)	1060 Square Meter
Green Belt @ 15 % net Plot area	672 Square Meter
Population	774
Water Requirement	84 KLD
Fresh Water Requirement	55 KLD
Wastewater Generation	67 KLD
Treatment facility If waste water	STP of 100 KLD
Total Municipal Waste	361 kg/day
Power Requirement	Maximum power demand for the project during operation phase is estimated to be 470 kVA respectively. Source of power will be Jharkhand State Electricity Board.
DG Sets	2 no. of DG set of (2 * 125 KVA)= 250 kVA
RWH Plts	5 nos.
Parking Number	Car -140 Scooter-130
Nearest Road	NH 39 (0.25 km W)
Nearest Railway Station	Tangerbansli Railway station (approx 1.0 km, NW)
Nearest Airport	Birsa Munda Airport (Ranchi), (approx 27.0 km, SE)
Nearest Hospitals	Primary Hospital (approx 1.19 km ,NE)
Nearest Water body	Pandra Nadi 4 km NE

CO-ORDINATES

Point in Image	Latitude	Longitude
A	23°22'07.30" N	85°14'04.07"E
B	23°22'07.56"N	85°14'04.44"E
C	23°22'08.31"N	85°14'04.45"E
D	23°22'08.27"N	85°14'04.59"E
E	23°22'08.33"N	85°14'04.75"E

F	23°22'06.98"N	85°14'04.84"E
G	23°22'07.35"N	85°14'04.92"E
H	23°22'09.96"N	85°14'05.21"E
I	23°22'07.98"N	85°14'05.31"E
J	23°22'08.14"N	85°14'05.35"E
K	23°22'07.67"N	85°14'06.33"E
L	23°22'08.14"N	85°14'06.56"E
M	23°22'07.58"N	85°14'08.02"E
N	23°22'08.98"N	85°14'08.24"E

LAND DETAILS

Khata no.	Plot no.
55 & 112	04, 1927 & 1928

AREA STATEMENT

S. No.	Description	Proposed area after expansion (sq m)
1	Plot Area	5583.25
2	Surrender Free of Cost	49.56
3	COP Area	1052.99
4	Net Plot area	4480.73
5	Coverage area @ 32.86 %	1818.37
6	Green belt @24 % of net plot area	1060
7	FAR	16497.46
8	Non-FAR Area including basement area	9,107.40
9	Built-up Area	25694.95
10	Height	32.70 meter

Statutory Clearances :

1	Land Ocs	Development agreement for 04 owners
2	DFO Territorial	DFO, Ranchi Forest Division vide letter no. 1255, dated 07/05/2025 certified that the distance of reserved / protected forest is more than 250 metre from project site.
3	DFO Wildlife	DFO, Wildlife Division, Ranchi vide letter no. 265, dated

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		28.04.2025 certified that proposed project site is out side Eco Sensitive Zone of Palkot Wildlife Sanctuary.
4	CO certificate	: The CO, Ratu, Ranchi vide letter no. 07, dated 21.04.2025 and CO, Nagri, Ranchi vide letter no. 07, dated 16.04.2025 have mentioned the plot no. of the project is not recorded as "Jangle Jhari" in R.S. Khariyan.
5	AAI NOC	: Airport authority of India issued NOC vide NOC ID no. RANC/EAST /B/011825/1499475, dated 30.01.2025 valid up to 29.01.2033.
6	Building Plan approval	: Conceptual Plan submitted.
7	Fire Department	: Fire Advisory has been issued by Fire Department, Jharkhand, Ranchi vide memo no. 3887/Tech./2025, dated 08.06.2025.

Water Requirement Details

Category	Population/Area (sq m)/Capacity	Standard (LPCD)	Water Requirement (KLD)	Fresh Water Requirement (KLD)	Recycled Water requirement (KLD)
Domestic					
Residents	673	100	67	47	20
Staff	34	45	2	1	1
Visitors	67	15	10	7	3
Total Domestic Water Demand			79	55	24
Landscape	1060.00 Sq.m	3ltr/sqm	3	-	3
Fire Fighting			2	-	2
Total			84	55	29

Wastewater Calculations

Category	Total Quantity (KLD)
Domestic water Req.	55
Flushing water Req.	24
Sewage generation (@90% of the fresh + 100% flushing water requirement)	74
Capacity of STP	100
Recovered water from STP (90% of Waste water)	67
1. Flushing	24
2. Landscaping	3
3. Fire Fighting	2
4. Discharge to Sewer/Road/Car washing	38

Solid Waste Generation & Management

S. No	Description	Occupancy/Area	kg/capita/day	Total Solid Waste Generation (kg/day)	Wet Waste (kg/day)	Dry Waste (kg/day)
1.	Residents	573	0.5	357	202	135
2.	Staff	54	0.25	14	8	6
3.	Visitors	67	0.15	10	6	4
4.	Landscape waste	1060 SQM 1.00.26 acres	0.2 kg/acres	0.26	0.26	
5.	STP sludge	100 KLD	--	9	9	--
Total Waste Generated				370.26 or 371	225.26 or 226	145

ENVIRONMENT MANAGEMENT

Green Belt Development

- Combination of local trees and shrubs are planned within the project site.
 - Total green area provided at the site is 1060 sq m (24 % of the net plot area) which will enhance the beauty of the site and help combat air and noise pollution.
- The plant species will be selected on the basis of Guidelines for Developing Green Belts, CPCB March 2000

Solid Waste Management

During Construction Phase

- Construction yards are proposed for storage of construction material.
- Excavated top soil will be stored in temporary constructed soil bank and will be reused for landscaping of the project
- Remaining soil will be utilized for refilling/road work/raising of site level at locations
- There will be "Refuse Containers" at site for the management of domestic waste generated by the construction labourers and these containers will be emptied at least once daily.
- Cement bags, waste paper and packing material (corrugated) will be sold off to recyclers

During Operation Phase

- The solid waste will be segregated at source & collected.
- Adequate number of colored bins (green, white & black) separate for bio-degradable, non-biodegradable and hazardous waste are proposed to be provided at the strategic location within site
- Bio-degradable (will be composted through organic waste converter)
- Recyclable wastes will be disposed to govt. or SPQR approved third party vendors

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- Dewatered sludge can be buried underground in a sanitary landfill. It also may be spread on agricultural land in order to make use of its value as a soil conditioner and fertilizer.
- The Hazardous waste generated will be managed as per the Hazardous and Other Wastes (Management and Trans boundary Movement) Rules, 2016.
- Horticultural Waste is composted and used for gardening purposes.

Water Quality Management

During Construction Phase

- The site drainage will be planned in such a way that there is no accumulation of water/wastewater within the project premises or in the vicinity of the site.
- Mobile toilets to be provided for construction laborers.
- Generated waste water will be collected through tankers and dispose to septic tank for treatment.

During Operation Phase

- STP of capacity i.e. 100 KLD or STP is proposed for treatment of wastewater.
- Treated waste water would be reused for Flushing, Landscaping, Road Washing & Misc
- Use of water efficient plumbing fixtures to conserve water.
- Approx. 55 KLD of fresh water is required during operational phase of the project.

Air Quality Management

- Warehouse/stock yard will be provided for storage of construction material
- Covering of stored construction materials with tarpaulin covers which will be resold to authorized construction material handling agency for reuse.
- Covering of trucks carrying construction materials.
- Dust suppression by water sprinkling.
- Adequate maintenance of construction equipment & vehicles.
- Wheel wash facility at the entry/exit of the site to prevent dust emissions.
- Periodical Ambient Air Quality Monitoring.
- PUC Certified vehicles.
- Glow signs Speed Limits to 20 kmph to reduce emissions on site will be displayed at the important junctions.

Energy conservation

- Energy will be conserved via solar power & LED of at least 7 % (2 % from solar energy) of the total power requirement.
- All common lighting will be done by solar energy

EMP budget for Operational Phase

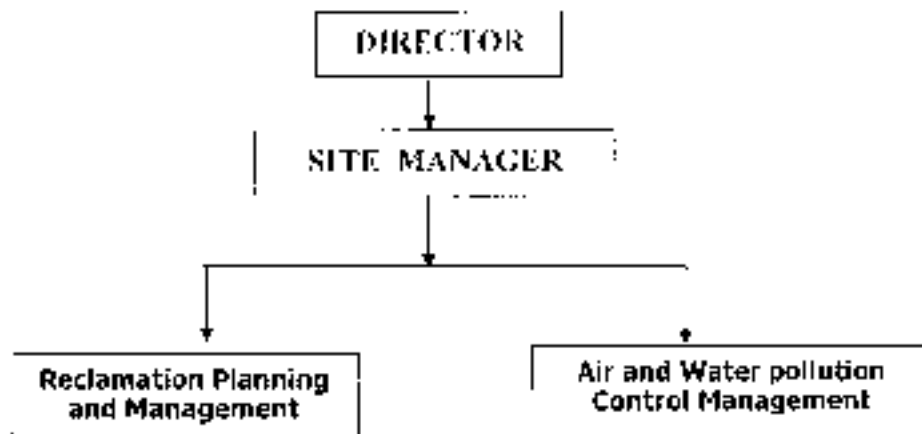
S. No.	Activity	Capacity/ Area/Nos./parameters	Capital Cost (Lacs)	Annual Recurring Cost (Lacs)
1.	STP	100 KLD	15	5

2.	Landscaping & planting trees	1060 sq.m	10	5
3.	Solid waste Management	Municipal waste-361 kg/day	5	4
4.	RWH Pit Installation	6 pits	6	1
5.	Energy Saving	7 %	10	5
6.	Environmental Monitoring*	Air, water, soil and noise		2
Total			46	22

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	1 Stations	6 Monthly

ENVIRONMENT MANAGEMENT CELL



Undertaking

- An undertaking that 67 KLD recycles wastewater generated at Residential of at Plot No 04, 1927,1928 Khata No - 55,112 Thana No - 138,139, Muza- Simara, Gutua District- Ranchi, Jharkhand
- An undertaking that 470 kVA Power requirement in Residential Residential of at Plot No- 04, 1927,1928 Khata No - 55,112 Thana No - 138,139, Muza- Simara, Gutua District- Ranchi Jharkhand
- An undertaking that no ground water will be used with any prior approval from CGWA

Based on the presentation made and information provided, the Committee decided that the proposal for Proposed Residential Project of M/s Megaspac Infrastructure Private Limited, Mouza : Simalia, Gutua, Distt. : Ranchi, Jharkhand is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure -III alongwith the following specific conditions :

- I. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.plc.in>). 10% of the total green belt proposed shall be allocated under this clause.
- II. Ground water to be drawn for use in the project only after obtaining permission from the Competent Authority.
- III. Environment management system including organization structure to be drawn to ensure compliance of EC conditions stipulated based on principles of Continual Improvement and periodical management review.
- IV. All raw material to be stored only under covered shed.
- V. PAs to offset (upto20%) consumption of conventional energy sources by promoting use of solar energy, passive energy utilization, optimum fenestration, shading effect and heat islands.
- VI. Developers to promote energy conservation measures such that it offsets not less than 02 % of connected load.
- VII. Trees should be developed & maintained not less than 15% of project area.
- VIII. Organic Waste Converter (OWC) to be installed of sufficient capacity such that all organic waste (bio degradable) generated is composted at source only.
- IX. Developers/Company to install STP of sufficient capacity such that all the sewer produced is treated and reused.
- X. Developers/Company to install Rain water harvesting structures such that all the rooftop water runoff is collected and harvested including reuse on 100% basis.
- XI. Developers/Company to conduct and submit carbon footprint and carbon sequestration study report including mitigation measures as a part of EC compliance.
- XII. Water runoff originating from open non constructed areas of project premises to be harvested /guided in such a way that it does not create water logging condition outside.
- XIII. Sufficient number of EV fast charging points to be installed.
- XIV. ~~MSW Collection~~ centre should be located in isolated and preferably unmanned area. Movement of the vehicle carrying waste should be under tarpaulin covered

condition only. Route of vehicle should be such that it avoids residential areas as far as practical.

- XV ISO 14k EMS system standard to be followed for implementation of EMPs with MRM in place for feedback to Sr management

3. Pathaldiha Stone Deposit of M/s Maa Durga Stone Quarry (Partners : (i) Shri Rajendra Mehta (ii) Shri Robi Ansari (iii) Shri Yugal Kishore Mehta (iv) Shri Vijay Mistri), Village : Pathaldiha, P.S. : Dhanwar, Distt. : Giridih, Jharkhand (1.165 Ha).

(Proposal no.: SIA/JH/MIN/ 533732 /2025)

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

This is a new project which has been taken for appraisal on 26.06.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 12400 cum/annum or 33480 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Pathaldiha Stone Deposit M/S Maa Durga Stone Quarry Partners- (1) Sri Rajendra Mehta S/o Sri Choti Mehta Village- Domchanch Dist. - Koderma, State - Jharkhand (2) Sri Robi Ansari S/o Noor Mohammad Village & Post - Archango Thana- Dhanwaar, District- Giridih 2 Lessee: (3) Sri Yugal Kishore Mehta S/o Numan Mehta Village- Randih, Post- Masanodih, Thana- Domchanch, Dist. - Koderma (4) Sri Vijay Mistri S/o Sri Jagdish Mistri Village- Pachgawa, Post- Masanodih, Thana- Domchanch, Dist - Koderma
3	Lease Address	Village - Pathaldiha, P.S - Dhanwar, District - Giridih, State - Jharkhand
4	Lease Area	1.165ha Acres- 2.88 Acres
5	Type of Land	Non Forest (Baiyati Land)

6	Project Cost	:	Rs. 90.0 Lakhs
7	EMP Budget	:	Capital: Rs. 12.275 Lakhs Recurring: 5.0 Lakhs / year
8	New or Expansion	:	New
9	Mineable Reserves	:	124000 cum 334800 Tonnes
10	Mine Life	:	10 year.
11	Man power	:	20
12	Water Requirement	:	8.99 ~ 9.00 KLD (Drinking: 0.20 KLD, Dust Suppression: 4.69 KLD, Plantation: 4.11 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	:	Gorhan Dam, Approx. 3.70 km. in WSW direction of mine site.
17	Nearest Habitation	:	Pathaldiha, Approx. 0.80 km towards SSE direction.
18	Nearest Railway Station	:	Nawadih Railway Station, approx 8.25 km towards WNW direction.
19	Nearest Airport	:	Giridih Airport, approx 44.69 km towards ESE direction.
20	Nearest Forest	:	BELA PF, Approx. 4.6 km towards NW direction of mine site. PF, Approx. 3.90 km towards East direction of mine site. PF, Approx. 3.55 km towards East direction of mine site. PF, Approx. 4.65 km towards WNW direction of mine site
21	Road & Highways	:	SH - 13, Approx. 6.93 km towards North direction.
22	Approach Road	:	Approx 390 meter

CO-ORDINATES

1	Latitude	:	From 24°22' 33.27"N	To 24°22' 38.44"N
2	Longitude	:	From 85°53' 20.06"E	To 85°53' 17.45"E

LAND DETAILS

Plot no.
30 (P), 64 (P) & 67 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LOI) has been Issued by District Mining Officer, Giridih vide letter no. 495/M, dated 29.04.2023.

2	CO	The CO, Dhanwar, Giridih vide letter no. 611, dated 29.09.2022 has mentioned the plot no. of the project is not recorded as "Jungle Ihari" in Khatyan
3	DMO Cluster	DMO, Giridih vide memo no. 491/M, dated 13.05.2025 certified that 02 other mining lease area (2.36 Acre & 3.87 Acre) exists within 500 meters radius from proposed project site and total area is 6.11 Acre
4	DFO Wildlife	DFO, Wildlife Division, Hazaribag vide letter no. 2142, dated 29.10.2022 certified that the proposed project site is outside Eco Sensitive Zone of Koderma Wildlife Sanctuary
5	DFO Territorial	Divisional Forest Officer, Giridih West Forest Division vide letter no. 1309, dated 07.11.2022 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 Giridih District (Page no. 86, SL no. 23).
7	Gram Sabha	Gram Sabha conducted on 21.03.2022
8	Mine Plan Approval	Approved by The Assistant Director, Geology, District Geological Office, Koderma vide Memo No. 08, dated 11.01.2025.
9	Qualified Person	Shri. Tapan Kumar Chakravarty was present in the meeting and affirmed that the mine plan has been prepared by him

Working Details

1	Mining Method	Open cast Semi-Mechanized Method
2	Lease Area	1.165 Ha. or 2.88 Acres Life of Mine says 10 year.
3	Waste Generation	Total 3425.00 cum waste shall be generated during the plan period.
4	Stripping Ratio	1: 0.02
5	Working Days	300
6	Bench size & No	6m x 6m
7	Elevation of Mine	353 AMSL to 362 AMSL
8	Ground Level Elevation	362 AMSL
9	Ultimate Working Depth	345 AMSL (17m BGL)
10	Water Table	320-313 AMSL (25-22 m BGL)
11	Topography of Mine	Flat Topography
12	Explosive Requirement	90 kg/day
13	Diesel/Fuel requirement	90 litre/day

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Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Waste (cum) in plan period	Waste (cum) In ultimate	Bench level AMSL
1st	11500.00	31050.00	1749.00	1587.00	363-357
2nd	12000.00	32400.00	1676.00		363-357
3rd	12400.00	33480.00	-		357-351
4th	12400.00	33480.00	-		357-351
5th	12400.00	33480.00	-		351-345
Total	60700.00	163890.00	3425.00	1587.00	-

Land Use

Land Utilization	Existing Land use (Ha.)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry	0.0	0.362	0.687 (Entire area shall be left as water reservoir for rain water harvesting)
Road	0.015	Comes Under Quarry	Comes Under Quarry
Safety Zone (Plantation)	0.0	0.478 (Plantation)	0.478 (Plantation)
Total	0.015	0.840	1.165
Unused Area	1.15	0.325	-
Total Lease Area	1.165		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.478ha	1175
2	Along Approach Road	:	390m	780
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	Nil	2,00,000
2	Baseline Monitoring		
	i) Air		20,000
	ii) Water		15,000
	iii) Soil		8,000
	iv) Noise		7,000
3	Plantation	10,27,500	1,00,000
4	Construction and maintenance of haul road	7,00,000	1,50,000
	TOTAL	12,27,500	5,00,000

Note: *2055 plants * 500 Rs (for each plants including hedges and fences) = Rs. 10,27,500/-

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

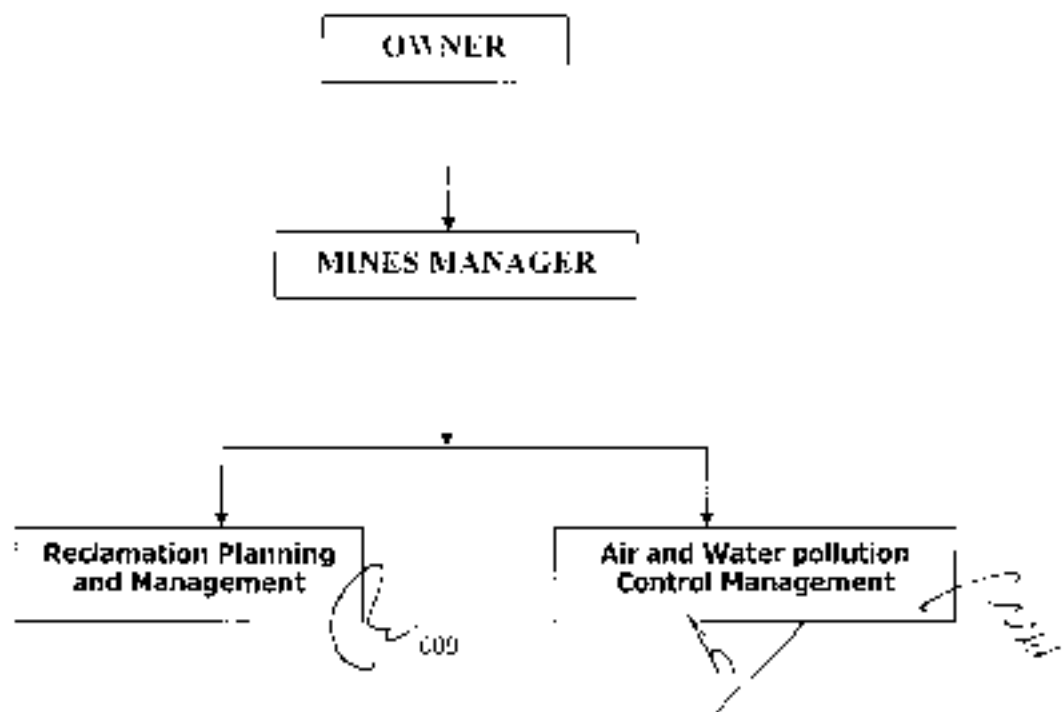
300*300 = 90000/- ~ 1,50,000/-

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	70000
2	Soil	2 Stations	6 Monthly	8000
3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

Fit layout has been shown in development plan and there is only 3425.00cum waste shall be generate which will used in maintenance of mine road and village road. so there is no requirement of waste dumping Plan for this mining plan.



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 once 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 free, 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

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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

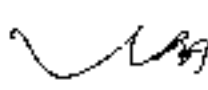
Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

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

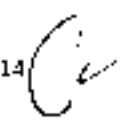
- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human 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



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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 lagged, 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

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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.

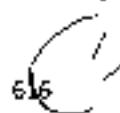
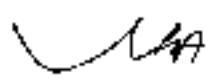
Transportation

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 gab on 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 Pathaldiha Stone Deposit of M/s Maa Durga Stone Quarry (Partners : (i) Shri Rajendra Mehta (ii) Shri Robi Ansari (iii) Shri Yugal Kishore Mehta (iv) Shri Vijay Mistri), Village : Pathaldiha, P.S. : Dhanwar, Distt. : Giridih, Jharkhand (1.168 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I In compliance of OM no. F.No. 1A3-22/3/2024-IA/II (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 MeriHF Portal (<https://merihf.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

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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.

4. Upraili Kanhai Stone Deposit of Smt. Hengamuni Murmu & Others, Village : Upraili Kanhai, Anchal : Tisri, Distt. : Giridih, Jharkhand (1.56 Ha).

(Proposal no.: SIA/JH/MIN/ 541531 /2025)

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

This is a new project which has been taken for appraisal on 26.06.2025.

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

Application for Environmental Clearance (EC).

Application for: Proposed Capacity- 39204 cum/annum or 105850.80 TPA

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Upraili Kanhai Stone Deposit
2	Lessee:	: Partner-(1) Smt. Hengamuni Murmu, W/o- Sri Devjan Marandi, Address -H8, village- Chitri, Post- Taratand, Thana- Taratand, Jhatri, Dist- Giridih. Partner-(2) Sri Sanjay Bharti, S/o- Sri Gopal Bharti. Address-46 Mission School Compound, Police Station Sadar Hazaribagh, Hazaribagh District. Partner-(3) Sri Akash Shandilya, S/o- Sri Rajesh Kumar Address -Near Government school, Uppere tola Kariyawan, Hiridih, Koderma, Jharkhand.
3	Lease Address	: Village - Upraili Kanhai, Anchal- Tisri, District - Giridih, State - Jharkhand

4	Lease Area	: 1.56ha.	Acres: 3.86 Acres
5	Type of Land	: Non-Forest (Rajyati Land)	
6	Project Cost	: Rs. 60.0 Lakhs	
7	EMP Budget	: Capital: Rs. 20.5/5Lakhs	Recurring: 5.0Lakhs / year
8	New or Expansion	: New	
9	Mineable Reserves	: 195845cum	579051.57 tonnes
10	Mine life	: 6 year.	
11	Man power	: 25	
12	Water Requirement	: 14.94 ~ 15.00 KLD(Drinking: 0.25KLD, Dust Suppression: 2.03KLD Plantation, 6.67 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	: Sankh Nadi, Approx. 4.30 km towards NE direction of mine site	
17	Nearest Habitation	: 2 kacha houses at distance of approx. 200 meter in South Direction As per CC, Islri vide letter no. 513, dated 19.12.2023 consent has been obtained by PAs from owners to shift the said houses	
18	Nearest Railway Station	: Dhanwar Railway station, approx. 12.35 km towards SSE direction	
19	Nearest Airport	: Girdhri Airport, approx. 51.64 km towards SE direction	
20	Nearest Forest	: Palma PF, Approx. 3.50 Km. In NW Direction Sanchi PF, Approx. 0.5 Km. In North Direction Maharwar PF, Approx. 0.57 Km. In NE Direction Hathiyagarih PF, Approx. 1.5 Km. In East Direction kalipahan PF, Approx. 3.55 Km. In ENF Direction	
21	Road & Highways	: SH -13, Approx. 6.20 km towards South direction	
22	Approach Road	: Approx. 780 meter	

CO-ORDINATES

1	Latitude	: From 24° 31' 34.24" N	To 24° 31' 39.00" N
2	Longitude	: From 85° 55' 06.91" E	To 85° 55' 14.72" E

LAND DETAILS

Khata no.	Plot no.
13 & 21	389, 394, 396, 400, 393, 395, Pl. 399, 390, 403, 408 & 409

(Signature)

(Signature)

(Signature)

(Signature)

(Signature)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Giridih vide letter no. 180/M, dated 10.02.2024.
2	CO	:	The CO, Tisri vide letter no. 513, dated 19.12.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in Khatlyan.
3	DMO Cluster	:	DMO, Giridih vide memo no. 461/M, dated 05.05.2025 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. 2469, dated 12.10.2023 certified that the proposed project site is outside Eco Sensitive Zone of Koderma Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Giridih East Forest Division vide letter no. 3150, dated 10.12.2021 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 Giridih District (Page no. 61, Sl. no. 74).
7	Gram Sabha	:	BDO, Tisri vide letter no. 1634, dated 02.11.2023 informed that Gram Sabha conducted on 02.11.2023.
8	Mine Plan Approval	:	Approved by The Assistant Director, Geology, District Geological Office, Bokaro vide Memo No. 109, dated 14.05.2025.
9	Qualified Person	:	Shri Tapan Kumar Chakravarty through e-mail dated 24.06.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Lease Area	:	1.56Ha. or 3.86Acre	Life of Mine –6 year.
3	Waste Generation	:	Total 3028.00cum waste shall be generated during the plan period.	
4	Stripping Ratio	:	1: 0.10	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Elevation of Mine	:	281AMSL to 280AMSL	
8	Ground Level Elevation	:	280AMSL	
9	Ultimate Working Depth	:	262AMSL (18m BG1)	

10	Water Table	: 252-250AMS (28.30 m BGL)
11	Topography of Mine	Flat topography
12	Explosive Requirement	90 kg/day
13	Diesel/Fuel requirement	90 litre/day

Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Waste (cum)	Bench (AMS)
1st	34572.00	93344.40	1109.00	280-268
2nd	36785.00	99319.50	759.00	280-262
3rd	49204.00	105850.20	175.00	274-268
4th	37888.00	102297.60	985.00	274-262
5th	10367.00	44190.30		274-262
Total	164816.00	445003.20	3028.00	

Land Use

Land Utilization	Existing Land use (Ha.)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry		0.89	0.89 (Entire area shall be left as water reservoir for rain water harvest etc)
Road	0.02	Comes under quarry	Comes under quarry
Safety zone plantation		0.67 (Plantation)	0.67 (Plantation)
Balance area	1.54	0.0	0.0
Total Applied Area		1.56	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.67ha	1675
2	Along Approach Road	780m	1560
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	Nil	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	20,000 15,000 8,000 7,000
3	Plantation	16,67,500	1,00,000
4	Construction and maintenance of haul road	3,90,000	1,50,000
TOTAL		20,57,500	5,00,000

Note: *3335 plants * 500 Rs (for each plants including hedges and fences) = Rs. 16,67,500/-

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

300* 300 = 90000/- ~ 1,50,000/-

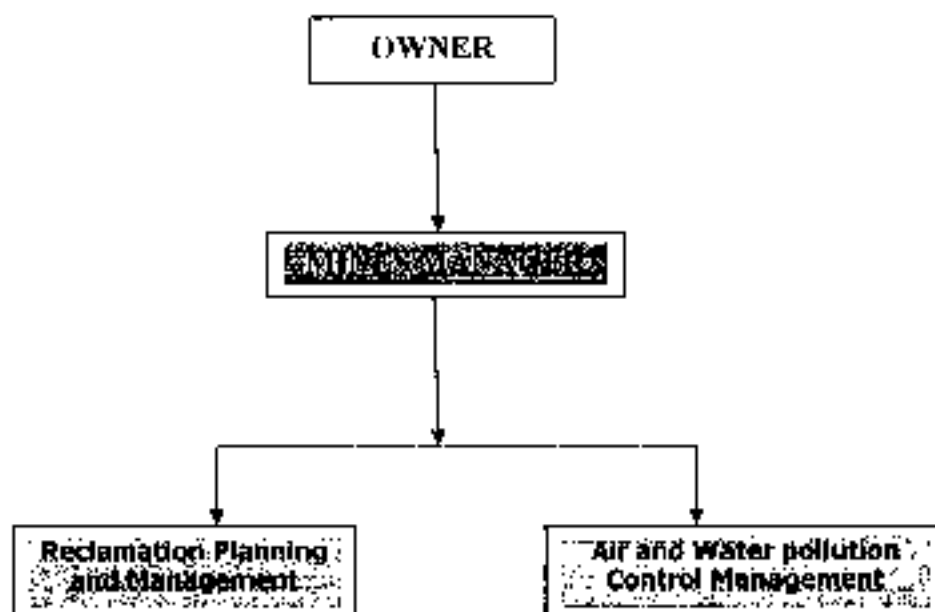
* 5 lakh per kilometer 500000 * 0.78 km haul road =3,90,000/-

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000
2	Soil	2 Stations	6 Monthly	8000
3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

There is generation of 3028.00 cum waste 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.



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 will 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 par and 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 katcha 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

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

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12

3	Low Risk	13-25

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

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

Preventive Measures:

Face Stability

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

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created

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- 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 suppressor, 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

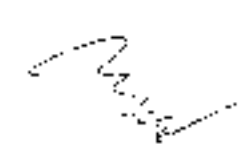
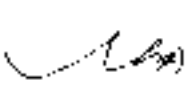
Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

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 daytime 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

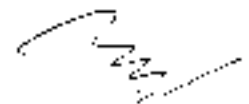
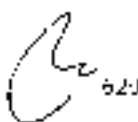
Transportation

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 base line 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 Upraili Kanhal Stone Deposit of Smt. Hengamuni Murmu & Others, Village : Upraili Kanhal, Anchal : Tisri, Distt. : Giridih, Jharkhand (1.56 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I 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 Mo 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 PPLs 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. Kumhargarhia Stone Deposit of M/s Maa Tara Stone Quarry (Partners : Shri Rajendra Mehta & Shri Rajendra Singh), Village - Kumhargarhia, Thana : Jamua, Distt. : Giridih, Jharkhand (0.84 Ha).

(Proposal no.: SIA/JH/MIN/ 538926 /2025)

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

This is a new project which has been taken for appraisal on 26.06.2025

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 16620 cum/annum or 42630.30 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Kumhargarhia Stone Deposit M/s Maa Tara Stone Quarry Partner (1) Shri Rajendra Mehta, S/O-Shri Chhoti Mehta Address - Village - P.O. - Domchanchi
2	Lessee	Thana Domchanchi, District Koderma, State-Jharkhand Partner (2) Shri Rajendra Singh, S/O-Late Gyan Singh Address - Village-Reidih, P.O.-Masmoma, Thana-Nawawan, District-Koderma, State-Jharkhand
3	Lease Address	Village - Kumhargarhia, Anchal & Thana Jamua, District Giridih, State - Jharkhand
4	Lease Area	0.84ha. Acres 2.02 Acres
5	Type of Land	Non-Forest (Rajvati Land)
6	Project Cost	Rs. 50.0 Lakhs

7	EMP Budget	:	Capital: Rs. 8.375 Lakhs	Recurring: 5.0 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	157263 cum	424610.1 Tonnes
10	Mine Life	:	10 year.	
11	Man power	:	21	
12	Water Requirement	:	6.11 ~ 6.50 KLD {Drinking: 0.21 KLD, Dust Suppression: 3.15 KLD, Plantation: 2.75 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	:	Usri nadi, Approx. 0.5 km. in NE direction of mine site.	
17	Nearest Habitation	:	Jamua, Approx. 9.44 km towards WNW direction.	
18	Nearest Railway Station	:	Jamua Railway station, approx. 8.60 km towards WNW direction.	
19	Nearest Airport	:	Deoghar Airport, approx. 49.28 km towards ENE direction.	
20	Nearest forest	:	PF, Approx. 1.59 km towards S direction of mine site. PF, Approx. 3.5 km towards N direction of mine site. PF, Approx. 4.9 km towards SW direction of mine site. Fairly Dense Mixed Jungle, Approx. 2.50 km towards NW direction of mine site. Open Mixed Jungle, Approx. 4.0 km towards MNW direction of mine site.	
21	Road & Highways	:	SH – 13, Approx. 3.71 km towards W direction.	
22	Approach Road	:	Approx. 300 meter	

CO-ORDINATES

1	Latitude	:	From 24°20' 10.63"N	To 24°20' 15.11"N
2	Longitude	:	From 86°14' 06.06"E	To 86°14' 10.24"E

LAND DETAILS

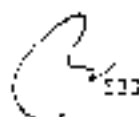
Khata no.	Plot no.
02 & 03	348 (P), 349, 350, 351, 352, 353, 354 & 356 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	The Letter of Intent (LoI) has been issued by District Mining Officer, Giridih vide letter no. 222/M, dated 24.03.2025.
2	CO	The CO, Jamua, Giridih vide letter no. 1052, dated 24.07.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jham" in Khatyan.
3	DMO Cluster	DMO, Giridih vide memo no. 384/M, dated 15.04.2025 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. 298, dated 25.02.2025 certified that the proposed project site is outside Eco Sensitive Zone of Parasnata & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	Divisional Forest Officer, Giridih (West Forest Division) vide letter no. 1439, dated 02.08.2023 certifies 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 (Page no. 60, Sl. no. 63).
7	Gram Sabha	BOO, Jamua, Giridih vide letter no. 1277, dated 04.10.2024 informed that Gram Sabha conducted on 08.08.2024.
8	Mine Plan Approval	Approved by The Assistant Director, Geology, District Geological Office, Bokaro vide Memo No. 95, dated 03.05.2025.
9	Qualified Person	Shri Tapan Kumar Chakravarty through e-mail dated 24.06.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	Opencast/Mechanized Method
2	Lease Area	0.84 Ha. or 2.08 Acres Life of Mine- 10 year.
3	Waste Generation	Total 9664.20cum waste shall be generated during the plan period.
4	Stripping Ratio	1:0.58
5	Working Days	300
6	Bench size & No	6m x 6m
7	Elevation of Mine	321AMS to 320AMS
8	Ground level Elevation	320AMS
9	Ultimate Working Depth	296AMS (24 mBGL)

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10	Water Table	:	287-285AMSL (33-35 m BGL)
11	Topography of Mine	:	Undulating hillocks
12	Explosive Requirement	:	70 kg/day
13	Diesel/Fuel requirement	:	70litre/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	15162.00	40937.40	(798+2400) =3198.00	4322.80	320-314
2nd	16620.00	42630.30	(831+2650) =3481.00		320-314
3rd	15266.50	41219.55	(803.50+660) =1463.50		320-308
4th	14592.00	39398.40	768.00		314-308
5th	14320.30	38664.81	753.70		314-302
Total	75960.80	202850.46	9664.20	4322.80	--

Land Use

Land Utilization	Existing Land use (Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry	0.0	0.57 (Entire area shall be left as water reservoir for rain water harvesting)	0.57 (Entire area shall be left as water reservoir for rain water harvesting)
Mine Road	0.00	0.00	0.00
Safety Zone Plantation	0.0	0.27	0.27
Balance	0.84	0.0	0.0
Total	0.84	0.84	0.84

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.2 /ha	675
2	Along Approach Road	:	300m	600
3	No. of plants distributed with	:	--	100

consultation local authorities

/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 n/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCE, 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	Nil	2,00,000
2	Baseline Monitoring		
	(i) Air		20,000
	(ii) Water		15,000
	(iii) Soil		8,000
	(iv) Noise		7,000
3	Plantation	6,87,500	1,00,000
4	Construction and maintenance of haul road	1,50,000	1,50,000
	TOTAL	8,37,500	5,00,000

Note: *1375 plants * 500 Rs (for each plants including hedges and fences) = Rs. 6,87,500/-

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

300* 300 = 90000/- ~ 1,50,000/-

Environment Monitoring Programme

Sl. No.	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000
2	Soil	2 Stations	6 Monthly	8000
3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

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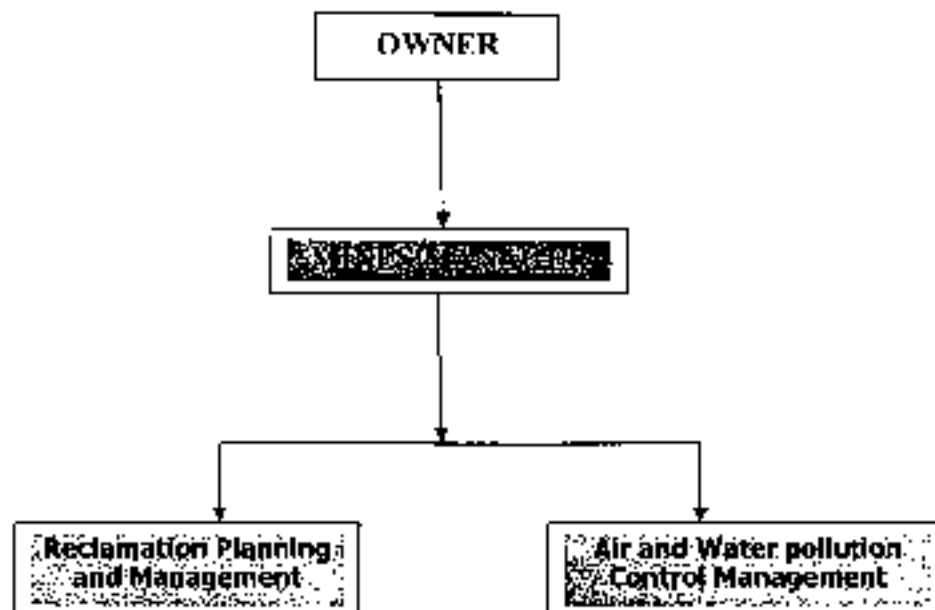
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Solid Waste Management

Pit layout has been shown in development plan & section and there is only 9664.20 cum waste generated during this plan period and 4322.80 cum in ultimate stage 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 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

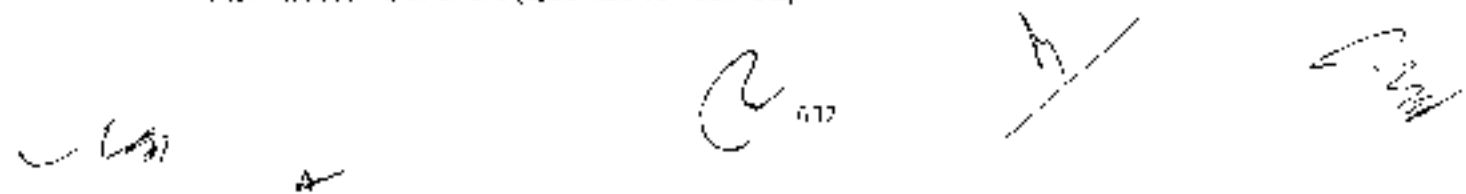
Probability/Likelihood of Occurrence of Hazard

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 once within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss. There by 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 not or less minor illness, injury or system damage

Risk Assessment Chart (Qualitative Method)



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

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6

6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	10

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

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

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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 bid etc. will be put in place
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

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

Undertaking submitted affirming:

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Kumbargarhia Stone Deposit of M/s Maa Tara Stone Quarry (Partners : Shri Rajendra Mehta & Shri Rajendra Singh), Village : Kumbargarhia, Thana : Jamua, Distt. : Giridih, Jharkhand (0.84 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - I along with following specific conditions :

- In compliance of OM no. F.No. A3-27/3/2021-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

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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.

6. Chanddih Stone Deposit of M/s Chand Stone Mines (Partners : (i) Jahid Hussain (ii) Shri Ranjeet Kumar Saw (ii) Smt. Sarita Mehta), Village : Chanddih, Thana : Jamua, Distt. : Giridih, Jharkhand (0.50 Ha).

(Proposal no.: SIA/JH/MIN/ 541306 /2025)

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

This is a new project which has been taken for appraisal on 26.06.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 10497.50 cum/annum or 28343.25 TPA

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Chanddih Stone Deposit
2	Lessee:	M/S Chand Stone Mines Partner-(1) Jalud Hussain, S/o-Md. Sayeed Address -Village-Mayadih, Taluabadi, P.O.-Thana -Koderma, District-Koderma, State -Jharkhand. Partner-(2) Sri. Ranjeet Kumar Saw, S/o-Late Basudev Saw Address -Village-Mahathadih, P.O.-Thana-Dornchandi, District-Koderma, State -Jharkhand Partner-(3) Smt. Santa Mehta, W/o-Sri Ramchandra Melita Address -Bigha, P.O.-Fuwariya, Thana-Nawalsahi, District-Koderma, State -Jharkhand
3	Lease Address	Village - Chanddih, Thana- Jamua, District - Giridih, State - Jharkhand
4	Lease Area	0.50ha Acres 1.23 Acres
5	Type of Land	Non Forest (Barwadi Land)
6	Project Cost	Rs. 500 Lakhs
7	EMF Budget	Capital Rs. 16.025 Lakhs Recurring: 5.01 Lakhs / year
8	New or Expansion	New
9	Mineable Reserves	105117.50 cum 28381 / 25 Tonnes
10	Mine Life	10 year
11	Man power	27
12	Water Requirement	11.17 ~ 11.50 KLD KLD(Drinking, 2.27KLD, Dust Suppression 6.21 KLD, Plantation, 4.69 KLD)
13	Water Source	Water will be taken from nearby village
14	OG Set / power	200 KVA
15	Crusher	No Crusher
16	Nearest Water Body	Usri nadi, Approx. 1.05 km towards North direction of mine site
17	Nearest Habitation	Chanddih, Approx. 5.10 km towards NNE direction.
18	Nearest Railway Station	Jamua Railway station, approx. 7.00 km towards NNE direction.
19	Nearest Airport	Deoghar Airport, approx. 54.47 km towards E direction.
20	Nearest Forest	FF, Approx. 2.9 km towards East direction of mine site. FF, Approx. 5.3 km towards East direction of mine site.
21	Road & Highways	SH-13, Approx. 5.47 km towards SW direction
22	Approach Road	Approx 350 meter

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CO-ORDINATES

1	Latitude	:	From 24° 24' 40.60" N	To 24° 24' 43.98" N
2	Longitude	:	From 86° 10' 50.35" E	To 86° 10' 54.50" E

LAND DETAILS

Khata no.	Plot no.
01	330

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Giridih vide letter no. 357/M, dated 05.04.2025.
2	CO	:	The CO, Jamua, Giridih vide letter no. 822, dated 12.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in Khatlyan.
3	DMO Cluster	:	DMO, Giridih vide memo no. 434/M, dated 28.04.2025 certified that 03 other mining lease area (1.5525 Acre, 2.37 Acre & 3.60 Acre) exists within 500 meters radius from proposed project site and total area is 8.7525 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1873, dated 27.08.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Divisional Forest Officer, Giridih West Forest Division vide letter no. 1459, dated 28.08.2024 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 Giridih District (Page no. 61, Sl. no. 66).
7	Gram Sabha	:	BDU, Jamua, Giridih vide letter no. 1498, dated 10.12.2024 informed that Gram Sabha conducted on 14.10.2024.
8	Mine Plan Approval	:	Approved by The Assistant Director, Geology, District Geological Office, Bokaro vide Memo No. 120, dated 30.05.2025.
9	Qualified Person	:	Shri Tapan Kumar Chakravarty through e-mail dated 24.06.2025 affirmed that the mine plan has been prepared by him.

- Gahien 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 FCCF, Development Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Working Details

1	Mining Method	Opencast Mechanized Method
2	Lease Area	0.50ha or 1.23 Acre Life of Mine -10 year.
3	Waste Generation	Total 2611.80 cum waste shall be generated during the plan period
4	Stripping Ratio	1:0.09
5	Working Days	300
6	Bench size & No	6m x 6m
7	Elevation of Mine	350AMSL to 345AMSL
8	Ground Level Elevation	349AMSL
9	Ultimate Working Depth	335AMSL (14m BGL)
10	Water Table	522-320AMSL (27-29m BGL)
11	Topography of Mine	Flat topography
12	Explosive Requirement	50 kg/day
13	Diesel/Fuel requirement	50litre/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)
1 st Year	9025.00	24367.50	475.00	2920.70	349-347
2 nd Year	9872.40	26655.48	519.60		349-344
3 rd Year	10487.30	28302.21	551.70		347-341
4 th Year	9747.00	26316.90	513.00		344-338
5 th Year	10497.50	28343.25	552.50		338-335
Total	49624.20	133985.34	2611.80	2920.70	

Land Use

Land Utilization	Existing Land use (Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry	0.07	0.22; Entire area shall be left as water reservoir for rain water harvesting)	0.29 (Entire area shall be left as water reservoir for rain water harvesting)

Mine Road	0.01	Comes under quarry	Comes under quarry
Safety Zone Plantation	0.0	0.21	0.21
Balance	0.42	0.07	0.0
Total	0.50		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.21ha	525
2	Along Approach Road	860m	1720
3	No. of plants distributed with consultation local authorities /village Panchayat	--	100

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs)	Recurring Cost (Rs)
1	Pollutions Control & Dust Suppression	Nil	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	20,000 15,000 8,000 7,000
3	Plantation	11,72,500	1,00,000
4	Construction and maintenance of haul road	4,30,000	1,50,000
TOTAL		16,02,500	5,00,000

*Note: *2345 plants * 500 Rs (for each plants including hedges and fences) = Rs. 11,72,500/-*

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

300 300 = 90000/- ~ 1,50,000/-*

** 5 lakh per kilometer (500000 * 0.86 km haul road =4,30,000/-)*

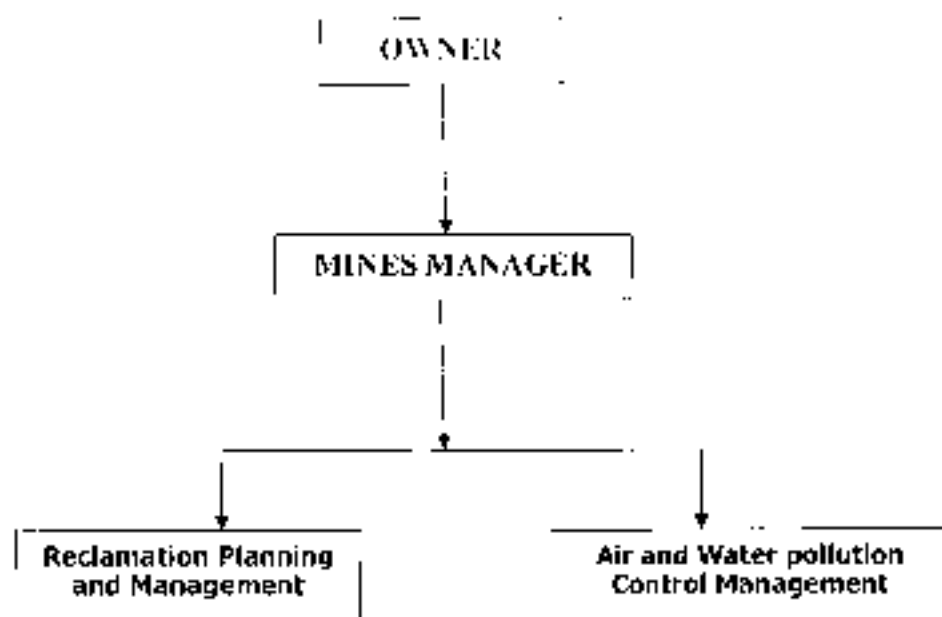
Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000
2	Soil	2 Stations	6 Monthly	8000

3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

Pit layout has been shown in development plan & section and there is 2611.80 cum waste generated during this Mining Plan period and 2970.70 cum in ultimate stage which is used for village & haul road maintenance, so there is no requirement of waste dumping Plan for this mining plan.



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 gariann 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.

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- 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, There by 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	Ht 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 this 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 drilling 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.

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

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- Mine road 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 Chanddih Stone Deposit of M/s Chand Stone Mines (Partners : (i) Jahid Hussain (ii) Shri Ranjeet Kumar Saw (iii) Smt. Sarita Mehta), Village : Chanddih, Thana : Jamua, Distt. : Giridih, Jharkhand (0.50 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - I along with following specific conditions :

- I. In compliance of OM no. 1 No. 143-23/3/2024- A11 (F-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 Me Ke Naam" and the details of the same shall be uploaded in the MenLIFE Portal (<https://menlife.moi.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 at the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PFT, Audiometry and other required tests. Summary findings of same to be 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 on any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.



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7. **Pipratand Stone Deposit of M/s Dwarika City Developers & Industries (Partners : Shri Shambhu Agarwal & Shri Subhash Agarwal), Village : Pipratand, Anchal : Tundi, Distt. : Dhanbad, Jharkhand (1.942 Ha).**

{Proposal no.: SIA/JH/MIN/ 541621 /2025}

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

This is a new project which has been taken for appraisal on 26.06.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 118358 cum/annum or 319566 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Pipratand Stone Deposit
2	Lessee:	: M/s Dwarika City Developers & Industries Partner1: Sri Shambhu Agarwal S/o - Shri Pawan Kumar R/o Flat No-5B, Katras Road, Matkuria, Dist.-Dhanbad, State-Jharkhand & Partner2: Sri Subhash Agarwal S/o - Shri Pawan Kumar Agarwal, Address-Flat No-4B, Katras Road, Matkuria, Police Station-Dhanbad Dist.-Dhanbad (Jharkhand).
3	Lease Address	: Mouza - Pipratand , Anchal- Tundi, District – Dhanbad, State - Jharkhand
4	Lease Area	: 1.942ha. Acres- 4.80 Acres
5	Type of Land	: Non-Forest (Raiyati Land)
6	Project Cost	: Rs. 80.0 Lakhs
7	EMP Budget	: Capital: Rs. 12.68Lakhs Recurring: 5.0Lakhs / year
8	New or Expansion	: New
9	Mineable Reserves	: 583194 cum 1574623 tonnes
10	Mine Life	: 5 year.
11	Man power	: 24
12	Water Requirement	: 9.38 ~ 9.40 KLD (Drinking: 0.24 KLD, Dust Suppression: 4.88 KLD, Plantation: 4.26 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	: Jauria Nala Approx. 3.85 km towards SW direction of mine site.

17	Nearest Habitat on	Kotaldi, Approx. 0.61 km towards SSE direction.
18	Nearest Railway Station	New Giridih Railway station, approx. 48.94 km towards NNW direction
19	Nearest Airport	Giridih Airport approx. 39.76 km towards NNW direction Reserved forest approx. 3.80 km towards East direction of mine site Reserved forest approx. 2.50 km towards NE direction of mine site Reserved forest approx. 3.90 km towards NNE direction of mine site Reserved forest approx. 4.75 km towards NNE direction of mine site Dense mixed jungle approx. 4.0 km towards NW direction of mine site.
21	Road & Highways	SH - 13, Approx. 1.15 km towards ENE direction
22	Approach Road	Approx 413 meter

CO-ORDINATES

1	Latitude	From 23° 54' 31.457" N	To 23° 54' 37.885" N
2	Longitude	From 86° 30' 3.665" E	To 86° 29' 59.715" E

LAND DETAILS

Khata no.	Plot no.
Old Khata No. 45,	Old Plot No. 1006 (P), 1007 (P),
New Khata No. 118	1008, 1009, 1010, 1011, 1012 (P), 1013, 1014, 1015, 1016, 1017, 1018, 1019, 1021(P), & 1023(P), New plot no. 1040 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	The Letter of Intent (LOI) has been issued by District Mining Officer, Dhanbad vide letter no. 671/M, dated 05.05.2025
2	CO	The CO, Dhanbad vide letter no. 512, dated 07.12.2024 has mentioned the plot no. of the project is not recorded as "Jungle-land" in R.S. Khatriyan & Register II.
3	DMD Cluster	DMD, Dhanbad vide memo no. 799/M, dated 24.05.2025 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. 2277, dated 05.11.2024 certified that the proposed project site is outside 500

		Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary
5	DFO Territorial	Divisional Forest Officer, Dhanbad Forest Division vide letter no. 328, dated 05.02.2025 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	The DMO, Dhanbad has been certified vide memo no. 934/M, dated 17.06.2025 that this project is mentioned in approved DSR of Dhanbad District as a potential village (Page no. 163, Sl No. 90).
7	Gram Sabha	Gram Sabha conducted on 30.12.2024.
8	Mine Plan Approval	Approved by District Mining Officer, Dhanbad vide Memo No. 874/M, dated 05.06.2025.
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	Lease Area	:	1.942Ha. or 4.80Acre	Life of Mine -5 year.
3	Waste Generation	:	Total 74512cum waste shall be generated during the plan period.	
4	Stripping Ratio	:	1: 0.12	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Elevation of Mine	:	253 AMSL to 248AMSL	
8	Ground Level Elevation	:	248AMSL	
9	Ultimate Working Depth	:	200AMSL (48 m BGL)	
10	Water Table	:	180-77AMSL (68-71 m BGL)	
11	Topography of Mine	:	small hillocks	
12	Explosive Requirement	:	90 kg/day	
13	Diesel/Fuel requirement	:	90litre/day	

Production Details

Year	Production of stone in cum	Production of stone in tonnes	Overburden waste in cum	Intercalated waste in cum	Waste in cum	Bench Bottom (mRL)
1 st Year	113905	307544	31610	5995	37605	248-236
2 nd	115562	312017	0	6082	6082	236-224

Year						
3 rd	117219	416490	3815	6169	9984	224-242
4 th	118151	319006	3393	6218	14611	248-224
5 th	118355	319566	0	6229	6229	224-200
Total	583194	1574623	43818	30694	74512	--

Land Use

Land Utilization	Existing Land use (Ha.)	At the end of plan period (Ha)	At Conceptual period (Ha)
Excavation	0.0	1.462 (Entire area shall be left as water reservoir for rain water harvesting)	1.462 (Entire area shall be left as water reservoir for rain water harvesting)
Waste dump	0.00	0.00	0.00
Road	0.0	0.00	0.0
Infrastructure (rusher)	0.0	0.0	0.0
Safety Zone (Plantation)	0.0	0.48	0.48
Total	0.00	1.942	1.942
Unused Area	1.942	0.00	0.00
Total Lease Area		1.942	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.480ha	1200
2	Along Approach Road	412 m	326
3	No. of plants distributed with consultation local authorities A 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 life, 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	Nil	2,00,000
2	Baseline Monitoring		
	i) Air		20,000
	ii) Water		15,000
	iii) Soil		8,000
	iv) Noise		7,000
3	Plantation	10,63,000	1,00,000
4	Construction and maintenance of haul road	2,05,000	1,50,000
TOTAL		12,68,000	5,00,000

*Note: *2126plants * 500 Rs (for each plants including hedges and fences) = Rs. 10,63,000/-*

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

300 300 = 90000/- ~ 1,50,000/-*

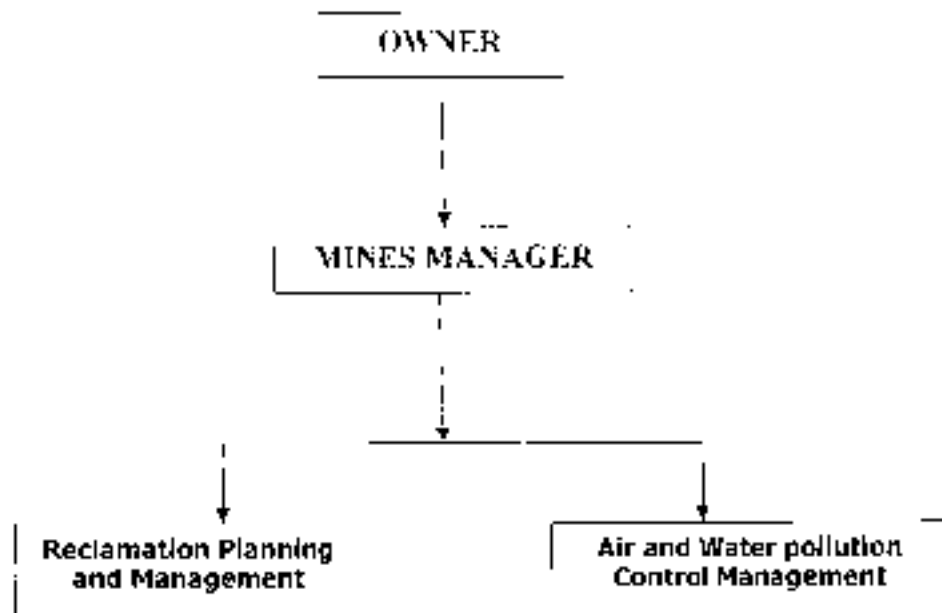
** 5 lakh per kilometer (500000 * 0.41 km haul road =2,05,000/-)*

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000
2	Soil	2 Stations	6 Monthly	8000
3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

It has been calculated that total waste 74512 cum, 30694 cum intercalated waste 43818 cum overburden 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.



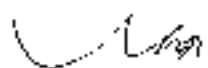
Organization Structure

Water Quality Management

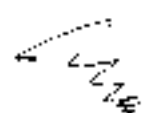
- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall 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 regrounding 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 fast 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, There by 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/Tipping (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	Remote	Minor	16

		Exposure to Dust			

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 operation 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

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- 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 DiDi 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

certifying 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:

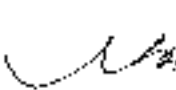
- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

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 operation.
- Only trained drivers will be hired.



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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 gablon 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 Pipratand Stone Deposit of M/s Dwarika City Developers & Industries (Partners : Shri Shambhu Agarwal & Shri Subhash Agarwal), Village : Pipratand, Anchal : Tundi, Distt. : Dhanbad, Jharkhand (1.942 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I 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 workings 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 2 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 at the time with Geo-Tagged photographs.
- V. Pre-employment Occupational health check up for employees to be done and thereafter at annual interval for P.T.T. Audiometry and other required tests. Summary findings of same to be 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. Dudhiya Stone Deposit of M/s A.K. Irfan (Prop. : Md. Irfan), Village : Dudhiya, Thana : Ballapur, Distt. : Dhanbad, Jharkhand (2.428 Ha).

(Proposal no.: SIA/JH/MIN/ 541336 /2025)

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

This is a new project which has been taken for appraisal on 26.06.2025

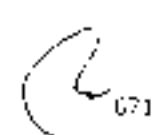
Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

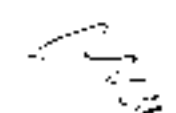
EC Application for: Proposed Capacity- 55885 cum/annum or 150889 TPA.





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Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Dudhiya Stone Deposit
2	Lessee:	: M/s A. K. Irfan Proprietor- Md. Irfan, S/o-Late Abdul Vahab At-Aman Society, Gate No-04, Azad Nagar Bhuli, PO-Dhanbad, PS-Bank more, District-Dhanbad, Jharkhand
3	Lease Address	: Village - Dudhiya, Thana- Baliapur, District - Dhanbad, State- Jharkhand
4	Lease Area	: 2.428ha. Acres- 6.00 Acres
5	Type of Land	: Non-Forest (Raiyati Land)
6	Project Cost	: Rs. 70.0 Lakhs
7	EMP Budget	: Capital: Rs. 23.485 Lakhs Recurring 5.00Lakhs / year
8	New or Expansion	: New
9	Mineable Reserves	: 545481cum 1472798Tonnes
10	Mine Life	: 10 year.
11	Man power	: 19
12	Water Requirement	: 9.67 ~ 10.00 KLD(Drinking: 0.19KLD, Dust Suppression: 5.04KLD, Plantation: 4.44 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	: Ghlnadi, Approx. 0.20 km. In South direction. Damodar River, Approx. 4.50 km. in SE direction.
17	Nearest Habitation	: Neamatpur, approx. 0.60 km towards ESE direction.
18	Nearest Railway Station	: Rakhitpur Railway station, approx. 9.1 km towards NW direction
19	Nearest Airport	: Dhanbad Airport, approx. 21.8 km towards NW direction.
20	Nearest Forest	: Nil.
21	Road & Highways	: NH - 19, Approx. 13.3 km In North direction.
22	Approach Road	: Approx 400 meter

CO-ORDINATES

1	Latitude	: From 23°41'20.12485" N	To 23°41'28.04269" N
2	Longitude	: From 86°34'12.46724"E	To 86°34'19.66487" E

LAND DETAILS

Khata no.	Plot no.
530	5230 & 5226 (P)

STATUTORY CLEARANCES

1	LOI / Lease doc	The Letter of Intent (LOI) has been issued by District Mining Officer, Dhanbad vide letter no. 495/M dated 28.03.2025
2	CCO	The C.O. Balaboi (Dhanbad) vide letter no. 127, dated 18.02.2025 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatriyan.
3	DMO Cluster	DMO, Dhanbad vide memo no. 528/M dated 02.04.2025 certified that 01 Lot (6.02 Acre) exists within 500 meters radius from proposed project site and total area is 12.02 Acre
4	DFO Wild Life	DFO, Wildlife Division, Hazarbagh vide letter no. 195 dated 15.02.2025 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topomandi Wildlife Sanctuary
5	DFO Territorial	Divisional Forest Officer, Dhanbad Forest Division vide letter no. 397, dated 10.02.2025 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 Dhanbad District (Page no. E3, S' No. 29)
7	Gram Sabha	Gram Sabha conducted on 19.02.2025.
8	Mine Plan Approval	Approved by District Mining Officer, Dhanbad vide Memo No. 626/M, dated 30.04.2025
9	Qualified Person	Smt. 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	Lease Area	2.428 Ha. or 6.00 Acre Life of Mine -10 year.
3	Waste Generation	Total 14037 cum waste shall be generated during the life period
4	Stripping Ratio	1:0.07

2023

by

2023

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5	Working Days	:	300
6	Bench: size & No	:	6m x 6m
7	Elevation of Mine	:	166AMSL to 160AMSL
8	Ground Level Elevation	:	160AMSL
9	Ultimate Working Depth	:	110AMSL (50 m BGL)
10	Water Table	:	100-97AMSL (60-63 m BGL)
11	Topography of Mine	:	small hillocks
12	Explosive Requirement	:	110 kg/day
13	Diesel/Fuel requirement	:	110 litre/day

Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Overburden in Cum	Intercalated waste in Cum	Total Waste in Cum	Bench (mRL)
1 st Year	51175	138171	26934	2693	29627	164-152
2 nd Year	52193	140921	0	2747	2747	152-146
3 rd Year	53339	144014	0	2807	2807	146-146
4 th Year	54484	147108	0	2868	2868	140-134
5 th Year	55885	150889	0	2941	2941	134-122
Total	267076	721103	26934	14056	40990	-

Land Use

Type of land use	Existing land use (Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)
Excavation	0.0	1.277	1.848 (0.140 ha area shall backfilled, 0.930 ha left as water reservoir for rain water harvesting & 0.779 ha shall be left as dead bench plantation)
Waste Dump	0.0	0.450	Nil
Road	0.0	0.003	0.00
Village Road Barrier	0.0	0.052	0.052(Plantation)
Safety Zone Plantation	0.0	0.528	0.528
Total	0.00	2.310	2.428
Unused Area	2.428	0.118	0.00
Total Lease Area	2.428		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.528 ha	1320
2	Along Approach Road	400m	800
3	Green belt (Dead bench)	0.779 ha	1947
4	Green Belt Village Road	0.352 ha	130
	No. of plants distributed with consultation local authorities /village Panchayat		100

- Gebion 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 thinning, 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. Reports 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	Nil	2,00,000
2	Baseline Monitoring		
	i) Air		20,000
	ii) Water		15,000
	iii) Soil		8,000
	iv) Noise		7,000
3	Plantation	21,48,500	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
	TOTAL	23,48,500	5,00,000

Note: $4297 \text{ plants} \times 500 \text{ Rs (for each plants including hedges and fences)} = 21.485 \text{ lakh}$

Salary of Labor for haul road maintenance $1 \text{ labor} \times 300 = 300 \text{ per day}$

$300 \times 300 = 90000/-$

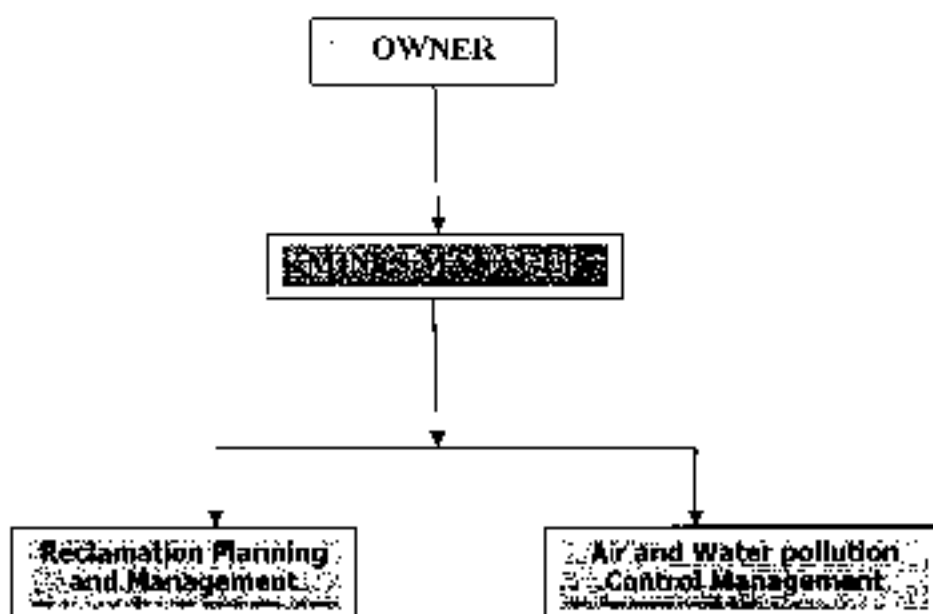
$\sim 5 \text{ lakh per kilometer (500000} \times 0.40 \text{ km haul road} = 2,00,000/-)$

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000
2	Soil	2 Stations	6 Monthly	8000

3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

It has been calculated that total 40991 cum in-situ waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 20495 cum (Insitu) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 20495cum insitu 25619.13cum loose & 21776.26 cum compact waste shall be temporary dumped on southern part of applied lease area and it will cover about 0.450ha 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.
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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/Tipping (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 15°
- 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

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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 habitation, 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 DGMIS 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, directed and loaded, 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.

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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

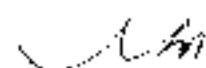
The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator 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.

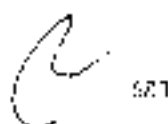
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation
- Mine road will be made sufficiently wide to keep two-way traffic
- Mine roads will be designed as per the specifications given under MMR 1951
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operation.
- Only trained drivers will be hired

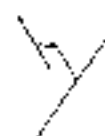
Undertaking submitted affirming:

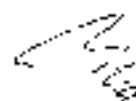
- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future
- c. If any changes are 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 garrison 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.



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- 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 Dudhiya Stone Deposit of M/s A.K. Irfan (Prop. : Md. Irfan), Village : Dudhiya, Thana : Baliapur, Distt. : Dhanbad, Jharkhand (2.428 Ha) is recommended for grant of EC. The various condillons for grant of EC is enclosed as Annexure - I 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.

9. Pochari Stone Deposit of M/s Statelty Infrastructure (Partners : Shri Birendra Kumar & Shri Nishant Kumar), Village : Pochari, Anchal : Baghmara, Distt. : Dhanbad, Jharkhand (2.855 Ha).

{Proposal no.: SIA/JH/MIN/ 541294 /2025}

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

This is a new project which has been taken for appraisal on 26.06.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 68381 cum/annum or 184620 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Pochari Stone Deposit M/S Statelty Infrastructure Partner 1 – Sri Birendra Kumar At Village- Harina, Po-Newagau, Ps-Barora District- Dhanbad, State-Jharkhand
2	Lessee	& Partner 2- Sri Nishant Kumar At Village- Chihati East, Po-Tundo, Ps-Barora District- Dhanbad, State-Jharkhand
3	Lease Address	Village – Pochari, Anchal- Baghmara, District – Dhanbad, State – Jharkhand
4	Lease Area	2.855ha Acres 7.055 Acres
5	Type of Land	Non-Forest (Raivati Land)
6	Project Cost	Rs. 70.0 Lakhs
7	EMP Budget	Capital: Rs. 15.515 Lakhs Recurring: 5.0 Lakhs / year
8	New or Expansion	New
9	Mineable Reserves	66685/8 cum 1800515 tonnes
10	Mine Life	10 years
11	Man power	22
12	Water Requirement	11.43 ~ 11.50 KLD (Drinking: 0.23KLD, Dust Suppression: 6.00KLD, Plantation: 5.20 KLD)
13	Water Source	Water will be taken from nearby village
14	DG Set / power	500KVA
15	Crusher	No Crusher
16	Nearest Water Body	Khudiyia nadi, Approx. 0.10 km in South direction of mine site.
17	Nearest Habitation	Khonath, Approx. 0.69 km towards west direction.
18	Nearest Railway	Matari Railway station, approx. 2.59 km towards NNE direction.

	Station	:	
19	Nearest Airport	:	Ranchi Airport, approx. 107.74 km towards WSW direction.
20	Nearest Forest	:	PF, Approx. 3.5 km in NE direction. PF, Approx. 2.0 km in West direction. PF, Approx. 1.5 km in WSW direction
21	Road & Highways	:	NH - 19, Approx. 8.48 km towards NNE direction
22	Approach Road	:	Approx. 500 meter

CO-ORDINATES

1	Latitude	:	From 23° 49' 8.707" N	To 23° 49' 15.214" N
2	Longitude	:	From 86° 13' 29.511" E	To 86° 13' 37.970" E

LAND DETAILS

Khata no.	Plot no.
108, 30, 111 & 63	557, 554 (P), 558 & 561

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Dhanbad vide letter no. 572/M, dated 12.04.2025.
2	CO	:	The CO, Baghmara (Dhanbad) vide letter no. 1251, 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 Cluster	:	DMO, Dhanbad vide memo no. 798/M, dated 24.05.2025 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. 220, dated 19.02.2025 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. 2524, dated 27.09.2024 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 Dhanbad District (Page no 64, Sl. No. 31).

7	Grain Sabha	Grain Sabha conducted on 07.12.2024
8	Mine Plan Approval	Approved by District Mining Officer, Dhanbad vide Memo No. 873/M, dated 05.06.2025.
9	Qualified Person	Shr. Vinay 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	Lease Area	2.855HA or 7.055 Acre Life of Mine -10 year
3	Waste Generation	Total 56819cum waste shall be generated during the plan period.
4	Stripping Ratio	1: 0.08
5	Working Days	300
6	Bench size & No	6m x 6m
7	Elevation of Mine	235AMS1 to 228AMS1
8	Ground Level Elevation	228AMS1
9	Ultimate Working Depth	180 AMSL (48 m BGL)
10	Water Table	170-187 AMSL (58-61 mBGL)
11	Topography of Mine	Undulating small hillocks
12	Explosive Requirement	119 kg/day
13	Diesel/Fuel requirement	110 litre/day

Production Details

Year	Production of stone		Intercalated	Overburden	Total	Bench
	in cum	in ton	waste in cum	in cum	waste in cum	(mRL)
1 st Year	63317	171009	1114	37170	40504	228-222
2 nd Year	64458	174035	3393	0	3393	222
3 rd Year	65579	177062	3452	3550	5812	222-216
4 th Year	66700	180089	3511	0	3511	216
5 th Year	68381	184629	3599	0	3599	216
Total	328452	886824	17289	39530	56819	-

Land Use

Land Utilization	Existing Land use (Ha.)	At the end of plan period (Ha)	At Conceptual period (Ha)
Excavation	0.0	1.671 (Entire area shall be left as water reservoir for rain water harvesting)	2.254 (Entire area shall be left as water reservoir for rain water harvesting)
Waste dump	0.0	0.538	0.0
Road	0.0	0.003	0.0
Infrastructure (crusher)	0.0	0.0	0.0
Safety zone (plantation)	0.0	0.601	0.601
Total	0.0	2.813	2.855
Unused area	2.855	0.042	0.0
Total Applied Area	2.855		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.601ha	1503
2	Along Approach Road	:	500m	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	Nil	2,00,000
2	Baseline Monitoring		
	i) Air		20,000
	ii) Water		15,000
	iii) Soil		8,000
	iv) Noise		7,000
3	Plantation	13,01,500	1,00,000
4	Construction and maintenance of haul road	2,50,000	1,50,000
	TOTAL	15,51,500	5,00,000

Note: *2603 plants * 500 Rs (for each plants including hedges and fences) = Rs. 13,01,500/-

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

300* 300 = 90000/- = 1,50,000/-

*5 lakh per kilometer (500000 * 0.50 km haul road =2,50,000/-)

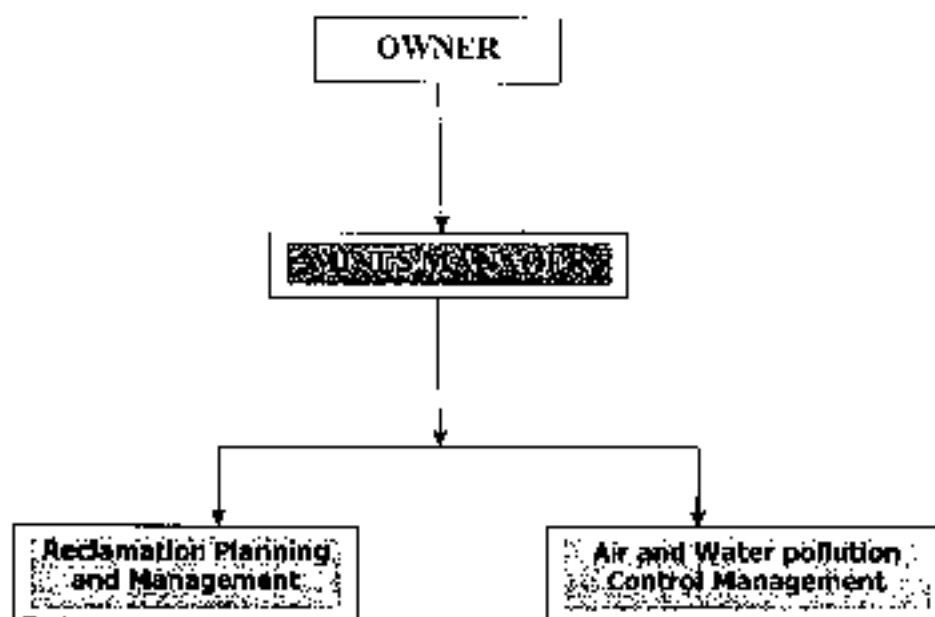
Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000
2	Soil	2 Stations	6 Monthly	8000
3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

It has been calculated that total 56219 cum waste, 17225 cum intercalated waste & 39590 cum overburden waste during the plan period. 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 653 shall be generate from this mine. It has been calculated that total 56817 cum in situ waste shall be generated during this plan period. The 50% of wastegenerated during the plan period i.e. 28409 cum (Initial) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 28409cum

In situ 35510.63 cum loose & 30184.03 cum compact waste shall be temporary dumped on southern part of applied lease area and it will cover about 0.538ha 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 4 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 not 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	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

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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'

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 free, 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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- Dust generation during drilling
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- 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

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- 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

- 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 Bid, 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.

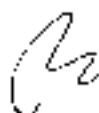
- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
-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

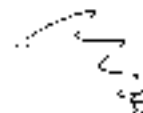
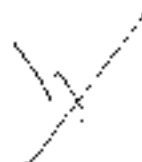
- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are 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 gation 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 Pochari Stone Deposit of M/s Stately Infrastructure (Partners : Shri Birendra Kumar & Shri Nishant Kumar), Village : Pochari, Anchal : Baghmara, Distt. : Dhanbad, Jharkhand (2.85 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

1. In compliance of OM no. F.No. IA3-22/3/2024-IA III (F-7411/94) 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 Pad Mo Ke Wagon" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.mca.gov.in>). 10% of the total green belt proposed shall be allocated under this clause.



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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 be 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. Amarpur Bedo Stone Deposit of M/s R.C.M Construction Pvt. Ltd. (Director : Shri Mahesh Kumar Sah & Others), Village : Amarpur Bedo, Thana : Barhait, Distt. : Sahibganj, Jharkhand (2.83 Ha).

{Proposal no.: SIA/JH/MIN/ 539571 /2025}

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

This is a new project which has been taken for appraisal on 26.06.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 66823 cum/annum or 180422.10 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Amarpur Bedo Stone Deposit
2	Lessee	M/s R.C.M. Construction Pvt. Ltd. Director: Sr. Mahesh Kumar Sah & Others S/o Late Gangoprasad Sah At-Dharmapur, P.O.-Barharwa, P.S. Barharwa, Dist. Sahibganj, Jharkhand
3	Lease Address	Village – Amarpur Bedo, Thana- Barharwa, District – Sahibganj, State- Jharkhand
4	Lease Area	2.83ha. Acres- 7.00 Acres
5	Type of Land	Non-Forest (Barayati Land)
6	Project Cost	Rs. 60.0 Lakhs
7	EMP Budget	Capital: Rs. 12.87 Lakhs Recurring: 5.0 Lakhs / year
8	New or Expansion	New
9	Mineable Reserves	667232.50cum 1801527.76Tonnes
10	Mine Life	10 year
11	Man power	34
12	Water Requirement	8.34 m ³ / 10.00 KLD (Drinking: 0.34KLD, Dust Suppression: 2.75 KLD, Plantation: 4.25 KLD)
13	Water Source	Water will be taken from nearby village
14	DG Set / power	500 CVA
15	Crusher	No Crusher
16	Nearest Water Body	Gumari River, Approx. 4.87 km in East direction of mine site.
17	Nearest Habitation	Amarpur Bedo, Approx. 6.56 km towards S direction
18	Nearest Railway Station	Barharwa junction Railway station, approx. 12.51 km towards E direction.
19	Nearest Airport	Deoghar Airport, approx. 105.24 km towards WSW direction
20	Nearest Forest	PF, Approx. 4.0 km towards NNW direction of mine site. PF, Approx. 3.90 km towards NW direction of mine site. PF, Approx. 4.5 km towards W direction of mine site. Fairly Dense Mixed Jungle, Approx. 4.4 km towards SW direction of mine site.
21	Road & Highways	NH – 133A, Approx. 9.54 km towards E direction.
22	Approach Road	Approx. 350 meter

CO-ORDINATES

1	Latitude	From 24°50' 31.90" N To 24°50' 41.15" N
2	Longitude	From 87°58' 57.78" E To 87°59' 06.73" E

LAND DETAILS

Plot no.
44 (P), 45 (P), 46 (P) & 47 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 747/M, dated 14.08.2024.
2	CO	:	The CO, Barhait vide letter no. 302, dated 13.06.2019 has mentioned the plot no. of the project is not recorded as "Jungle-lhari" in R.S. Khatriyan & Register II.
3	DMO Cluster	:	DMO, Sahibganj vide memo no. 1071/M, dated 17.06.2025 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. 1764, dated 08.09.2023 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 letter no. 373, dated 25.02.2021 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 (Page no. 156, Sl. No. 9).
7	Gram Sabha	:	Gram Sabha conducted on 10.06.2019.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 807/M, dated 09.05.2025.
9	Grid Certificate	:	DMO, Sahibganj vide memo no. 1108/M, dated 19.06.2025 certified that said project falls under grid no. 115 and production is within the over all permissible production limit.
10	Qualified Person	:	Shri Tapan Kumar Chakravarty through e-mail dated 24.06.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi-Mechanized Method	
2	Lease Area	:	2.83Ha. or 7.0Acre	Life of Mine -9.9 year or

			says 10 year
3	Waste Generation	:	Total 36888 cum waste shall be generated
4	Stripping ratio	:	1:0.02
5	Working Days	:	300
6	Bench size & No	:	6m x 6m
7	Elevation of Mine	:	245AMSL to 185AMSL
8	Ground Level Elevation	:	185 AMSL
9	Ultimate Working Depth	:	170 AMSL (15m BGL)
10	Water Table	:	162-160AMSL (23-25 m BGL)
11	Topography of Mine	:	Undulating hills
12	Explosive Requirement	:	110 kg/day
12	Diesel/fuel requirement	:	110 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 (mRL)
1st	65284.00	176266.80	(917+5455.00) =4353.00	17301.25	236-218
2nd	66822.00	180422.10	(288+3517.00) =3805.00		218-206
3rd	66257.75	178895.93	(261+3487.25) =3748.25		206-194
4th	66485.75	179511.53	(671+3499.25) =4170.25		194-182
5th	66704.25	180102.48	3510.75		
Total	331554.75	895197.84	19587.25	17301.25	-

Land Use

Land Utilization	Existing Land use (Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry	0.00	1.33 (Entire area shall be left as water reservoir for rain water harvesting)	1.30 (Entire area shall be left as water reservoir for rain water harvesting)
Mine Road	0.00	0.00	0.00

Safety Zone Plantation	0.0	0.53	0.53
Total	0.0	1.86	2.83
Balance	2.83	0.97	0.0
Total lease Area	2.83	2.83	2.83

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.53ha	1325
2	Along Approach Road	350m	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	Nil	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	20,000 15,000 8,000 7,000
3	Plantation	10,87,500	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
TOTAL		12,87,500	5,00,000

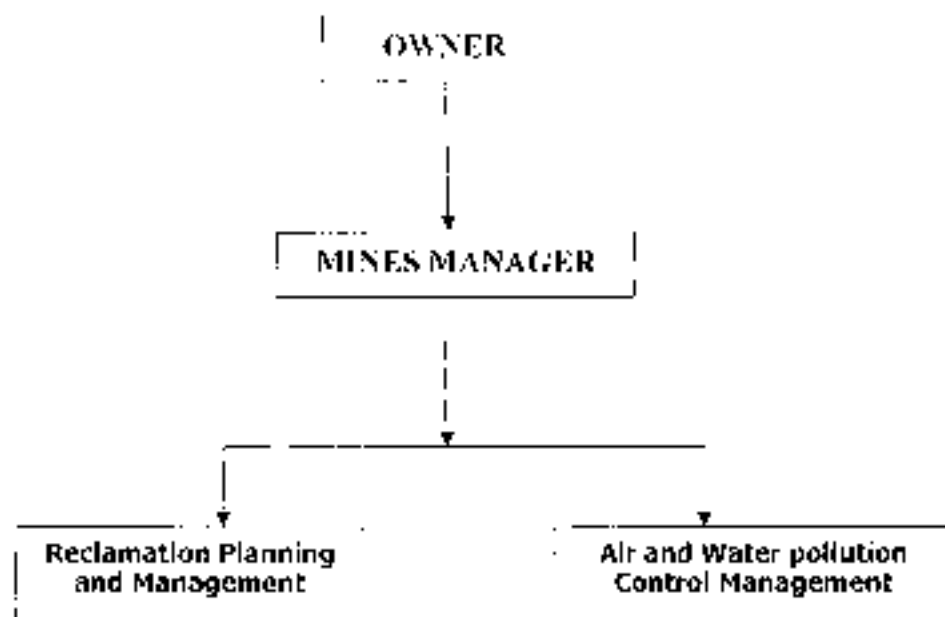
Note: *2175 plants * 500 Rs (for each plants including hedges and fences) = Rs. 10,87,500/-
 Salary of Labor for haul road maintenance 1 labor*300 =300 per day
 300* 300 = 90000/- ~ 1,50,000/-or 2,00,000 /-

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000
2	Soil	2 Stations	6 Monthly	8000
3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

- Pit layout has been shown in development plan & section and there is 19587.25 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 period and ultimate stage total 17,01.25 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. Provlson 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		Description
Severity Level	Severity	
C1	Catastrophic	May commonly cause death or major system loss, there by 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
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The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

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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 let 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 equipments 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 gablon 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 Amarpur Bedo Stone Deposit of M/s R.C.M Construction Pvt. Ltd. (Director : Shri Mahesh Kumar Sah & Others), Village : Amarpur Bedo, Thana : Barhait, Distt. : Sahibganj, Jharkhand (2.83 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I 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 Pedo Mo Ka Naam.' and the details of the same shall be uploaded in the MeriLife Portal (<https://merilife.mca.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 PPE, Audiometry and other required tests. Summary findings of same to be submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPE's 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. Medo Stone Deposit of M/s Balaji Stone Works (Prop. : Shri Mrinal), Village : Medo, Thana : Jirwabari, Distt. : Sahibganj, Jharkhand (2.45 Ha).

(Proposal no.: SIA/JH/MIN/ 541527 /2025)

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

This is a new project which has been taken for appraisal on 26.06.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 60038 cum/annum or 180115 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Medo Stone Deposit
2	Lessee:	: M/s Balaji Stone Works Proprietor - Sri Mrinal AT - College Road, PO - Thana - Sahibganj, District - Sahibganj, State - Jharkhand
3	Lease Address	: Mouza - Medo, Thana - Jirwabari, District - Sahibganj, State - Jharkhand
4	Lease Area	: 2.45ha. Acres- 6.05Acres
5	Type of Land	: Non-Forest (Raiyati Land)
6	Project Cost	: Rs. 80.0 Lakhs
7	EMP Budget	: Capital: Rs. 14.375 Lakhs Recurring: 5.0 Lakhs / year
8	New or Expansion	: New
9	Mineable Reserves	: 599860cum 1799581Tonnes
10	Mine Life	: 10 years
11	Man power	: 46
12	Water Requirement	: 10.76 ~ 11.00 KLD (Drinking: 0.46KLD, Dust Suppression: 5.55KLD, Plantation: 4.75 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. 7.85 km towards NE direction of mine site
17	Nearest Habitation	: Kodepara, approx. 0.60 km towards SE direction.
18	Nearest Railway Station	: Sahibganj Railway station, approx. 6.30 km towards NE direction
19	Nearest Airport	: Deoghar Airport, approx. 123.40 km towards SW direction.
20	Nearest Forest	: Protected Forest, Approx. 0.262 km towards NW direction of mine site. Fairly dense mixed jungle, approx 2.80 km, towards East direction.

21	Road & Highways	NH - 33, Approx. 5.40 km towards North direction. SH-18, Approx. 7.90km towards East direction.
22	Approach Road	Approx 500 meter

CO-ORDINATES

1	Latitude	From 25°17'00.835"N	To 25°12'07.921"N
2	Longitude	From 87°35'16.938"E	To 87°35'24.673"E

LAND DETAILS

I.B. No.	Plot no.
14	9 (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. 86//M, dated 15.05.2025.
2	CO	The CO, Mandra vide memo no. 29/Ra, dated 20.01.2025 has mentioned the plot no. of the project is not recorded as Jungle Jharin in R S Khatyan & Register II.
3	DMO Cluster	DMO, Sahibganj vide memo no. 816/M, dated 16.05.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wildlife	DFO - cum In-charge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 345, dated 11.02.2025 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 letter no. 311, dated 06.02.2025 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. 87//M, dated 16.05.2025 that this project is mentioned in approved DSR of Sahibganj, District as a potential area (Page no. 135)
7	Gram Sabha	Gram Sabha conducted on 18.01.2025
8	Mine Plan Approval	Approved by District Mining Officer, Sahibganj vide Letter No. 959/M, dated 02.06.2025

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9	Grid Certificate	:	DMO, Sahibganj vide memo no. 942/M, dated 02.06.2025 certified that said project falls under grid no. 14 and production is within the over all permissible production limit.
10	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	Lease Area	:	2.45Ha. or 6.05 Acre	Life of Mine –10years
3	Waste Generation	:	Total 11530 cum of Gritty soil & 15793 cum of Intercalated waste shall be generated during the plan period.	
4	Stripping Ratio	:	1: 0.03	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Elevation of Mine	:	274AMSL to 256AMSL	
8	Ground Level Elevation	:	256AMSL	
9	Ultimate Working Depth	:	226AMSL (30m BGL)	
10	Water Table	:	218-213 AMSL (38-43m BGL)	
11	Topography of Mine	:	The area represents a part of hillock with rock mass of Basalt	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	110 litre/day	

Production Details

Year	Removal of Gritty Soil		Intercalated waste in Cum	Production of Stone		Bench AMSL
	In cum	in tons		in cum	In tons	
1 st Year	2874	4312	3156	59952	179858	274-256
2 nd Year	2976	4464	3159	60021	180063	262-250
3 rd Year	4300	6450	3160	60038	180115	274-256
4 th Year	1380	2070	3158	60010	180029	262-250
5 th Year	000	000	3160	60038	180115	256-244

Total	11530	17296	15793	300059	900180

Land Use

Land Utilization	Existing Land use (Ha.)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry		1.94	1.94 (Entire area shall be left as water reservoir) (including backfill 0.65 ha.)
Safety Zone		0.51 (Plantation)	0.51 (Plantation)
Road	0.03		
Total Used Area	0.03	2.45	2.45
Balanced Unused Area	7.42		
Total Lease Area		2.45	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.51ha	1275
2	Along Approach Road	500m	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	--	20,000 15,000 8,000 7,000
3	Plantation	11,87,500	1,00,000
4	Construction and maintenance of haul road	2,50,000	1,50,000
	TOTAL	14,37,500	5,00,000

Note: *2375 plants * 500 Rs (for each plants including hedges and fences) = 11,87,500/-

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

300*300 = 90000/- or 150000/- (Including maintenance)

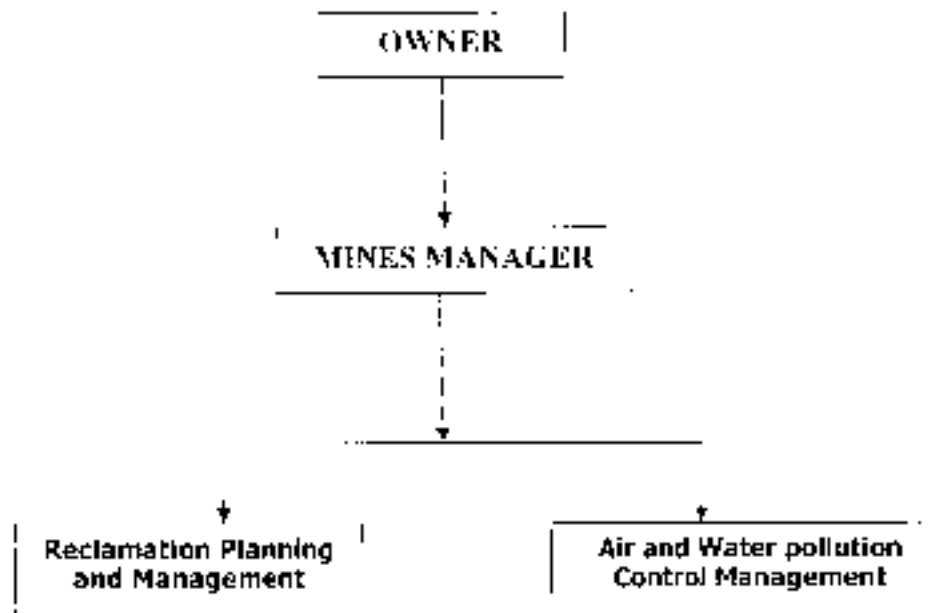
* 5.0 lakh per kilometer (500000 * 0.50 km haul road = 2,50,000/-)

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000
2	Soil	2 Stations	6 Monthly	8000
3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

Total 11530 cum of Gritty soil & 15793 cum of Intercalated waste will be generated during the 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 soil & waste will be temporarily dumped at the south part of the area with suitable precaution like constructing parapet wall, garland drain & in 2nd year gritty soil & Intercalated waste will be removed and this soil & waste will be temporarily dumped at the existing dump yard & 3rd year gritty soil & intercalated waste will be removed and this soil, waste & existing temporary dumped materials will be temporarily dumped within the quarry & 4th year gritty soil & intercalated waste will be removed and this soil, waste & existing temporary dumped materials will be temporarily dumped within the quarry & in 5th year intercalated waste will be removed and this waste & existing temporary dumped materials will be temporarily dumped within the quarry. In conceptual period total removal intercalated waste & plan period temporarily dumped materials together will be backfill within the exhausted quarry.



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.

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- 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, There by 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/Side/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by Fitting by loading material Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident	Remote	Minor	10

	Exposure to Dust		

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 drilling 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:

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- 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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- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
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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
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation
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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:

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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 Medo Stone Deposit of M/s Balaji Stone Works

(Prop. : Shri Mrinal), Village : Medo, Thana : Jirwabari, Distt. : Sahibganj, Jharkhand (2.45 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. In consideration of the comments regarding distance in the certificate issued by the DFO, Sahibganj regarding Man - Animal conflict in the area the PAs have submitted an undertaking that if any mitigation plan is prepared and implemented by DFO, Sahibganj the PAs will contribute their share of the funds, to the extent of their CSR budget on demand by the DFO, Sahibganj.
- II. In compliance of OM no. F.No. IA3 22/3/2024-IA.III (C-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. 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 PLET, Audiometry and other required tests. Summary findings of same to be submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted 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.

12. Bekchuri Stone Deposit of M/s Pavika Stone Works (Prop. : Smt. Mala Sinha), Village : Bekchuri, Thana : Taljhari, Distt. : Sahibganj, Jharkhand (2.93 Ha).

(Proposal no.: SIA/JH/MIN/ 541435 /2025)

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

This is a new project which has been taken for appraisal on 26.06.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 74718 cum/annum or 216681 TPA

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Bekchuri Stone Deposit
2	Lessee:	M/s Pavika Stone Works Proprietor- Smt. Mala Sinha At – L.C. Road, P.O. & Thana – Sahibganj, District - Sahibganj, Jharkhand
3	Lease Address	Mouza – Bekchuri, Thana – Taljhari, District –Sahibganj, State – Jharkhand
4	Lease Area	2.93ha. Acres- 7.25 Acres
5	Type of Land	Non-Forest (Rajyati Land)
6	Project Cost	Rs. 90.0 Lakhs
7	EMP Budget	Capital: Rs. 16.375Lakhs Recurring: 5.0 Lakhs / year
8	New or Expansion	New
9	Mineable Reserves	746667cum 2165333Tonnes
10	Mine Life	10 year
11	Man power	41
12	Water Requirement	12.46 ~ 12.50 KLD(Drinking: 0.41KLD, Dust Suppression: 6.50KLD, Plantation: 5.55 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. 9.10 km towards ENE direction of mine site.
17	Nearest Habitation	Bekchuri
18	Nearest Railway Station	Taljhari Railway station, approx. 4.65 km towards NE direction.
19	Nearest Airport	Deoghar Airport, approx. 119.60 km towards SW direction.
20	Nearest Forest	Protected Forest, Approx. 0.60 km towards SE direction of mine site. Protected Forest, Approx. 2.10 km towards North direction of mine site.

		site.
		Protected Forest. Approx. 3.30 km towards ENE direction of mine site
		Protected Forest. Approx. 1.55 km towards SE direction of mine site
		Protected Forest. Approx. 3.55 km towards SSE direction of mine site.
21	Road & Highways	SH - 18, Approx. 9.25 km towards NW direction NH - 33, Approx. 7.35 km towards LNE direction
22	Approach Road	Approx 500 meter

CO-ORDINATES

1	Latitude	From 25°3'12.543" N	To 25°3'19.445" N
2	Longitude	From 87°42'16.405" E	To 87°42'27.525" E

LAND DETAILS

I.B. No.	Plot no.
1, 2, 5 & 7	20, 21, 18 (P), 22 (P) & 8 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	The Letter of Intent (LOI) has been issued by District Mining Officer, Sahibganj vide letter no. 1374/M, dated 13.12.2024
2	CO	The CO, Taljhari vide letter no. 399/Ba, dated 05.08.2021 has mentioned the plot no. of the project is not recorded as "Jungle Jhar" in R.S. Khatyan & Register II
3	DMO Cluster	DMO, Sahibganj vide memo no. 293/M, dated 19.02.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site
4	DFO Wild Life	DFO - cum- In-charge Wild life Sanctuary, Udhwa (Sahibganj) vide letter no. 1301, dated 23.06.2024 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. 2496, dated 18.12.2021 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. 1164/M, dated 21.06.2025 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 07.07.2021.
8	Mine Plan Approval	: Approved by District Mining Officer, Sahibganj vide Letter No. 722/M, dated 26.04.2025.
9	Grid Certificate	: DMO, Sahibganj vide memo no. 1072/M, dated 17.06.2025 certified that said project falls under grid no. 57 and Hon'ble NGT does not decided the production limit of that Grid.
10	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	Lease Area	: 2.93Ha. Or 7.25Acre ; Life of Mine –10years
3	Waste Generation	: Total 14175 cum of Gritty soil & 19659 cum of Intercalated waste will be generated during the plan period.
4	Stripping Ratio	: 1: 0.03
5	Working Days	: 300
6	Bench: size & No	: 6m x 6m
7	Elevation of Mine	: 194AMSL to 156AMSL
8	Ground Level Elevation	: 156AMSL
9	Ultimate Working Depth	: 129 AMSL (27m BGL)
10	Water Table	: 121-116AMSL (35-40 m BGL)
11	Topography of Mine	: Area represents a part of hillock with rock mass of Basalt
12	Explosive Requirement	: 110 kg/day
13	Diesel/Fuel requirement	: 110 litre/day

Production Details

Year	Removal of Gritty Soil		Intercalated waste	Production of Stone		Bench (AMSL)
	In cum	In tons	in Cum	in cum	In tons	
1 st Year	4210	6316	3929	74656	216502	189-159
2 nd Year	4375	6563	3932	74699	216626	165-159

3 rd Year	2340	3510	3933	74712	216681	169-153
4 th Year	3250	4875	3932	74699	216626	169-153
5 th Year	000	000	3933	74712	216681	159-153
Total	14175	21264	19659	373490	1083116	-

Land Use

Land Utilization	Existing Land use (Ha.)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry		2.26	2.26 (Entire area shall be left as water reservoir) (including backfill 0.52 ha)
Safety Zone (Plantation)		0.67 (Plantation)	0.67 (Plantation)
Road	0.04		
Total	0.04	2.93	2.93
Unused Area	2.80		
Total Lease Area		2.93	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.67ha	1575
2	Along Approach Road	500m	1000
	No. of plants distributed with		100
3	consultation local authorities /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	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	20,000 15,000 8,000 7,000
3	Plantation	13,87,500	1,00,000
4	Construction and maintenance of haul road	2,50,000	1,50,000
TOTAL		16,37,500	5,00,000

*Note: *2775 plants * 500 Rs (for each plants including hedges and fences) = 13,87,500 /-*

*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 * 0.50 km haul road = 2,50,000/-)*

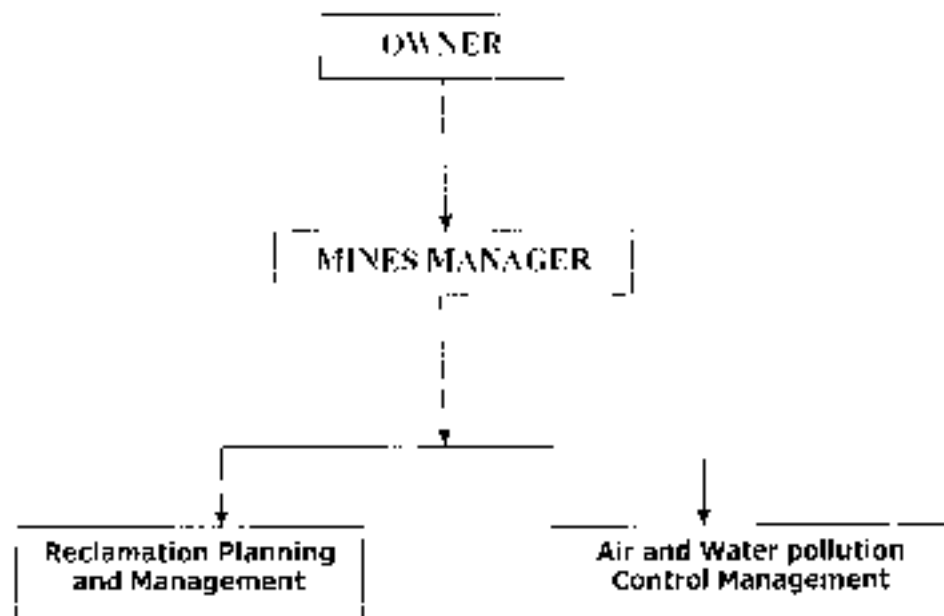
Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000
2	Soil	2 Stations	6 Monthly	8000
3	Surface Water	1 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

Total 14175 cum of Gritty soil & 19659 cum of Intercalated waste will be generated during the 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 at the middle part of the area with suitable precaution like constructing parapet wall, garland drain & in 3rd year gritty soil & intercalated waste will be removed and

this soil, waste & existing temporarily dumped materials will be temporarily dumped within the quarry & in 4th year gritty soil & intercalated waste will be removed and this soil, waste & existing temporarily dumped materials will be temporarily dumped within the quarry & in 5th year intercalated waste will be removed and this waste & existing temporary dumped materials will be temporarily dumped within the quarry. In conceptual period total removal intercalated waste & post period existing temporarily dumped materials will be backfill within the exhausted quarry.



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

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- 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, There by 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 ejecting 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 drilling 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

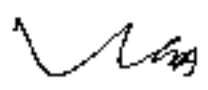
Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper 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 equipments are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation

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

Undertaking submitted affirming:

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

Based on the 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 Deposit of M/s Pavika Stone Works (Prop. : Smt. Mala Sinha), Village : Bekchuri, 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 – I along with following specific conditions :

- I. In compliance of OM no. E.No. 143-22/3/2024-A 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 Ek Kadam" and the details of the same shall be uploaded in the MeriLC Portal (<https://merilc.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 moisture 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 PFT, Audiometry and other required tests. Summary findings of same to be 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. Chuwe Stone Mine of M/s Bajrang Stone (Prop. : Shri Alok Ranjan), Village : Chuwe, Thana : Mirjachowki, Distt. : Sahibganj, Jharkhand (2.12 Ha).

(Proposal no.: SIA/JH/MIN/ 541989 /2025)

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

This is an expansion project which has been taken for appraisal on 26.06.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 94446 cum/year or 255004 TPA.

Earlier DEIAA EC has been reappraised by SEIAA Jharkhand vide letter no. EC/SEIAA/2024-25/3525/2024/635 dated 20.03.2025 on the same capacity mentioned in DEIAA EC i.e. 50681.83 cum/annum or 136840.94 TPA. Although mining scheme has been approved for the 94446 cum/year or 255004 TPA at the reappraisal for EC.

Now, the proposal has been applied for the Environmental Clearance (Expansion, Category B2) under production capacity of 94446 cum/year or 255004 TPA within same mining lease area on the same mining scheme approved on 13.09.2024 via letter no. 895

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Chuwe Stone Mine
2	Lessee:	: M/s Bajrang Stone Proprietor- Sri Alok Ranjan
3	Lease Address	: Mouza – Chuwe, Thana –Mirjachowki, District – Sahibganj, State- Jharkhand.
4	Lease Area	: 2.12 ha Acres- 5.25 Acres
5	Type of Land	: Non-Forest (Raiyat Land)
6	Project Cost	: Rs. 1.10 Cr
7	EMP Budget	: Capital: Rs. 5.50 Lakhs Recurring: 5.0 Lakhs / year
8	New or Expansion	: Expansion
9	Mineable Reserves	: 831532.88 tons 307975.14cum
10	Mine Life	: Up to the lease period i.e. 18.01.2018 to 17.01.2028.
11	Man power	: 18
12	Water Requirement	: 5.68~6.00 KLD (Drinking: 0.18 KLD, Dust Suppression: 4.10 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	: Ganga River, Approx. 10.25 km towards East direction of mine site.
17	Nearest Habitation	: Chuwe, Approx. 0.56km.
18	Nearest Railway	: Karam tola Railway station, approx. 1.18 km towards NE direction

Station	
19	Nearest Air Port : Deoghar Airport, Jharkhand approx 123.04 km towards SW direction.
20	Nearest Forest : Protected Forest, Approx. 3.2 km towards WSW direction Protected Forest, Approx. 0.5 km towards North direction. Protected Forest, Approx. 4.5 km towards SE direction.
21	Road & Highways : N.H 33, Approx. 1.34 km in NE direction
22	Approach Road : Approx 300 meter

CO-ORDINATES

1	Latitude	From 25°14'48.55" N	To 25°14'54.04" N
2	Longitude	From 87°32'34.47" E	To 87°32'41.81" E

LAND DETAILS

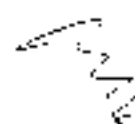
Khata no.	Plot no.
17	71
12	72 & 28 (PI)
02	73

STATUTORY CLEARANCES

1	LOI/Lease deed	Lease deed, 18.01.2018 to 17.01.2028
2	CO	The CO, Mandro vide memo no. 458/Pa, dated 06.10.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhar" in R.S. Khatyan & Register-1
3	DMD Cluster	DMD, Sahibganj vide memo no. 1746/M, dated 16.11.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site
4	DFO Wild Life	DFO - cum In-charge Wildlife Sanctuary, Lohwa (Sahibganj) vide letter no. 2197, dated 30.12.2020 certified that the proposed project site is outside Eco Sensitive Zone of Lohwa Bird Sanctuary.
5	DFO Terrestrial	Divisional Forest Officer, Sahibganj Forest Division vide memo no. 1761, dated 02.12.2016 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 Sahibganj District (Page no. 128 Sl. No. 05).









7	Gram Sabha	:	Gram Sabha conducted on 15.03.2012.
8	Scheme / Mine Plan Approval	:	Revised Mining Plan / Scheme approved by DMO, Sahibganj vide letter no. 895/M, dated 13.09.2024.
9	Grid Certificate	:	DMO, Sahibganj vide memo no. 1109/M, dated 19.06.2025 certified that said project falls under grid no. 02 and production is within the over all permissible production limit.
10	Previous Environmental Clearance (EC)	:	i. Previous EC granted by DEIAA, Sahibganj vide letter no. EC/DEIAA/2016-17/44, dated 27.03.2017. ii. Previous EC granted by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/3525/2024/635, dated 20.03.2025.
11	Compliance report of EC	:	As per vide OM no. J-11013/6/2010-IA.II (Part) Dated 07.09.2017 issued by MoEF&CC, Govt. of India states that the project authorities are to request Regional Office of MoEF&CC, Govt. of India for issuance of certified compliance report. The above OM further states that if the CCR is not issued by the Regional Office, MoEF&CC, Govt. of India within one month from the date request, the project authorities may obtain CCR from JSPCB. The project authorities has requested the Regional Office, MoEF&CC, Govt. of India vide letter dated 28.03.2025 for Issuance of CCR. After expiry of stipulated time period the project authorities have obtained and submitted the compliance report of previous EC issued by Member Secretary, JSPCB, Ranchi vide letter no. 1754, dated 24.06.2025.
12	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2183801/2018/498, dated 11.05.2018.
13	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/RO/DMK/CTO-19211322/2024/159, dated 27.06.2024.
14	Production Report	:	Production report issued by DMO, Sahibganj vide memo no. 1249/M, dated 16.11.2024.
15	Qualified Person	:	Shri Sahadev Singh through letter dated 26.06.2025 affirmed that the mining scheme has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi mechanized mining method
2	Lease Area	:	2.12 hectare or 5.25 Acres Life of Mine – 4 Years
3	Waste Generation	:	74425 Tons

4	Stripping Ratio	1:0.23
5	Working Days	300
6	Bench size & No	6m x 6m
7	Elevation of Mine	87 AMSL to 98 AMSL
8	Ground Level Elevation	87 AMSL
9	Ultimate Working Depth	55 AMSL (32 m bgl)
10	Water Table	35- 40 AMSL (52-57 m bgl)
11	Topography of Mine	The applied area represents gently sloping land.
12	Explosive Requirement	110 kg/day
13	Diesel/Fuel requirement	130 litre/day

Production Details

Year	Production of Stone in Tons	Production of Stone in Cum	Total excavation of waste in cum	Bench Section
1 st	66521.75	24537.50	14925	92-80
2 nd	255004	94446	59500	92-74
3 rd	255004	94446	0	80-68
4 th	255003.63	94445.78	0	68-55
Total	831532.88	307975.28	74425	

Land Use

Pattern of Utilization	Existing Land Use (in Ha)	At the end of modification to the approved scheme of mining period (in Ha)	At ultimate stage (in Ha)
Quarry	0.66	1.06	1.06 (entire area shall be left as water reservoir)
Waste Dump	0.00	0.00	0.00
Main Road	0.06	Comes under excavation	Comes under excavation
Infrastructure	0.00	0.0	0.0

safety zone	0.46 (Plantation)	0.46 (Plantation)	0.46 (Plantation)
Used Area	1.18	-	-
Balance area	0.94	-	-
Total	2.12		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.46ha	1150 (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 1850 saplings were proposed to be planted. Out of which 1150 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		20,000
	ii) Water		15,000
	iii) Soil		8,000
	iv) Noise		7,000

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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	5,00,000

Note: 700 plants * 500 Rs (for each plants including hedges and fences) = 3,50,000 /-

A total of 1850 saplings were proposed to be planted. Out of which 1150 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

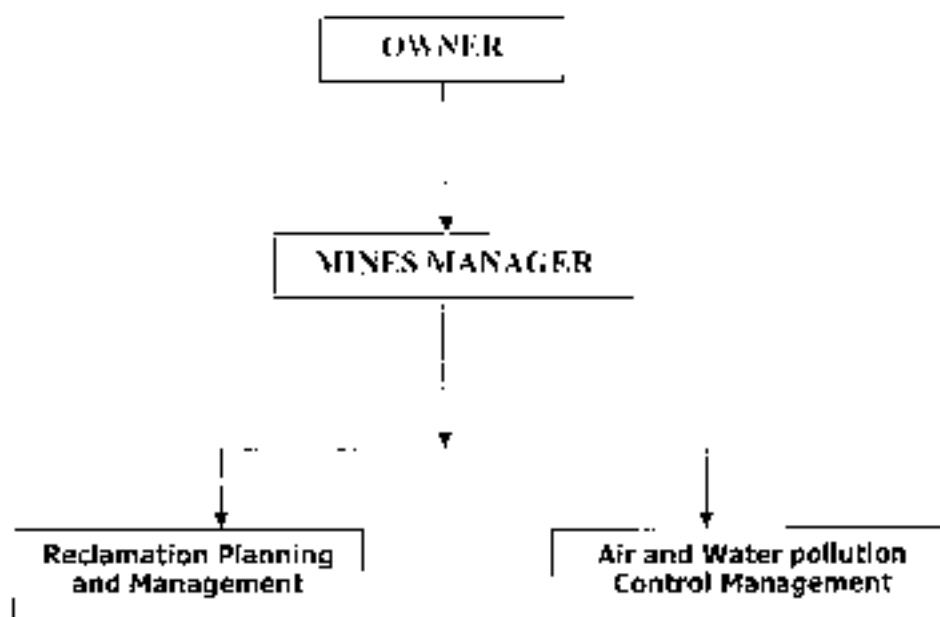
300* 300 = 90000/- or 1,50,000/- (including maintenance)

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000
2	Soil	2 Stations	6 Monthly	8000
3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

Total 74425 cum waste will be generated during plan period. During the scheme period, generation of waste will be gradually used for village 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.

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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 There by 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 × 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

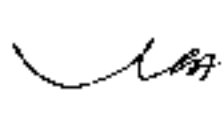
The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

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 slides 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

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- 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

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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, lighters, 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 Chuwe Stone Mine of M/s Bajrang Stone (Prop. : Shri Alok Ranjan), Village : Chuwe, Thana : Mirjachowki, Distt. : Sahibganj, Jharkhand (2.12 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - I along with following specific conditions :

- i. In consideration of the comments regarding distance in the certificate issued by the DFO, Sahibganj regarding Man - Animal conflict in the area the PAs have submitted an undertaking that if any mitigation plan is prepared and implemented by DFO, Sahibganj the PAs will contribute their share of the funds, to the extent of their CSR budget on demand by the DFO, Sahibganj.
- ii. In compliance of OM no. F.No. 143 22/37/2024-IA III (F-241564) 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 Pedu Aduke Badhi" 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. 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 PFTT, Audiometry and other required tests. Summary findings of same to be submitted along with 6 monthly compliance.
- vii. Ensure use of Quality PPEs equivalent not less than RM 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. Balke Stone Deposit of M/s Star India Enterprises (Prop. : Md. Shahjahan Ansari), Village : Balke, Anchal : Taljhari, Distt. : Sahibganj, Jharkhand (2.428 Ha).

(Proposal no.: SIA/JH/MIN/ 541381 /2025)

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

This is a new project which has been taken for appraisal on 26.06.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 87812cum/annum or 237093 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Balke Stone Deposit
2	Lessee:	M/S Star India Enterprises Prop. – Md. Shahjahan Ansari Village- Chhota Pangro, Po- Bara Madansahi, P.S.- Jirwabari, District- Sahibganj, State-Jharkhand
3	Lease Address	Village – Balke, Anchal- Taljhari, District – Sahibganj, State - Jharkhand
4	Lease Area	2.428ha. Acres- 6.00 Acres
5	Type of Land	Non-Forest (Raiyati Land)
6	Project Cost	Rs. 70.0 Lakhs
7	EMP Budget	Capital: Rs. 13.74Lakhs Recurring: 5.0 Lakhs / year
8	New or Expansion	New
9	Mineable Reserves	870393.7cum 2350063 tonnes
10	Mine Life	10year.
11	Man power	20

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12	Water Requirement	9.99 ~ 10.0 KLD (Drinking: 0.25KLD, Dust Suppression: 5.295 KLD, Plantation: 4.49 KLD)
13	Water Source	Water will be taken from nearby village
14	UG Set / power	500 KVA
15	Crusher	Yes
16	Nearest Water Body	Ganga River, Approx 9.0 km. in NE direction of mine site.
17	Nearest Habitation	Bekham, approx. 0.57 km towards East direction.
18	Nearest Railway Station	Kalan chak railway station, approx. 3.91 km towards ESE direction
19	Nearest Airport	Deoghar Airport, approx. 110.42 km towards WNW direction
		PH, Approx. 0.96 km. in ESE direction
		PH, Approx. 2.54 km. in SSE direction
20	Nearest Forest	PF, Approx. 1.02 km. in NE direction
		PF, Approx. 2.85 km. in North direction
		PF, Approx. 3.53 km. in ENE direction.
21	Road & Highways	NH-13, Approx. 3.18 km towards ENE direction
22	Approach Road	Approx 500 Meter

CO-ORDINATES

1	Latitude	From 25° 02' 49.405" N To 25° 02' 56.077" N
2	Longitude	From 87° 42' 1.555" E To 87° 42' 8.900" E

LAND DETAILS

Khata No.	Plot no.
05, 06 & 15	71 (P), 82 (P), 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. 409/M, dated 19.03.2025
2	CO	The CO, Sahibganj vide letter no. 541/Ra, dated 20.08.2024 has mentioned the plot no. of the project is not recorded as "Jungle-land" in R.S. Khatriya & Register I
3	DMO Cluster	DMO, Sahibganj vide memo no. 532/M, dated 20.03.2025 certified that 01 Lot (6.01 Acre) exists within 500 meters radius from proposed project site and total area is 12.01 Acre.

4	DFO Wild Life	:	DFO - cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2286, dated 18.09.2024 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. 2287, dated 18.09.2024 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. 648/M, dated 09.04.2025 that this project is mentioned in approved DSR of Sahibganj District as a potential area (Page no. 196).
7	Gram Sabha	:	Gram Sabha conducted on 14.08.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Sahibganj vide Letter No. 716/M, dated 25.04.2025.
9	Grid Certificate	:	DMO, Sahibganj vide memo no. 1004/M, dated 05.06.2025 certified that said project falls under grid no. 56 and production is within the over all permissible production limit.
10	Qualified Person	:	Dr. Amarjeet Kumar Singh through e-mail dated 26.06.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi-Mechanized Method
2	Lease Area	:	2.428 Ha. or 6.00 Acre Life of Mine -10 year.
3	Waste Generation	:	Total 61139 cum intercalated waste shall be generated during the plan period.
4	Stripping Ratio	:	1: 0.06
5	Working Days	:	300
6	Bench: size & No	:	6m x 6m
7	Elevation of Mine	:	218 AMSL to 148AMSL
8	Ground Level Elevation	:	148 AMSL
9	Ultimate Working Depth	:	106 AMSL (42m BGL)
10	Water Table	:	90-87AMSL (58-61m BGL)
11	Topography of Mine	:	small hillocks
12	Explosive Requirement	:	110 kg/day
13	Diesel/Fuel requirement	:	110 litre/day

Production Details

Year	Production of stone	Intercalated	Overburden	Total waste	Bench







	in cum	in ton	waste in cum	waste in cum	in cum	mRL
1 st Year	84484	228108	4447	15933	20380	208-178
2 nd Year	85021	229957	4475	16046	20521	178-166
3 rd Year	85558	231005	4502	6554	11057	160-154
4 th Year	86631	233905	4560	0	4560	154-148
5 th Year	87812	237093	4622	0	4622	148-135
Total	429506	1159669	22607	38533	61140	-

LandUse

Land Utilization	Existing Land use (Ha.)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry	Nil	1.257	1.958 to 2.39ha area shall be backfilled & after backfilling entire area shall be left as water reservoir.
Waste dump	Nil	0.148	Comes under Mining
Road	Nil	0.002	0.00
Crusher	Nil	0.230	0.00
Safety zone plantation	Nil	0.450	0.459
Total	0.00	2.396	2.428
Unused area	2.478	0.032	0.0
Total Applied Area	2.428		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.450ha	1148
2	Along Approach Road	500m	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	Nil	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	20,000 15,000 8,000 7,000
3	Plantation	11,24,000	1,00,000
4	Construction and maintenance of haul road	2,50,000	1,50,000
TOTAL		13,74,000	5,00,000

*Note: *2248 plants * 500 Rs (for each plants including hedges and fences) = Rs. 11,24,000/-*

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

300 300 = 90000/- ~ 1,50,000/-*

** 5 lakh per kilometer 500000 * 0.50 km haul road =2,50,000/-*

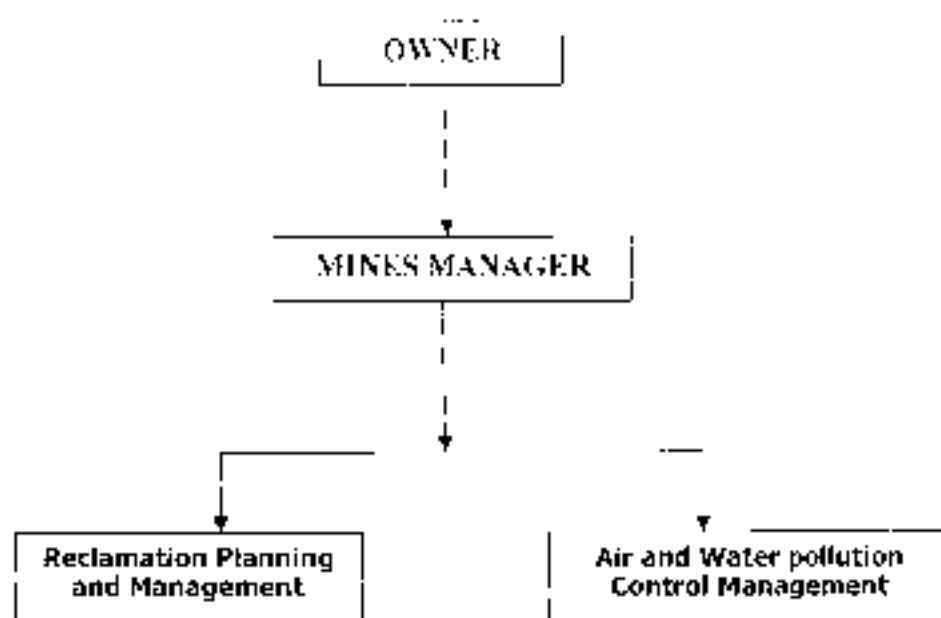
Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000
2	Soil	2 Stations	6 Monthly	8000
3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

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 51139 cum in-situ waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 30559 cum (in situ) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 30559 cum in situ 38213.66 cum loose & 32479.91cum compact waste shall be temporary dumped on the eastern part of the applied lease area and it will cover about 0.448ha 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

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- 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, There by 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

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		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 during the hole and the operation of the drilling itself.

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

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

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

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

Few conditions are listed below:

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

The usual method of transporting minerals from the working face is by trucks /oppers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of minerals 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 Baido Stone Deposit of M/s Star India Enterprises (Prop. : Md. Shahjahan Ansari), Village : Baido, Anchal : Taljhari, Distt. : Sahibganj, Jharkhand (2.428 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - I along with following specific conditions :

- I. In compliance of OM no. E.No. IA2 22/3/2024 (A 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 Pad Hai Ek Aashu' and the details of the same shall be uploaded in the M-EnvFE Portal (<https://menvfe.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 maximum 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 PFT, Audiometry and other required tests. Summary findings of same to be submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 2M 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. Breach of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

**15. Irgu Stone Deposit of M/s Jai Mahakal Construction (Partner : Shri Amit Raj & Others),
Village : Irgu, P.S. : Panki, Distt. : Palamau, Jharkhand (1.50 Ha).**

[Proposal no.: SIA/JH/MIN/ 540453 /2025]

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

This is a new project which has been taken for appraisal on 26.06.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 19123 cum/annum or 53545 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: IrguStone Deposit
2	Lessee:	: M/s Jai Mahakal Construction, Partner – 1. Sri Amit Raj 2. Sri Prem Shankar Kumar Singh 3. Sri Rajnish Kumar Singh 4. Sri Suraj Kumar 5. Sri Shiv Kumar Tiwari
3	Lease Address	: Mouza- Irgu, Thana – Panki, District- Palamu, State – Jharkhand
4	Lease Area	: 1.50 ha. Acres- 3.70 Acres
5	Type of Land	: Non-Forest (Raiyati Land)
6	Project Cost	: Rs. 60.0 Lakhs
7	EMP Budget	: Capital: Rs. 13.85Lakhs Recurring: 5.0 Lakhs / year
8	New or Expansion	: New
9	Mineable Reserves	: 95588cum 267646Tonnes
10	Mine Life	: 5 years (4 years 11 months)
11	Man power	: 27
12	Water Requirement	: 10.07 ~ 10.10 KLD(Drinking: 0.27KLD, Dust Suppression: 5.06KLD, Plantation: 4.74 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	: Mailanadi, Approx. 3.5 km. in SSW direction. Churranadi, Approx. 3.8 km. in SSE direction.
17	Nearest Habitation	: Jamua, Approx. 5.87 km towards SW direction.
18	Nearest Railway Station	: Kumandih Railway station, approx 20.44 km towards SSW direction.
19	Nearest Airport	: Deoghar Airport, approx. 241.05 km towards ENE direction.

20	Nearest Forest	Fairly dense mixed jungle. Approx. 3.5 km.in West direction. Fairly dense mixed jungle. Approx. 2.0 km.in North direction. Fairly dense mixed jungle. Approx. 0.95 km. in East direction
21	Road & Highways	NH - 38, Approx. 9.98 km towards SW direction.
22	Approach Road	Approx 260 meter

CO-ORDINATES

Latitude	From 23°53'45.5445" N	To 23°56'51.46616" N
Longitude	From 84°23'39.4399"E	To 84°23'47.3415" E

LAND DETAILS

Khata No.	Plot No.
8, 9, 10, 25, 5, 6, 39	494, 495, 517(P), 522(P), 521, 516(P), 515(P)

STATUTORY CLEARANCES

1	LOI / Lease deed	The Letter of Intent (LOI) has been issued by District Mining Officer, Palamau, Medininagar vide letter no. 1576/M, dated 18.07.2023.
2	CO	The CO, Parki, Palamau vide letter no. 389, dated 27.06.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhar" in B.S. Khatriyan
3	DMO Cluster	BMO, Palamau, Medininagar vide memo no. 1040/M, dated 07.05.2025 certified that 01 Lot (2.62 Acre) exists within 500 m radius from proposed project site and total area is 6.32 Acre.
4	DFC Wild Life	Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 991, dated 08.12.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve.
5	DFC Territorial	Divisional Forest Officer, Medininagar Forest Division vide letter no. 2147, dated 07.07.2023 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 Palamau District (Sl. no. 09, Page no. 103).
7	Gram Sabha	:	Gram Sabha conducted on 24.06.2023.
8	Mine Plan Approval	:	Approved by Assistant Director, Geology District Geological Officer, Palamau, Jharkhand vide Memo No. 15, dated 16.01.2025.
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	Lease Area	:	1.50 Ha. or 3.70 Acre
			Life of Mine -5 years (4 years 11 months)
3	Waste Generation	:	Total 15930 cum of gritty soil & 5030 cum of intercalated waste shall be generated during the plan period.
4	Stripping Ratio	:	1: 0.07
5	Working Days	:	300
6	Bench: size & No	:	6m x 6m
7	Elevation of Mine	:	378AMSL to 374AMSL
8	Ground Level Elevation	:	374AMSL
9	Ultimate Working Depth	:	354AMSL (20m BGL)
10	Water Table	:	347-338AMSL (27-36 m BGL)
11	Topography of Mine	:	Gently sloping land
12	Explosive Requirement	:	90 kg/day
13	Diesel/Fuel requirement	:	90litre/day

Production Details

Year	Removal of gritty soil		Intercalated waste In cum	Production of stone		Bench (AMSL)
	In cum	In ton		In cum	In ton	
1 st Year	5454	8181	1004	19084	53434	378-372
2 nd Year	7954	11931	1006	19112	53513	378-372
3 rd Year	2522	3783	1007	19123	53545	378-366
4 th Year	000	000	1006	19112	53513	372-366
5 th Year	000	000	1007	19123	53545	366-354

Total	15930	23895	5030	95554	267550	

Land Use

Land Utilization	Existing Land use (Ha.)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry	Nil	0.73 (including backfilling 0.30 ha)	0.73 (0.39 ha area will backfilled and after backfilling entire area will be converted in water reservoir)
Safety Barrier	Nil	0.70 (Plantation)	0.70 (Plantation)
Road	0.06	Nil	Nil
Total Area In Used	0.06	1.48	1.48
Non Mining Area	Nil	0.02	0.02
Balance Area Unused	1.44	Nil	Nil
Total Applied Area	1.50	1.50	1.50

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.73ha	1750
2	Along Approach Road	260m	520
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 leave 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 PCCE, 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		20,000
	ii) Water		15,000
	iii) Soil		8,000
	iv) Noise		7,000
3	Plantation	11,85,000	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
TOTAL		13,85,000	5,00,000

*Note: *2370 plants * 500 Rs (for each plants including hedges and fences) = Rs. 11,85,000/-*

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

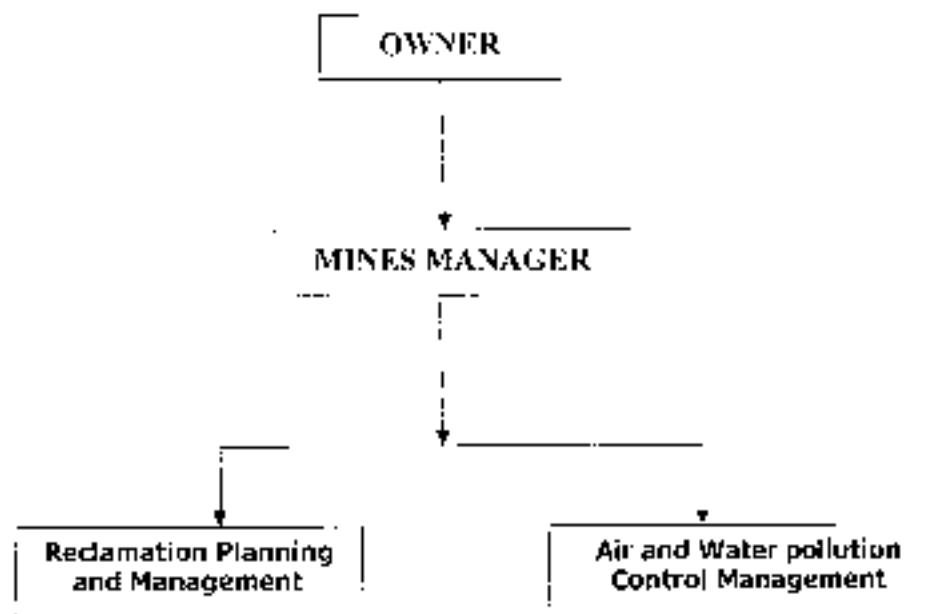
300 300 = 90000/- ~ 1,50,000/- (including maintenance)*

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000
2	Soil	2 Stations	6 Monthly	8000
3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

Total 15930 cum of gritty soil & 5030 cum of intercalated waste shall be generated during the 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 temporarily dumped at the south part of the area with suitable precaution like parapet wall, garland drain & in 2nd & 3rd year removed gritty soil, intercalated waste & existing temporary dumped material will be temporarily dumped within the quarry & in 4th year removed intercalated waste, existing temporarily dumped materials will be temporarily dumped within the quarry & in 5th year removed intercalated waste & existing temporary dumped materials will be backfill within the exhausted quarry.



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.

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

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1

C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone mining operation

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

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		Exposure to Dust			

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 zone 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 drilling 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 DGM5 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 equipments 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.

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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 Irgu Stone Deposit of M/s Jai Mahakal Construction (Partner : Shri Amit Raj & Others), Village : Irgu, P.S. : Panki, Distt. : Palamau, Jharkhand (1.50 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I 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 PFT, Audiometry and other required tests. Summary findings of same to submitted along with 6 monthly compliance
 - VI. Ensure use of Quality PFLs 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

16. **Baigadih Stone Deposit of M/s Jyoti Construction & Engineering Private Limited (Partner : Shri Surjeet Kumar & Others), Mouza : Baigadih, Thana : Chainpur, Distt. : Palamau, Jharkhand (2.23 Ha).**

(Proposal no.: SIA/JH/MIN/ 541083 /2025)

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

This is a new project which has been taken for appraisal on 20.06.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 60587cum/annum or 169644 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Baigadih Stone Deposit

2	Lessee:	Jyoti Construction and Engineering Private Limited Partners: 1 Sri Surjeet Kumar S/o Ram Badan Singh At Village- Vivekanand Park Lane, Patilputra colony, Boring road, District: Patna, State: Bihar 2). Sri Amit Raj, S/o Sri Lallu Prasad, At Village Kathal Mod, Nagdi, Ranchi 3). Sri Prem Shankar Kumar Singh, S/o Sri Jitendra Prasad Singh, At Village, Post and Police Station Hariharganj, Palamu 4). Sri Rajnish Kumar Singh, S/o Sri Mahendra Singh, At Village Pinjrahi, Post Sakaldeepa, Police Station Pipra, Palamu 5). Sri Suraj Kumar, S/o late Ramchandra Prasad, address- Redma, Medininagar, Palamu 6). Sri Shlv Kumar Tiwari, S/o Sri Sitaram Tiwari, at Village Baralota, GLA College, Medininagar, Palamu.	
3	Lease Address	Mauza – Baigadih, Thana – Chalnpur, District – Palamu, State- Jharkhand.	
4	Lease Area	2.23ha.	Acres- 5.51Acres
5	Type of Land	Non-Forest (Raiyati Land)	
6	Project Cost	Rs. 80.0 Lakhs	
7	EMP Budget	Capital: Rs. 24.95 Lakhs	Recurring: 5.0 Lakhs / year
8	New or Expansion	New	
9	Mineable Reserves	302929 cum	848200tonnes
10	Mine Life	5 year.(4year 11months)	
11	Man power	33	
12	Water Requirement	18.0 KLD (Drinking: 0.33KLD, Dust Suppression: 9.78KLD, Plantation: 7.92 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	North Koel Nadi, Approx. 2.10 km. in ENE direction	
17	Nearest Habitation	Chando, approx.0.65 km towards NEdirection.	
18	Nearest Railway Station	Kechki Railway Station, approx. 2.90 km towards ESE direction.	
19	Nearest Airport	Birsu Munda Airport, Ranchi approx. 139.0 km towards ESE direction	
20	Nearest Forest	Kechki PF, Approx. 2.64 km. in East direction. Protected forest Approx. 0.50 km. in East direction. Protected forest Approx. 1.0 km. in SW direction. Khapia PF Approx. 2.50 km. in South direction.	
21	Road & Highways	NH-39, Approx. 4.75 km. in NE direction	
22	Approach Road	Approx 1030 meter	

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CO-ORDINATES

1	Latitude	:	From 23° 56'05.40186" N	To 23° 56'13.97933" N
2	Longitude	:	From 84° 07' 01.18920" E	To 84° 07' 11.04171" E

LAND DETAILS

Khata no.	Plot no.
25	195 (P) & 202 (P)

STATUTORY CLEARANCES

1	LOI / Lease doc	:	The Letter of Intent (LOI) has been issued by District Mining Officer, Palamau, Medinipur vide letter no. 1579/M dated 18.07.2023
2	CO	:	The CO, Champur, Palamau vide letter no. 529, dated 24.06.2023 has mentioned the plot no. of the project is not recorded as "Jungle-ghar" in R.S. Khativan.
3	DMO Cluster	:	DMO, Palamau, Medinipur vide memo no. 1047/M dated 07.05.2023 certified that 01 lot (4.46 Acre) exists within 500 m radius from proposed project site and total area is 9.97 Acre.
4	BFO Wild Life	:	Deputy Director, Palamau Tiger Project South Division, Medinipur vide letter no. 990, dated 08.12.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve
5	BFO Territorial	:	Divisional Forest Officer, Medinipur Forest Division vide letter no. 2145, dated 07.07.2023 certified that the distance of reserved / protected forest and is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Palamau District (SI no. 10, Page no. 103)
7	Gram Sabha	:	BDO, Champur, Palamau vide letter no. 615, dated 26.06.2023 informed that Gram Sabha conducted on 26.05.2023.
8	Mine Plan Approval	:	Approved by Assistant Director, Geology District Geological Officer, Palamau, Jharkhand vide Memo No. 16, dated 26.01.2025

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	Lease Area	:	2.23Ha. or 5.51Acre	Life of Mine –5 year (4 years 11 months).
3	Waste Generation	:	Total 21009 cum gritty soil and 15939 cum Intercalated waste will be generated during the plan period.	
4	Stripping Ratio	:	1: 0.04	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Elevation of Mine	:	267AMSL to 264AMSL	
8	Ground Level Elevation	:	264AMSL	
9	Ultimate Working Depth	:	237 AMSL (27m BGL)	
10	Water Table	:	221-212AMSL (43-52 m BGL)	
11	Topography of Mine	:	gently sloping land	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	110 litre/day	

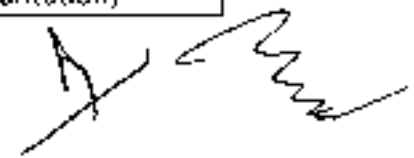
Production Details

Year	Removal of gritty soil		Intercalated waste	Production of stone		Bench AMSL
	in cum	In tonnes	in cum	in cum	in tonnes	
1 st	13490	20235	3187	60562	169574	267-255
2 nd	000	000	3189	60587	169644	261-249
3 rd	7519	11279	3188	60582	169628	267-255
4 th	000	000	3189	60587	169644	261-243
5 th	000	000	3186	60537	169504	249-237
Total	21009	31514	15939	302855	847994	-

Land Use

Category	Present Land Use (in Ha)	At The End Of Plan Period (In Ha.)	At the end of mine (in Ha.)
Quarry	Nil	1.45 (including backfill 0.54 Ha)	1.45 (Including backfill 0.54 Ha) After backfilling entire area will be converted in to water reservoir
Safety Zone	Nil	0.72 (Plantation)	0.72 (Plantation)



Road	0.02	Nil	Nil
Total area in use	0.02	2.17	2.17
Blocked area due to road safety	0.06	0.06	0.06
Balanced Unused Area	2.15	Nil	Nil
Total Lease area	2.23	2.23	2.23

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.72ha	1800
2	Along Approach Road	1130m	2060
	No. of plants distributed with		100
3	consultation local authorities		
	/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 PCCE. 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	Base line Monitoring		25,000
	i) Air		15,000
	ii) Water		8,000
	iii) Soil		7,000
	iv) Noise		
3	Plantation	19,80,000	1,00,000
4	Construction and maintenance of haul road	5,15,000	1,50,000
TOTAL		24,95,000	5,00,000

Note: *3950 plants * 500 Rs (for each plants including hedges and fences) = 19.80 Lakh

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

300* 300 = 90000/- or 1,50,000/- (including maintenance material)

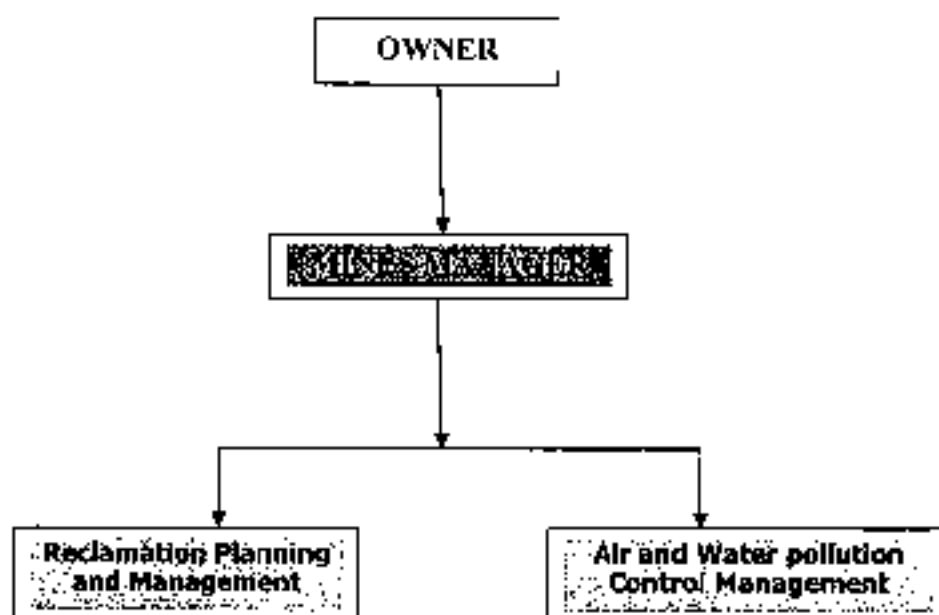
* 5.0 lakh per kilometer (500000 * 1.03 km haul road = 5,15,000 /-)

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000
2	Soil	2 Stations	6 Monthly	8000
3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

Total 21009 cum of gritty soil and 15939 cum of intercalated waste will be generated during the 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 temporarily dumped at the north-east part of the area with suitable precaution like parapet wall, garland drain & in 3rd year removed gritty soil, intercalated waste & existing temporarily dumped material will be temporarily dumped within the quarry & in 4th year removed intercalated waste, existing temporarily dumped materials will be temporarily dumped within the quarry & in 5th year removed intercalated waste & existing temporary dumped materials will be backfill within the exhausted quarry.



Organization Structure

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Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pit and Retainer wall 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 regrounding 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. Provison for water spray by tankers on Nacraha 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 5 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, there by 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/Topping (Bodily Injury)	Frequent	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

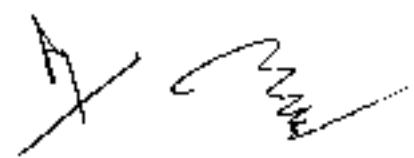
The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- 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.



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- 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 drilling 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.

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- 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 equipments 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 cleared 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/dumping operation.
- 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. Hereafter 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 Baigadlh Stone Deposit of M/s Jyoti Construction & Engineering Private Limited (Partner : Shri Surjeet Kumar & Others), Mouza : Baigadih, Thana : Chainpur, Distt. : Palamau, Jharkhand (2.23 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - I 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 Noom" 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 5 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.

17. Baigadih Stone Deposit of M/s Jyoti Construction & Engineering Private Limited (Partner : Shri Surjeet Kumar & Others), Mouza : Baigadih, Thana : Chainpur, Distt. : Palamau, Jharkhand (1.80 Ha).

(Proposal no.: SIA/JH/MIN/ 541158 /2025)

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

This is a new project which has been taken for appraisal on 26.06.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 56923 cum/annum or 159385TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Baigadih Stone Deposit
		Jyoti Construction and Engineering Private Limited
		Partners: 1) Sri Surjeet Kumar S/o Ram Badan Singh At Village Vivekanand Park Lane, Paliputra colony, Boring road, District: Patna, State: Bihar
2	Lessee	2). Sri Anil Raj. S/o Sri Lallu Prasad, At Village Kathal Mod, Nagdi, Ranchi
		3). Sri Prem Shankar Kumar Singh. S/o Sri Ajendra Prasad Singh. At Village, Post and Police Station Harhargarh, Palamu
		4). Sri Rajnish Kumar Singh S/o Sri Mahendra Singh. At Village Pinjrahi, Post Sakuldecpa, Police Station Pipra, Palamu
		5). Sri Suraj Kumar, S/o late Ramchandra Prasad, address:-

			Redna, Medininagar, Palamu 6). Sri Shiv Kumar Tiwari, S/o Sri Sitaram Tiwari, at Village Baralota, GLA College, Medininagar, Palamu.
3	Lease Address	:	Mauza – Baigadih, Thana – Chainpur, District – Palamu, State- Jharkhand.
4	Lease Area	:	1.80 ha. Acres- 4.46Acres
5	Type of Land	:	Non-Forest (Raiyati Land)
6	Project Cost	:	Rs. 70.0 Lakhs
7	EMP Budget	:	Capital: Rs. 17.55Lakhs Recurring: 5.0 Lakhs / year
8	New or Expansion	:	New
9	Mineable Reserves	:	284467 cum 796507tonnes
10	Mine Life	:	5 years(4Years 11months)
11	Man power	:	30
12	Water Requirement	:	12.60 KLD (Drinking: 0.30KLD, Dust Suppression: 6.82KLD, Plantation: 5.48KLD)
13	Water Source	:	Water will be taken from nearby village
14	DG Set / power	:	200 KVA
15	Crusher	:	No Crusher
16	Nearest Water Body	:	North Koel Nadi, Approx. 2.10 km. in ENE direction
17	Nearest Habitation	:	Chanda, approx.0.65 km towards NEdirection.
18	Nearest Railway Station	:	Kechki Railway Station, approx. 2.90 km towards ESE direction.
19	Nearest Airport	:	Birsa Munda Airport, Ranchi approx. 139.0 km towards ESE direction
20	Nearest Forest	:	Kechki PF, Approx. 2.64 km. in East direction. Protected forest Approx. 0.50 km. in East direction. Protected forest Approx. 1.0 km. in SW direction. Khapia PF Approx. 2.50 km. in South direction.
21	Road & Highways	:	NH-39, Approx. 4.75 km. in NE direction
22	Approach Road	:	Approx 770 meter

CO-ORDINATES

1	Latitude	:	From 23° 56'05.84790" N To 23° 56'11.09357" N
2	Longitude	:	From 84° 07'06.59575" E To 84° 07'14.51201" E

LAND DETAILS

Khata no.	Plot no.
29	204 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	The Letter of intent (LOI) has been issued by District Mining Officer, Palamau, Medininagar vide letter no. 1578/M. dated 18.07.2025.
2	CO	The CO, Champur, Palamau vide letter no. 527, dated 24.06.2023 has mentioned the plot no. of the project is not recorded as "Jungle Jhar" in R.S. Khatiyari.
3	BMO Cluster	BMO, Palamau, Medininagar vide memo no. 1041/M. dated 07.05.2025 certified that 01 Lot (5.51 Acre) exists within 500 m radius from proposed project site and total area is 9.97 Acre.
4	DFO Wild Life	Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 992 dated 08.12.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve.
5	DFO Territorial	Divisional Forest Officer, Medininagar Forest Division vide letter no. 7345, dated 07.07.2023 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 Palamau District ISI no. 11 Page no. 1031.
7	Gram Sabha	DOO, Champur, Palamau vide letter no. 617, dated 25.06.2023 informed that Gram Sabha conducted on 26.06.2023.
8	Mine Plan Approval	Approved by Assistant Director Geology District Geological Officer, Palamau, Jharkhand vide Memo No. 14 dated 16.01.2025.
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	Open cast Mechanized Method
2	Lease Area	180Ha or 4.46Acre Life of Mine -5 year (4 years 11 months).
3	Waste Generation	Total 16419 cum of gritty soil and 14971 cum intercalated waste will be generated during the plan period.
4	Stripping Ratio	1:0.03
5	Working Days	300
6	Bench size & No	6m x 6m

7	Elevation of Mine	:	264AMSL to 260AMSL
8	Ground Level Elevation	:	260 AMSL
9	Ultimate Working Depth	:	228AMSL (32m BGL)
10	Water Table	:	221-212AMSL (39-48 m BGL)
11	Topography of Mine	:	gently sloping land
12	Explosive Requirement	:	90 kg/day
13	Diesel/Fuel requirement	:	90litre/day

Production Details

Year	Removal of gritty soil		Intercalated waste	Production of stone		Bench RL
	in cum	in tonnes	in cum	in cum	in tonnes	
1 st	6144	9216	2992	56852	159185	264-246
2 nd	10275	15413	2997	56923	159385	264-252
3 rd	000	000	2993	56866	159225	258-246
4 th	000	000	2995	56900	159321	252-240
5 th	000	000	2994	56886	159280	246-228
Total	16419	24629	14971	284427	796396	-

Land Use

Category	Present Land Use (In Ha)	At The End Of Plan Period (In Ha.)	At the end of mine (in Ha.)
Quarry	Nil	1.32 (Including backfill 0.46 Ha)	1.32 (including backfill 0.46 Ha) after backfilling entire area will be converted into water reservoir
Safety Zone	Nil	0.44 (Plantation)	0.44 (Plantation)
Road	0.01	Nil	Nil
Total area in use	0.01	1.76	1.76
Blocked area due to road safety	0.04	0.04	0.04
Balanced Unused Area	1.75	Nil	Nil

Total Lease area	1.80	1.80	1.80

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.44ha	1100
2	Along Approach Road	770m	2540
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, 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	--	20,000 15,000 8,000 7,000
3	Plantation	13,70,000	1,00,000
4	Construction and maintenance of haul road	3,85,000	1,50,000
TOTAL		17,55,000	5,00,000

*Note: *2740 plants * 500 Rs (for each plants including hedges and fences) = 13.70 Lakh*

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

*300 * 300 = 90000/- or 1,50,000/- (including maintenance material)*

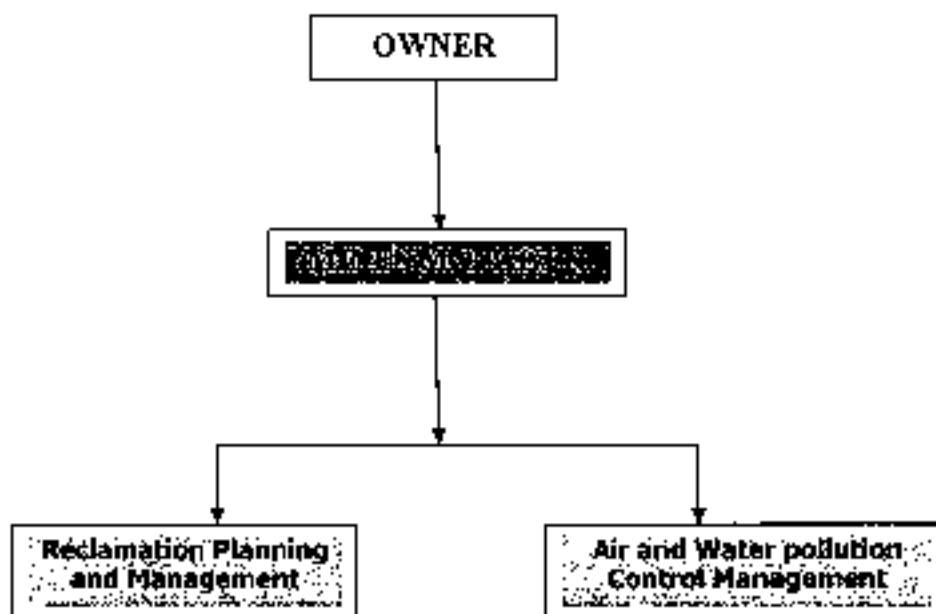
** 5.0 lakh per kilometer (500000 * 0.77 km haul road = 3,85,000 /-)*

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000
2	Soil	2 Stations	6 Monthly	8000
3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

Total 16419 cum of gritty soil and 14971 cum of intercalated waste will be generated during the 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 temporarily dumped at the north-east part of the area with suitable precaution like constructing parapet wall, garland drain & in 2nd year removed gritty soil, intercalated waste & existing temporarily dumped material will be temporarily dumped within the quarry & in 3rd year removed intercalated waste, existing temporarily dumped materials will be temporarily dumped within the quarry & in 4th year removed intercalated waste, existing temporarily dumped materials will be temporarily dumped within the quarry & in 5th year removed intercalated waste & existing temporary dumped materials will be backfill within the exhausted quarry.



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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- 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

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Severity/Impact Intensity

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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 free, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMP 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMP 1961)

Drilling Operations

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

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

Falls from the edge of a bench

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

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

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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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

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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 P.O.C 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 gahion 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 Baigadli Stone Deposit of M/s Jyoti Construction & Engineering Private Limited (Partner : Shri Surjeet Kumar & Others), Mouza : Baigadih, Thana : Chainpur, Distt. : Palamau, Jharkhand (1.80 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I 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 Mo Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nlc.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 be 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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18. **Dhabba Stone Deposit of M/s Simran Stone Mines (Partners : (i) Shri Sanjay Kumar (ii) Shri Mahendra Pandit (iii) Shri Yogendra Mehta). Village : Dhabba, Thana : Devpur, Distt. : Deoghar, Jharkhand (1.41 Ha).**

(Proposal no.: SIA/JH/MIN/ 541628 /2025)

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

This is a new project which has been taken for appraisal on 26.08.2025

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

Application for Environmental Clearance (EC).

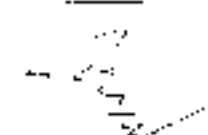
EC Application for: Proposed Capacity- 53915.35 cum/year or 145571.45 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Dhabba Stone Deposit
		Simran Stone Mines
2	Tessee	Partners- (1) Sri Sanjay Kumar, (2) Sri Mahendra Pandit (3) Sri Yogendra Mehta Village- Chamrad P, P.O- Surajpura, Thana-Padma, District Hazaribagh, State- Jharkhand
3	Lease Address	Village – Dhabba, Thana- Devpur, District – Deoghar, State- Jharkhand
4	Lease Area	1.41ha Acres 3.50 Acres
5	Type of Land	Non Forest (Baripati Land)
6	Project Cost	Rs. 60.0 Lakhs
7	CMP Budget	Capital Rs. 15.25 Lakhs Return ng 5.0 Lakhs / year
8	New or Expansion	New
9	Mineable Reserves	269420cum 727434Tonnes
10	Mine Life	5 year
11	Man power	23
12	Water Requirement	11.23 ~ 12.00 KLD(Drinking: 0.23KLD, Dust Suppression: 5.90KLD, Plantation: 5.10 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	Pathra River, Approx. 2.82 km towards SSW direction of mine site
17	Nearest Habitation	Dhaba, Approx. 0.63 km towards NNW direction
18	Nearest Railway Station	Mathurapur Railway station approx. 1.84 km toward NE direction.
19	Nearest Airport	Deoghar Airport, approx. 13.40 km towards NE direction.

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20	Nearest Forest	: Jalve Protected Forest, Approx. 4.00 km towards North direction. PF, Approx. 1.00 km towards SE direction. PF, Approx. 3.50 km towards East direction.
21	Road & Highways	: NH-114 A, Approx. 6.20 km. in South direction.
22	Approach Road	: Approx 500 meter

CO-ORDINATES

1	Latitude	: From 24°20'53.80" N To 24°20'59.34" N
2	Longitude	: From 86°37' 23.02"E To 86°37' 31.07" E

LAND DETAILS

Khata no.	Plot no.
08	315, 306 & 300 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	: The Letter of Intent (LOI) has been issued by District Mining Officer, Deoghar vide letter no. 471/M, dated 25.04.2025.
2	CO	: The CO, Devipur vide letter no. 189/Ra., dated 13.03.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyon & Register II.
3	DMO Cluster	: DMO, Deoghar vide memo no. 678/M, dated 13.06.2025 certified that 01 other mining lease area (4.00 Acre) exists within 500 meters radius from proposed project site and total area is 7.50 Acre.
4	DFO Wild Life	: DFO, Wildlife Division, Hazaribag vide letter no. 169, dated 24.01.2023 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. 358, dated 25.02.2021 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 Deoghar District (Page no. 51, Sl. No. 67).

7	Gram Sabha	BDO, Daspur vide letter no. 390/Vi, dated 10.04.2023 informed that Gram Sabha conducted on 25.03.2023.
8	Mine Plan Approval	Approved by The Assistant Director, Geology, District Geological Office, Dighal vide Memo No. 94, dated 13.06.2025.
9	Qualified Person	Shri Tapan Kumar Chakravarty through e mail dated 24.06.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	Open cast Mechanized Method	
2	Lease Area	1.41 Hs or 3.50 Acres	Life of Mine - 5 year
3	Waste Generation	Total 12854.90 cum of waste will be generated during the plan period.	
4	Stripping Ratio	1:0.23	
5	Working Days	300	
6	Bench size & No	6m x 6m	
7	Elevation of Mine	250AMSL to 249AMSL	
8	Ground Level Elevation	249AMSL	
9	Ultimate Working Depth	220 AMSL (29 m BGL)	
10	Water Table	207-205AMSL (42-44 m BGL)	
11	Topography of Mine	Undulating hillocks	
12	Explosive Requirement	90 kg/day	
13	Diesel/fuel requirement	90litre/day	

Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Waste (cum) in plan period	Bench RL
1st	49927.25	134203.58	3244.75	294-244
2nd	53915.35	145571.45	2837.65	244-248
3rd	53685.10	142249.77	2772.90	228-226
4th	42419.40	114522.38	2590.60	226-244
5th	19418.00	52428.60	1409.00	250-238
Total	218365.10	589585.77	12854.90	-

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Land Use

Land Utilization	Existing Land use (Ha.)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry	-	0.83	0.83 (Entire area shall be left as water reservoir for rain water harvesting)
Safety Zone (Plantation)	-	0.58 (Plantation)	0.58 (Plantation)
Road	0.0	(comes under Quarry)	(comes under Quarry)
Total	0.0	1.41	1.41
Unused Area	1.41	-	-
Total Lease Area	1.41		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.58ha	1450
2	Along Approach Road	500m	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	Nil	2,00,000
2	Baseline Monitoring	--	20,000
	i) Air		15,000
	ii) Water		8,000
	iii) Soil		7,000
	iv) Noise		

3	Plantation	12,75,000	1,00,000
4	Construction and maintenance of haul road	2,50,000	1,50,000
TOTAL		15,25,000	5,00,000

Note: $2550 \text{ plants} \times 500 \text{ Rs (for each plants including hedges and fences)} = 12,75,000/-$

Salary of Labor for haul road maintenance $1 \text{ labor} \times 300 = 300 \text{ per day}$

$300 \times 300 = 90000/-$ or $150000/-$ (including maintenance)

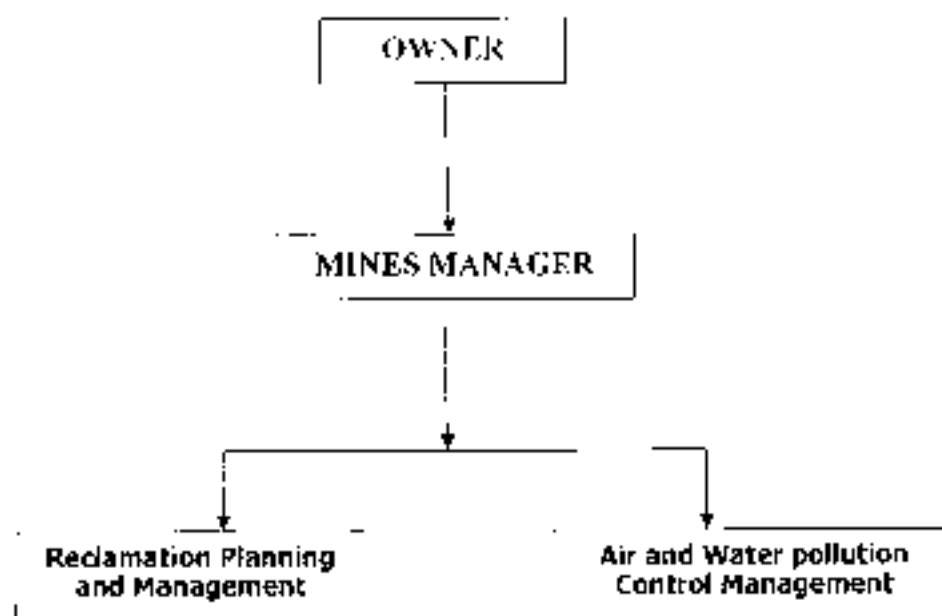
$\times 5.0 \text{ lakh per kilometer (500000} \times 0.50 \text{ km haul road} = 2,50,000/-)$

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000
2	Soil	2 Stations	6 Monthly	8000
3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

Total 12854.90 cum waste 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.



Organization Structure

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Water Quality Management

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

Air Quality Management

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

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

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

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L2	Probable	Very likely to occur. Has occurred within last year
L3	Frequent	Almost certain to occur. Has occurred more than one with in last year

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss. Therefore 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
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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°
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- Loose sides are properly dressed

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- No free, 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)
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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 initiation 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, lighters, 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.

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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.

The bottom of the page features several handwritten signatures and initials. From left to right, there is a signature that appears to be 'Uday', followed by the letter 'A'. In the center, there is a circled number '320'. To the right of this is a large, stylized 'X' mark. Further right is another signature, and on the far right, there is a signature that looks like 'Munish'.

- 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 Dhabba Stone Deposit of M/s Simran Stone Mines (Partners : (i) Shri Sanjay Kumar (ii) Shri Mahendra Pandit (iii) Shri Yogendra Mehta), Village : Dhabba, Thana : Devipur, Distt. : Deoghar, Jharkhand (1.41 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - I along with following specific conditions :

- I. In compliance of OM no. F.No. IA2 22/3/2024 (A.II) (E-241594) dated 21.07.2024 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 Ghar' and the details of the same shall be uploaded in the MoEF Portal <https://ecrilife.mca.int>. 20% 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 PFT, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance.

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- 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.

**19. Thariara Stone Deposit of M/s Allon Infra Private Limited (Prop. : Shri Satwinder Singh),
Village : Thariara, Anchal : Mohanpur, Distt. : Deoghar, Jharkhand (2.246 Ha).**

(Proposal no.: 51A/JH/MIN/ 541631 /2025)

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

This is a new project which has been taken for appraisal on 26.06.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 125297.40 cum/annum or 338302.98 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Thariara Stone Deposit
2	Lessee:	: M/S Allon Infra Private Limited Address- Phase-II, Urban Estate Patiala, Punjab Authorized Person— Sri Satvendra Singh S/O-Khazjam Singh, Address- Phase –II, Urban Estate Patiala, Punjab-847002
3	Lease Address	: Village – Thariara, Anchal- Mohanpur, District – Deoghar, State - Jharkhand
4	Lease Area	: 2.246ha. Acres- 5.55 Acres
5	Type of Land	: Non-Forest (Raiyati Land)
6	Project Cost	: Rs. 70.0 Lakhs
7	EMP Budget	: Capital: Rs. 13.50Lakhs Recurring: 5.0Lakhs / year
8	New or Expansion	: New

9	Mineable Reserves	358067.35cum	966781.85Tonnes
10	Mine Life	3 year	
11	Man power	18	
12	Water Requirement	9.78 ~ 10.00 KLD(Drinking: 0.18KLD, Dust Suppression: 5.2KLD, Plantation: 4.4 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	Mayurakshi river, Approx. 0.76 km. in North direction	
17	Nearest Habitation	Shiv Nagar, Approx. 0.83 km towards East direction.	
18	Nearest Railway Station	Haridwar Railway station, approx. 4.66 km towards NE direction	
19	Nearest Airport	Deoghar Airport, approx. 19.22 km towards SW direction	
		PF, Approx. 3.4 km towards SW direction	
20	Nearest Forest	PF, Approx. 1.55 km towards South direction	
21	Road & Highways	NH - 133, Approx. 3.34 km towards North direction.	
22	Approach Road	Approx 500 meter	

CO-ORDINATES

1	Latitude	From 24°30'09.285" N	To 24°30'15.1439" N
2	Longitude	From 86°53'06.5199" E	To 86°53'15.9443" E

LAND DETAILS

Khata no.	Plot no.
02	1301 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	The letter of Intent (LOI) has been issued by District Mining Officer, Deoghar vide letter no. 78/M, dated 29.01.2024
2	CO	The CO, Mohanpur vide letter no. 7-11/Ra, dated 24.06.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in B.S. Khatyan & Register II and also certified that there was a "Jor" within the 500 meters. For which PAs have prepared and submitted the EMP outlining its mitigation measures.

3	DMO Cluster	:	DMO, Deoghar vide memo no. 501/M, dated 30.04.2025 certified that 01 Lol (2.51 Acre) exists within 500 meters radius from proposed project site and total area is 8.06 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1401, 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, Deoghar Forest Division vide letter no. 1088, dated 27.06.2023 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 Deoghar District (Page no. 62, Sl. No. D6).
7	Gram Sabha	:	BDO, Mohanpur vide letter no. 902/Vi., dated 11.07.2023 Informed that Gram Sabha conducted on 05.07.2023.
8	Mine Plan Approval	:	Approved by The Assistant Director, Geology, District Geological Office, Deoghar vide Memo No. 82, dated 20.05.2024.
9	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi-Mechanized Method	
2	Lease Area	:	2.246Ha. or 5.55Acre	Life of Mine -3 year.
3	Waste Generation	:	Total 62831.65cum waste shall be generated during the plan period.	
4	Stripping Ratio	:	1: 0.50	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Elevation of Mine	:	235AMSL to 222AMSL	
8	Ground Level Elevation	:	222AMSL	
9	Ultimate Working Depth	:	205AMSL (17m BGL)	
10	Water Table	:	195-192AMSL (27-30 m BGL)	
11	Topography of Mine	:	Undulating hillocks	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	110litre/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 bottom (mRL)
1 st Year	111646.85	301446.50	24411	5876.15	30737.15	223-211
2 nd Year	121125.10	327032.37	6957	6274.90	16031.90	211-217
3 rd Year	125297.40	332402.98	9918	6594.50	16517.60	223-205
Total	358067.35	966781.85	43986	18845.65	62831.65	

Land Use

Land Utilization	Existing Land use (Ha.)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry	Nil	1.806	1.806 (entire area will be converted water reservoir)
Waste dump	Nil		
Road	Nil	0.00	0.00
Crusher	Nil	0.00	0.00
Safety zone plantation	Nil	0.440	0.440
Total	0.00	2.246	2.246
Unused area	2.246	0.00	0.0
Total Applied Area		2.246	

ENVIRONMENT MANAGEMENT**Green Belt Development**

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.44ha	1100
2	Along Approach Road	500m	1000
3	No. of plants distributed with consultation local authorities /village Panchayat		100

- Gabron 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 li/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

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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	Nil	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	20,000 15,000 8,000 7,000
3	Plantation	11,00,000	1,00,000
4	Construction and maintenance of haul road	2,50,000	1,50,000
TOTAL		13,50,000	5,00,000

*Note: *2200 plants * 500 Rs (for each plants including hedges and fences) = Rs. 11,00,000/-*

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

300 300 = 90000/- ~ 1,50,000/-*

** 5 lakh per kilometer (500000 * 0.86 km haul road =4,30,000/-)*

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Monthly	20000
2	Soil	2 Stations	6 Monthly	8000
3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

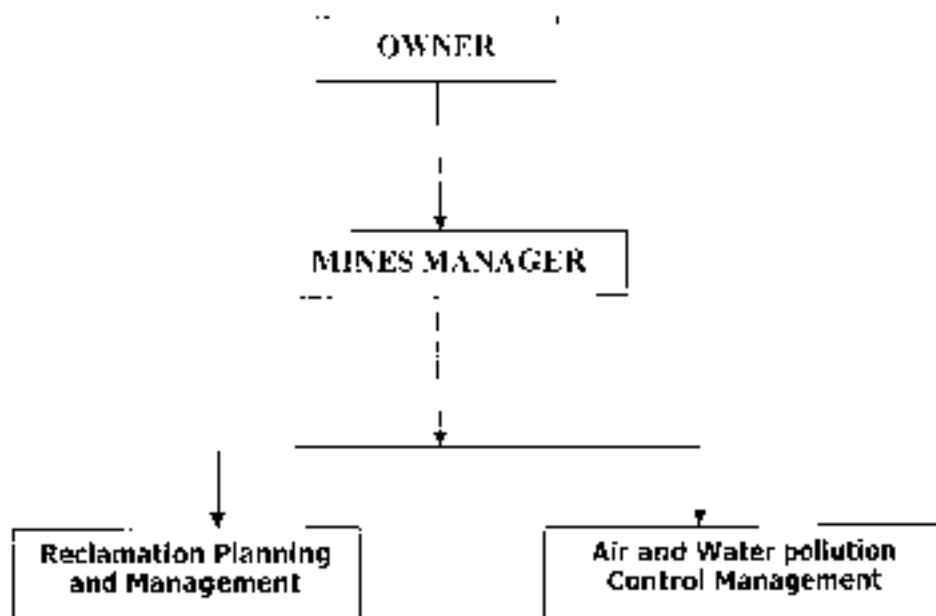
In this applied lease area the stone deposit is covered with 2m layer of intermixed soil which considered as over burden. The recovery of stone is about 95%, thus intercalated waste of only 5% shall be generate from this mine. It has been calculated that total 62131.65 cum in-situ waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 31415.83 cum (Insitu) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 31415.83 cum insitu 39269.78 cum loose & 33379.31 cum compact waste shall be temporary dumped in north western part during first two year, and during third year the generated waste and waste materials of temporary dump shall be removed and used for backfilling of exhausted part of quarry in south eastern part and it will cover 0.139ha.

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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 regrounding 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.

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- 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, There by 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	9
4	Drilling	Exposure to Dust	Frequent	Significant	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 drilling itself.

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- 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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- Time pressure
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- Untrained drivers
- Overturning vehicles

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

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipments 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 Tharlara Stone Deposit of M/s Allon Infra Private Limited (Prop. : Shri Satwinder Singh), Village : Tharlara, Anchal : Mohanpur, Distt. : Deoghar, Jharkhand (2.246 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I 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 PFT, Audiometry and other required tests. Summary findings of same to be 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.

20. Keshwari Stone Deposit of M/s Maa Durga Stone Works (Partners : (i) Shri Umakant Rana (ii) Abdul Qyum Khan (iii) Shri Jayprakash Das (iv) Shri Ramkishor Yadav (v) Shri Ishwar Saw), Village : Keshwari, Thana : Saria, Distt. : Giridih, Jharkhand (1.69 Ha).

(Proposal no. : SIA/JH/MIN/ 541172 /2025)

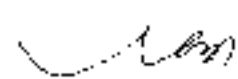
Name of the consultant : P & M Solution, Noida, U.P.

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

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

The project has been granted EC by DEIAA, Giridih vide letter no. 29/EC/DEIAA/Giridih, dated 22.12.2016

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.



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This is re-appraisal of the EC Issued by DEIAA, Giridih which has been taken up for consideration on 26.06.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category D2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM₁₀ -96 µg/m³ PM_{2.5} -567 µg/m³ SO₂ -18.2 NO₂ - 19.0 µg/m³. 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. 55/M, dated 27.01.2025 by DMO, Giridih is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Hazaribag vide memo no. 2056, dated 06.12.2024.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate regarding status of execution of compliance as no details have been provided. 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- 19120.0 cum/annum or 55448.0 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Keshwari Stone Deposit
2	Lessee:	: M/s Maa Durga Stone Works Partners - 1. Sri Umakant Rana, 2. Abdul Qyum Khan, 3. Sri Jayprakash Das, 4. Sri Ramkishor Yadav, 5. Sri Ishwar Saw
3	Lease Address	: Village – Keshwari, Thana – Sariya, District – Giridih, State – Jharkhand.
4	Lease Area	: 1.69 ha Acres- 4.18 Acres
5	Type of Land	: Non-Forest (G.M. & Rayaiti Land)
6	Project Cost	: Rs. 1.00 cr.
7	EMP Budget	: Capital: Rs. 8.00 Lakhs Recurring: 5.0 Lakhs / year
8	New or Expansion	: New (Re-appraisal of DEIAA EC)
9	Mineable Reserves	: 553926 tons 191008.96 cum
10	Mine Life	: Up to the lease period i.e. 25.07.2017 to 24.07.2027.
11	Man power	: 66
12	Water Requirement	: 8.06 ~ 8.50 KLD (Drinking: 0.66 KLD, Dust Suppression: 5.20 KLD,

		Plantation: 2.20 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	Barsoti River Approx. 1.92 km towards North direction of mine site.
17	Nearest Habitation	Kelhariyatoli. Approx. 0.61 km in South direction
18	Nearest Railway Station	Keshwari Railway Station, approx. 1.90 km towards NE direction
19	Nearest Air Port	Birsa Munda Airport, Ranchi, approx. 110.50 km towards SSW direction.
		Protected Forest Approx. 1.00 km towards SE direction of mine site.
20	Nearest Forest	Protected Forest Approx. 4.00 km towards South direction of mine site.
		Protected forest. Approx. 3.00 km towards West direction of mine site
21	Road & Highways	NH-19, Approx. 14.10 km in SW direction.
22	Approach Road	Approx 500 meter

CO-ORDINATES

1	Latitude	From 24°11'51.66" N	To 24°11'55.84" N
2	Longitude	From 85°50'01.62" E	To 85°50'10.67" E

LAND DETAILS

Khata no.	Plot no.
25, 89 & 141	777 (P), 778 (P), 780 (P), 843 (P), 856 (P), 779 (P), 832 (P), 844, 845, 857 & 858 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	Lease deed : 25.07.2017 to 24.07.2027.
2	CO	The CO, Sanyal Giridih vide letter no. 450, dated 17.10.2015 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khutiyari.
3	DMO Cluster	DMO, Giridih vide memo no. 54/M, dated 27.01.2025 certified that no other mining lease area exists within 500 m radius from proposed project site

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4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 142, dated 25.01.2025 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. 3667, dated 03.11.2015 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 Giridih District (Sl. no. 32, Page no. 35).
7	Gram Sabha	:	Gram Sabha conducted on 04.11.2015.
8	Scheme / Mine Plan Approval	:	i. Mining plan approved by Assistant Mining Officer, Giridih vide Letter No. 314/M, dated 28.01.2016. ii. Mining scheme approved by Additional Director, Geology, Hazaribagh vide Memo No. 17/G, dated 17.01.2022.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Giridih vide letter no. 29/EC/DEIAA/Giridih, dated 22.12.2016.
10	Compliance report of EC	:	Compliance report of previous EC has been issued by JSPCB, Regional Office, Hazaribag vide memo no. 2056, dated 06.12.2024.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-1734501/2018/99, dated 23.01.2018.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : JSPCB/RO/HZB/CTO-15613491/2023/44, dated 01.03.2023.
13	Production Report	:	Production report issued by DMO, Giridih vide letter no. 55/M, dated 27.01.2025.
15	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 Semi mechanized mining method
2	Lease Area	:	1.69 ha. or 4.18 Acres
		:	Life of Mine – Up to the lease period i.e. 25.07.2017 to 24.07.2027.
3	Waste Generation	:	15210 Tons
4	Stripping Ratio	:	1:0.02
5	Working Days	:	300

5	Bench size & No	: 6m x 6m
7	Elevation of Mine	: 311 AMSL to 420 AMSL
8	Ground Level Elevation	: 311 AMSL
9	Ultimate Working Depth	: 284 AMSL (27mbgl)
10	Water Table	: 277 - 269 AMSL (34-42mbgl)
11	Topography of Mine	The applied area represents almost flat land with rock mass of Dolerite
12	Explosive Requirement	: 90 kg/day
13	Diesel/Fuel requirement	: 100 litre/day

Production Details

Year	Production of Stone in tons as per DEIAA EC Letter	Production of Stone in Tons	Production of Stone In Cum	Removal of Soil in Tonnes	Bench Section
1 st	55306	55306	19071.04	8310	317-308
2 nd	55396	55396	19107.06	00	314-307
3 rd	55410	55410	19106.89	1440	308-296
4 th	55448	55448	19120.00	1800	314-302
5 th	55390	55390	19100.00	3600	313-290
Total	276950	276950	95499.98	15210	

As per approved mine plan production: - 19120.0 cum/annum or 55448.0 TPA

As per EC letter production: - 19120.0 cum/annum or 55448.0 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	0.10	1.01	1.25 (entire area will converted as water reservoir)
Dump	0.00	0.14	0.00
Parapet wall	0.00	0.00	0.00
Garland drain	0.00	0.00	0.00
Road	0.02	0.00	0.00
Safety Zone	0.44 (Plantation)	0.44 (Plantation)	0.44 (Plantation)

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Total area in use	0.56	1.59	1.69
Balanced Unused Area	1.13	0.10	0.00
Total Lease area	1.69		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.44ha	1100 (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 2200 saplings were proposed to be planted. Out of which 1100 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	--	20,000 15,000 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	5,00,000

1100 plants * 500 Rs (for each plants including hedges and fences) = 5.50 Lakh

Note: A total of 2200 saplings were proposed to be planted. Out of which 1100 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)

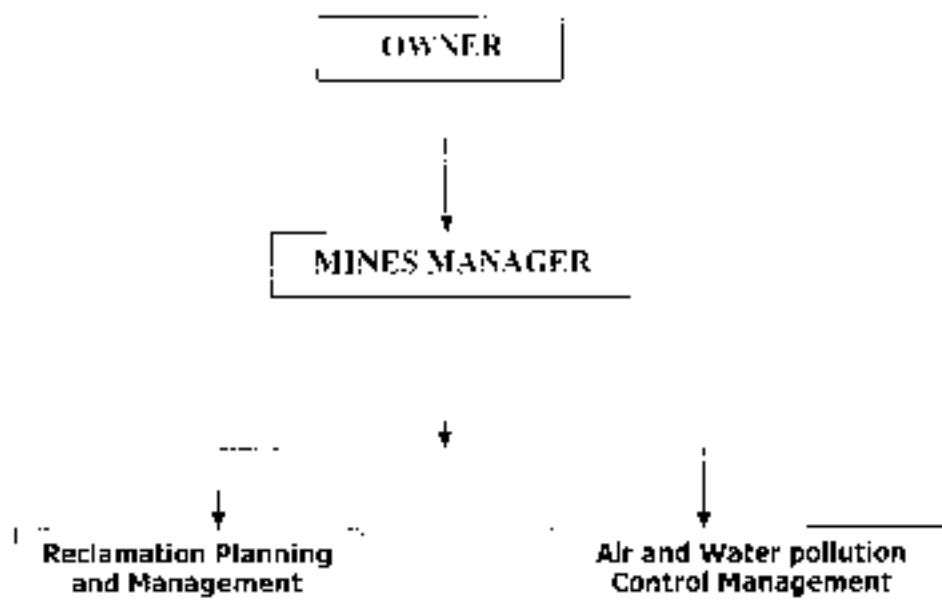
* 5.0 lakh per kilometer (500000 * 0.50 km haul road = 2,50,000/-)

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration	Budget
1	Air	4 Stations	6 Month y	20000
2	Soil	2 Stations	6 Monthly	8000
3	Surface Water	2 Stations	6 Monthly	7500
4	Ground Water	2 Stations	6 Monthly	7500
5	Noise	4 Stations	6 Monthly	7000

Solid Waste Management

Total 10140 cum or 15210 tons of waste will be generated during the plan period. During quarry development soil will be removed in 1st, 3rd, 4th & 5th year and this will be dump at the western portion of the area with suitable precaution. In the conceptual period total removal soil will be backfilled with in the exhausted quarry.



Organization Structure

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Water Quality Management

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

Air Quality Management

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

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

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

		last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	A most 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. There by 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

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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

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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

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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 proximity of the blast area 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 Bidh 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

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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

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

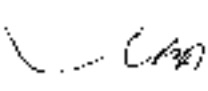
Undertaking submitted affirming:

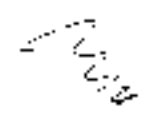
- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are 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 machines / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and repairs to be maintained.
- i. If any tree felling then necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gahior 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 Keshwari Stone Deposit of M/s Maa Durga Stone Works (Partners : (i) Shri Umakant Rana (ii) Abdul Qyum Khan (iii) Shri Jayprakash Das (iv) Shri Ramkishor Yadav (v) Shri Ishwar Saw), Village : Keshwari, Thana : Saria, Distt. : Giridih, Jharkhand (1.69 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- The production shall be restarted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.
- II. In compliance of O.M 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 Mo Ke Neem" and the details of the same shall be uploaded in the MenviFE Portal (<https://menvife.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. Falling of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

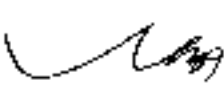
21. Chahal Stone Deposit of M/s Ganpati Minerals (Prop. : Smt. Sweta Devi), Mouza : Chahal, Thana : Deori, Distt. : Giridih, Jharkhand {4.86 Ha}.

(Proposal no.: SIA/JH/MIN/ 541442 /2025)

During appraisal the PAs were unable to provide the compliance status of the conditions as stipulated in the previous EC issued by then DEIAA.

The PAs are required to submit Certified Compliance Report (CCR) from State Pollution Control Board.

The project will be taken up for consideration after submission of the same.

22. Ghoradhua Gravel Mine of Chunna Ali, Village : Ghoradhua, Thana : Ghatshila, Distt. : East Singhbhum, Jharkhand (0.809 Ha).

(Proposal no.: SIA/JH/MIN/ 530665 /2025)

During appraisal the PAs were unable to provide the compliance status of the conditions as stipulated in the previous EC issued by then DEIAA.

The PAs are required to submit Certified Compliance Report (CCR) from State Pollution Control Board.

The project will be taken up for consideration after submission of the same.

23. Kumbra Stone Mine of M/s Kumbra Stone Mine (Prop. : Shri Shailendra Kumar), Village : Kumbra, Thana : Pipra, Distt. : Palamau, Jharkhand (2.43 Ha).

(Proposal No. SIA/JH/MIN/ 541908/2025)

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

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

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

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 120th meeting held on 20th 24.01.2025 and SEIAA, Jharkhand has approved the ToRs in 120th meeting held on 28th & 29th January, 2025. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/3469/2024/578, dated 07.02.2025. The final EIA / EMP submitted by PP to SEAC on 19.06.2025

The project has been granted EC by DEIAA, Palamau vide letter no. EC/DEIAA/2016-17/53, dated 17.08.2017.

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, Palamau which has been taken up for consideration on 25.05.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B1

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Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu\text{g}/\text{m}^3$ PM 2.5-567 $\mu\text{g}/\text{m}^3$ SO2-18.2 NO2- 19.0 $\mu\text{g}/\text{m}^3$ 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. 2564/M, dated 05.11 2024 by DMO, Palamu is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide letter no. 1561, dated 11.12.2024.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate regarding status of execution of compliance as no details have been provided. 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- 55625.92 cum/annum or 150190 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Kumhra Stone Mine
2	Lessee:	: M/s Kumhra Stone Mine (Prop. – Shri Shailendra Kumar)
3	Lease Address	: Village – Kumhra, Thana -Pipra, District – Palamu, State – Jharkhand
4	Lease Area	: 2.43 ha. Acres- 6.00 Acres
5	Type of Land	: Non-Forest (Raiyati Land)
6	Project Cost	: Rs. 1.40 cr.
7	EMP Budget	: Capital: Rs. 9.70 Lakhs Recurring: 5.70 Lakhs/year
8	New or Expansion	: New (Re-appraisal of DEIAA EC)
9	Mineable Reserves	: 17,68,775 tons 6,55,101.85 cum
10	Mine Life	: Up to the lease period i.e. 24.10.2017 to 23.10.2027.
11	Man power	: 32
12	Water Requirement	: 6.42 ~ 7.0 KLD (Drinking: 0.32 KLD, Dust Suppression: 3.02 KLD, Plantation: 3.08 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	: Sukhnadia Nadi, Approx. 0.05 km towards West direction.
17	Nearest Habitation	: Lambra in SW direction
18	Nearest Railway Station	: Japla Railway Station, approx. 15.30 km towards WNW direction
19	Nearest Air Port	: Gaya International Airport, approx. 84.90 km towards ENE direction
20	Nearest Forest	: Bansdohar Protected forest, Approx. 0.40 km in East direction. Protected forest, Approx. 1.61 km in North direction Protected forest, Approx. 2.40 km in West direction Protected forest, Approx. 1.40 km in SSW direction
21	Road & Highways	: NH 139, Approx. 8.85 km in East direction
22	Approach Road	: Approx 70 meter

CO-ORDINATES

Latitude	From 24°28'48.5" N	To 24°28'52.9" N
Longitude	From 81°08'38.1" E	To 81°08'42.0" E

LAND DETAILS

Khata no.	Plot no.
38	00 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	: Lease deed : 24.10.2017 to 23.10.2027
2	CO	: The CO Pipra, Palamau vide letter no. 78, dated 15.07.2016 has mentioned the plot no. of the project is not recorded as "Jungle-Jhar" in R.S. Khabyar
3	DMO Cluster	: DMO, Palamau, Medininagar vide memo no. 1455/M, dated 08.07.2021 certified that U1 other mining lease area 17.00 Acre exists within 500 m radius from proposed project site and total area is 12.00 Acre (S 26 Hz)
4	DFO Wild life	: Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 364, dated 25.04.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve.
5	DFO Territorial	: Divisional Forest Officer, Medininagar Forest Division vide letter no. 3383, dated 02.09.2016 certified that the distance of forest

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		land is more than 250 meter from proposed project site.
6	DSR	This project is mentioned in approved DSR of Palamau District (Sl. no. 32, Page no. 229).
7	Gram Sabha	Gram Sabha conducted on 24.10.2016.
8	Scheme / Mine Plan Approval	Mining scheme approved by Additional Director, Geology, Hazaribagh vide Memo No. 22/G, dated 21.04.2022.
9	Previous Environmental Clearance (EC)	Previous EC granted by DEIAA, Palamau vide letter no. EC/DEIAA/2016-17/53, dated 17.08.2017.
10	Compliance report of EC	Compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide letter no. 1561, dated 11.12.2024.
11	Consent to Establish (CTE)	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2038063/2018/182, dated 14.02.2018.
12	Consent to Operate (CTO)	CTO issued by JSPCB vide ref. no. : JSPCB/RO/RNC/CTO-20207582/2024/1928, dated 18.12.2024.
13	Production Report	Production report issued by DMO, Palamau vide memo no. 2564/M, dated 05.11.2024
14	Public Hearing	Public Hearing conducted on 09.06.2025.
15	Baseline Monitoring period	October, 2024 to December, 2024.
16	Qualified Person	Shri J.P. Bhattacharya vide letter dated 22.01.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	: Opencast mechanized mining method
2	Lease Area	: 2.43 ha or 6.00 Acres
		Life of Mine – Up to the lease period i.e. 24.10.2017 to 23.10.2027.
3	Waste Generation	: 26382 cum
4	Stripping Ratio	: 01:0.9
5	Working Days	: 300
6	Bench: size & No	: 6m x 6m
7	Elevation of Mine	: 179 AMSL to 199 AMSL

8	Ground Level Elevation	: 279 AMSL
9	Ultimate Working Depth	: 137 AMSL (42 mbgl)
10	Water Table	: 127-125 AMSL (54-52 mbgl)
11	Topography of Mine	: The lease area represents a small hillside.
12	Explosive Requirement	: 110 kg/day
13	Diesel/Fuel requirement	: 120 litre/day

Production Details

Year	Production as per EC Letter in Tons	Production of Stone		Overburden & Waste (cum)	Bench section
		cum	tons		
1st year	150109	55595.92	150109	26382	197-185
2nd year	150044	55571.85	150044	-	185-179
3rd year	150109	55595.92	150109	-	179-173
4th year	150190	55625.92	150190	-	173-167
5th year	150044	55571.85	150044	-	167-161
Total	750496	277961.46	750496	26382	

As per approved mine plan production: - 55625.92 cum/annum or 150190 TPA

As per EC letter production: - 55625.92 cum/annum or 150190 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	0.819	1.764	1.910 (Entire area shall be converted into water reservoir)
Road	0.030	0.050	-
Safety Zone	0.520 (Plantation)	0.520 (Plantation)	0.520 (Plantation)
Dump	0.225	-	-
Rest shelter, office etc.	0.020	-	-
Area utilized (Periphery, Safety barriers etc.)	-	-	-
Total area in use	1.614	2.334	2.43

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Balanced land	0.816	0.096	-
Total Lease area	2.43	2.43	2.43

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.520 ha	1300 (Already done during previous year of mining)
2	Along Approach Road	70 m	140
3	No. of plants distributed with consultation local authorities /village Panchayat	-	1401

Note: A total of 2841 saplings were proposed to be planted. Out of which 1300 plant in Safety Zone area have been planted during previous year of mining.

{140 plants along approach road & 1401 plants with consultation from local authorities/ village Panchayat} will be done in the first year of operation. (Total 1541 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.

Issues wise Public Hearing Action Plan

S. No.	Issue	Replied by PP	(Response /Action Plan)	Cost
1	Dust suppression	Dust suppression will be done twice a day.	Water sprinkling will be done twice a day.	Approx 4 Lakh has been allocated for Dust Suppression. This will be done Twice a day or as per requirement. This will be done during entire life of mine.
1.	Employment	He said that, the Employment should be provided	Representative of project proponent replied that the employment will be provided to the local	Renumeration will be given as gov norms.

		to the local people. people on the basis of their qualification and experience	
2.	Plantation	Plantation will be done along the haul road and safety zone of the lease area.	About 4542 trees for Approx 13.46 lakh has been allocated for proposed plantation in for entire cluster. Out of which 1550 for mine-1, 1300 for mine-2 has been already planted Rest approx 2692 plant Planation will be done in the 1 st year of mining
3.	Road	Road will be repaired.	Road repair for entire cluster. Road maintenance will be done for entire life of mine. Approx 4.0 lakh has been allocated for Road repair Road will be repaired during 1 st year of mining
4.	Blasting	Controlled blasting will be done blasting will be done between 1 PM to 2 PM only	Blasting will be done by authorized Vendor Total Rs. 4.0 lakh will be spent as recurring cost for Pollution Control & Dust Suppression which has also been included in EMP Cost

Need Based SE Survey Detail

Sl. No	Need	Budget
1	Water Problem	Approx Rs. 1,00,00 (Two hand pump in Village Kurnahar)
2	Employment	Employment will be given people as per their skills

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression		2,00,000
2	Baseline Monitoring		50,000
	i) Air		40,000
	ii) Water		20,000
	iii) Soil		10,000

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	iv) Noise		
3	Plantation	7,70,500	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
TOTAL		9,70,500	5,70,000

Note: *1541 plants * 500 Rs (for each plants including hedges and fences) = 7.705 Lakhs

A total of 2841 saplings were proposed to be planted. Out of which 1300 plant in Safety Zone area have been planted during previous year of mining.

{140 plants along approach road & 1401 plants with consultation from local authorities/ village Panchayat} will be done in the first year of operation. (Total 1541Plants)

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

300* 300 = 90000/- or 1,50,000/- (including maintenance material)

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

Air Quality Location

Code	Monitoring location	Distance (km)	Direction
AAQ1	Near Project Site		
AAQ2	Pipra	4.05	SE
AAQ3	Chaparbar	7.75	SE
AAQ4	Bara	3.85	NW
AAQ5	Anjinia	6.43	East
AAQ6	Jharitola	8.57	NE
AAQ7	Chaukhanda	6.73	West
AAQ8	Keandra Khurd	7.68	SSW

Noise Monitoring Stations in the Study Area

Code	Monitoring location	Distance (km)	Direction
NQ1	Near Project Site		

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NQ2	Pipra	4.05	SE
NQ3	Chaparbar	7.75	SE
NQ4	Bara	3.85	NW
NQ5	Anjina	6.43	East
NQ6	Jharitola	8.57	NE
NQ7	Chaukhanda	6.73	West
NQ8	Koandra Khurd	7.68	SSW

Soil Sample Collection Points in the study area

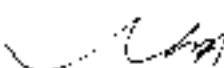
Code	Monitoring location	Distance (km)	Direction
SQ1	Near Project Site	-	-
SQ2	Pipra	4.05	SE
SQ3	Chaparbar	7.75	SE
SQ4	Bara	3.85	NW
SQ5	Anjina	6.43	East
SQ6	Jharitola	8.57	NE
SQ7	Chaukhanda	6.73	West
SQ8	Koandra Khurd	7.68	SSW

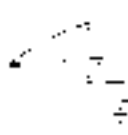
Water Quality Location Map in the study area

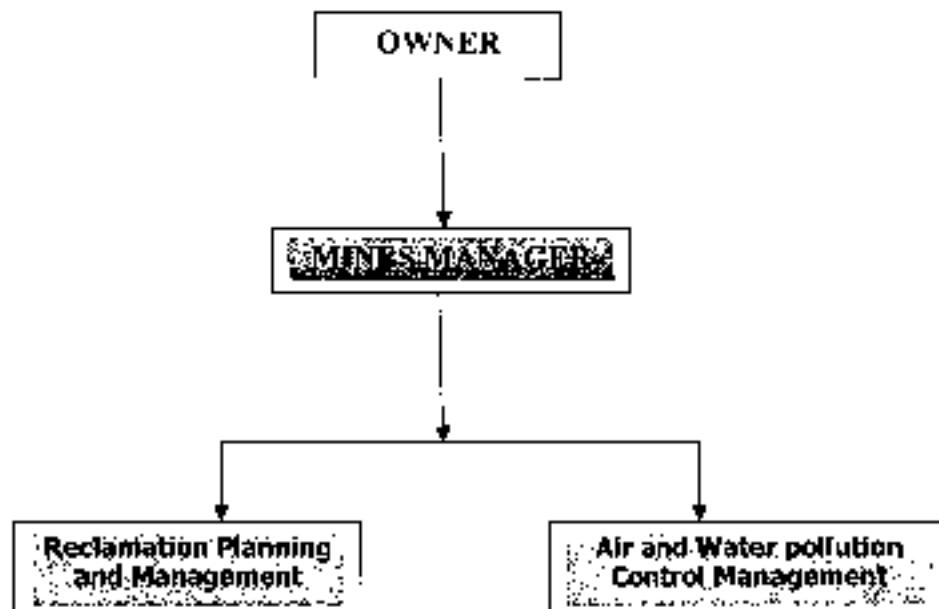
Code	Surface Water		
	Location	Distance (km)	Direction
SW1	Batane Nadi	9.55	East
SW2	Karanwar Canal	8.75	West
Code	Ground water		
	Location	Distance (km)	Direction
GW1	Gosai - dihi	0.30	SE
GW2	Pipra	2.24	SE
GW3	Anjina	4.60	East
GW4	Chaukhanda	6.73	West
GW5	Bara	3.85	NW

Solid Waste Management

Total 26382 cum of total waste will be generated during the plan period. For disposal of overburden and waste materials, dump has been planned towards the west and south side boundaries junction as a temporary measure.





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.

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- 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 once 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)

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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

- 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 D&MS with proper training in explosive handling and use will be allowed for blasting operations.

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

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

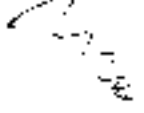
- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.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

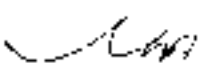
Health Hazards

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

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

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

Accident at Site

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

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

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

Transportation

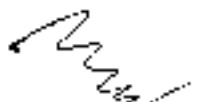
The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator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

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

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

Undertaking submitted affirming:

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

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12.12.18 decided that the proposal for Kumhra Stone Mine of M/s Kumhra Stone Mine (Prop. : Shri Shailendra Kumar), Village : Kumhra, Thana : Pipra, Distt. : Palamau, Jharkhand (2.43 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I 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. Kumbhra Stone Mine of M/s Kumbhra Stone Mine (Prop. : Shri Nitin Gupta), Village : Kumbhra, Thana : Pipra, Distt. : Palamau, Jharkhand (2.83 Ha).

{Proposal No. SIA/JH/MIN/ 541845/2025}

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

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

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

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 120th meeting held on 23 - 24.01.2025 and SEIAA, Jharkhand has approved the ToRs in 170th meeting held on 28th & 29th January, 2025. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/2464/2024/594, dated 07.02.2025. The final EIA / EMB submitted by PP to SEAC on 19.06.2025.

The project has been granted EC by DEIAA, Palamau vide letter no. EC/DEIAA/2016-17/78, dated 29.05.2017.

As per O.M. dated 25th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SIAC.

This is re-appraisal of the EC issued by DEIAA, Palamau, which has been taken up for consideration on 26.06.2025. As per O.M. dated 17.12.18 issued by MOEF & CC projects fall in category B1.

Existing base line condition as per monitoring report submitted by PP is as follows PM₁₀-06 µg/m³ PM_{2.5}-567 µg/m³ SO₂-18.2 NO₂- 19.0 µg/m³. 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. 2658/M. dated 30.11.2024 by DMO, Palamau is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide letter no. 51, dated 13.01.2025.

The SIAC has found that the certification of the compliance of the conditions of previous EC is not appropriate regarding status of execution of compliance as no details have been provided. 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.

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EC Application for: Proposed Capacity- 88883.90 cum/annum or 239986.53 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Kumhra Stone Mine
2	Lessee:	M/s Kumhra Stone Mine, (Prop. – Shri Nitin Gupta)
3	Lease Address	Village – Kumhra, Thana -Pipra, District – Palamu, State – Jharkhand
4	Lease Area	2.83 ha Acres- 7.00 Acres
5	Type of Land	Non-Forest (Raiyati Land)
6	Project Cost	Rs. 1.40 cr.
7	EMP Budget	Capital: Rs. 7.775 Lakhs Recurring: 5.70 Lakhs/year
8	New or Expansion	New (Re-appraisal of DEIAA EC)
9	Mineable Reserves	1274445.90 tons 4,72,017cum
10	Mine Life	Up to the lease period i.e 07.11.2017 to 06.11.2027.
11	Man power	26
12	Water Requirement	5.155 ~ 5.0 KLD(Drinking: 0.26 KLD, Dust Suppression: 2.595 KLD, Plantation: 2.30 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	Seasonal Nalfa, Approx. 400 metertowards West direction.
17	Nearest Habitation	Tendul, Approx. 0.610 km in SW direction
18	Nearest Railway Station	Japla Railway Station, approx. 15.30 km towards WMW direction.
19	Nearest Air Port	Gaya International Airport, approx. 84.90 km towards ENE direction.
20	Nearest Forest	Bansdohar Protected forest, Approx. 0.40 Km in East direction. Protected forest, Approx. 1.40 Km in North direction Protected forest, Approx. 2.40 km in West direction Protected forest, Approx. 4.37 km in SSW direction
21	Road & Highways	NH-139, Approx. 8.85 km in East direction.
22	Approach Road	Approx 250 meter

CO-ORDINATES

Latitude	:	From 24°28'52.0" N	To 24°28'55.10" N
Longitude	:	From 84°08'38.40" E	To 84°08'42.60" E

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LAND DETAILS

Khata no.	Plot no.
38	06 IP

STATUTORY CLEARANCES

1	LCI / Lease docs	Lease deed 07.11.2017 to 06.11.2027.
2	CO	The CO, Palamau vide letter no. 79 dated 15.07.2016 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatiyon.
3	DMO Cluster	DMO, Palamau, Medinagar vide memo no. 1454/V, dated 03.07.2024 certified that CI other mining lease area 16.00 Acre exists within 500 m radius from proposed project site and total area is 13.00 Acre 15.28 Ha.
4	DFO Wild Life	Deputy Director, Palamau Tiger Project, South Division, Medinagar vide letter no. 365, dated 25.04.2024 certified that the proposed project site is outside Pro sensitive Zone of Palamau Tiger Reserve.
5	DFO Territorial	Divisional Forest Officer, Medinagar Forest Division vide letter no. 3322, dated 03.09.2016 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 Palamau District (Sl. no. 79 Page no. 228).
7	Gram Sabha	Gram Sabha conducted on 24.10.2016.
8	Scheme / Mine Plan Approval	Mining scheme approved by Additional Director, Geology, Hazaribagh vide Memo No. 69/C, dated 07.04.2022.
9	Previous Environmental Clearance (EC)	Previous EC granted by DLIAA, Palamau vide letter no. EC/DFIAA/2016-17/28, dated 29.05.2017.
10	Compliance report of EC	Compliance report of previous EC has been issued by JSPCB, Regional Office, Dhanuwa vide letter no. 51, dated 13.01.2025.
11	Consent to Establish (CIE)	CIE issued by JSPCB vide Ref. no. JSPCB/HQ/RNC/CTE-202/501/2018/368, dated 07.04.2018.
12	Consent to Operate (CIO)	CIO issued by JSPCB vide ref. no.

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		i. JSPCB/RO/RNC/CTO-4765197 /2019/69, dated 18.03.2019. ii. JSPCB/RO/RNC/CTO-12693970 /2022/88, dated 02.04.2022.
13	Production Report	Production report issued by DMO, Palamau vide memo no. 2668/M, dated 30.11.2024.
14	Public Hearing	Public Hearing conducted on 09.06.2025.
15	Baseline Monitoring period	October, 2024 to December, 2024.
16	Qualified Person	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

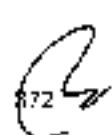
Working Details

1	Mining Method	:	Opencast Semi-mechanized mining method	
2	Lease area	:	2.83 ha or 7.00 Acres	Life of Mine –Up to the lease period i.e. 07.11.2017 to 06.11.2027.
3	Waste Generation	:	Total 38044.70 Cum (14670.00 Cum Overburden and 23374.70 Cum interburden)	
4	Stripping Ratio	:	01:0.8	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Elevation of Mine	:	179 AMSL to 209 AMSL	
8	Ground Level Elevation	:	179 AMSL	
9	Ultimate Working Depth	:	150 AMSL (29 mbgl)	
10	Water Table	:	146-144 AMSL (35- 33 mbgl)	
11	Topography of Mine	:	The lease area represents a small hillock.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	120 litre/day	

Production Details

Year	Proposed Production as per EC in Tons	Production of Stone		Overburden in cum	Intercalated waste in cum	Total waste in cum	Bench section
		cum	tons				
1 st year	240017	88883.90	239986.53	-	4678.10	4678.10	186-156
2 nd year	240095	88817.40	239806.98	7830.00	4674.60	12504.60	204-150







3 rd year	240072	88834.50	239853.15	6840.00	4675.50	11515.50	130-174
4 th year	240006	88834.50	239853.15	-	4675.50	4675.50	168-162
5 th year	240017	88749.00	239622.30	-	4671.00	4671.00	162-150
Total	1200206	444119.30	1199122.11	14670.00	23374.70	38044.70	

As per approved mine plan production: 88883.90 cum/annum or 239986.53 TPA

As per EC letter production: - 88924.07 cum/annum or 240095 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	1.492	2.593	2.593 (0.318 ha. area shall be backfilled & entire area shall be converted into water reservoir)
Road	0.015	0.003	0.008
Safety Zone (Plantation)	0.219	0.219 (Plantation)	0.219 (Plantation)
Total area in use	1.756	2.82	2.82
Balance/Unused Area	1.074	0.01	0.01
Total Lease area	2.83	2.83	2.83

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
			550
1	Safety Zone	0.219 ha	(Already done during previous year of mining)
2	Along Approach Road	250 m	500
3	No. of plants distributed with consultation local authorities (village Panchayat)		551

Note: A total of 1701 saplings were proposed to be planted. Out of which 550 plant in Safety Zone area have been planted during previous year of mining.

1500 plants along approach road & 651 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 1151 Plants)

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary)

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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.

Issue wise action Plan for Public Hearing

S. No.	Issue	Replied by PP	(Response /Action Plan)	Cost
1.	Dust suppression	Dust suppression will be done twice a day.	Water sprinkling will be done twice a day.	Approx 4 Lakh has been allocated for Dust Suppression. This will be done Twice a day or as per requirement. This will be done during entire life of mine.
1.	Employment	He said that, the Employment should be provided to the local people.	Representative of project proponent replied that the employment will be provided to the local people on the basis of their qualification and experience.	Renumeration will be given as gov norms.
2.	Plantation	Plantation will be done along the haul road and safety zone of the lease area.	About 4542 trees for entire cluster has been proposed for plantation. Out of which (550 for mine-1, 1300 for mine-2 has been already planted. Rest approx 2692 plant.	Approx 13.46 lakh has been allocated for plantation in for entire cluster Planation will be done in the 1 st year of mining.
3.	Road	Road will be repaired. .	Road repair for entire cluster. Road maintenance will be done for entire life of mine.	Approx 4.0 Lakh has been allocated for Road repair. Road will be repaired during 1 st year of mining.

4.	Blasting	Controlled blasting will be done. Blasting will be done between 1 PM to 2 PM only	Blasting will be done by authorized vendor.	Total Rs. 40 lakh will be spent as recurring cost for Pollution Control & Dust Suppression which has also been included in EMP Cost.

Need Based SE Survey Detail

Sr No	Need	Budget
1	Water Problem	Approx Rs. 1,00,00 (two hand pump in Village Kumhara)
2	Employment	Employment will be given people as per their skills.

Air Quality Location

Code	Monitoring location	Distance (km)	Direction
AAQ1	Near Project Site	-	-
AAQ2	Pipra	4.05	SE
AAQ3	Chaparbar	7.75	SE
AAQ4	Bara	3.85	NW
AAQ5	Anjima	6.43	East
AAQ6	Jhantola	8.57	NE
AAQ7	Chaukhanda	6.72	West
AAQ8	Keandra Khurd	7.68	SSW

Noise Monitoring Stations in the Study Area

Code	Monitoring location	Distance (km)	Direction
NQ1	Near Project Site	-	-
NQ2	Pipra	4.05	SE
NQ3	Chaparbar	7.75	SE
NQ4	Bara	3.85	NW
NQ5	Anjima	6.43	East
NQ6	Jharitola	8.57	NE
NQ7	Chaukhanda	6.72	West
NQ8	Keandra Khurd	7.68	SSW

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Soil Sample Collection Points in the study area

Code	Monitoring location	Distance (km)	Direction
SQ1	Near Project Site	-	-
SQ2	Pipra	4.05	SE
SQ3	Chapaybar	7.75	SE
SQ4	Bara	3.85	NW
SQ5	Anjinla	6.43	East
SQ6	Jharitola	8.57	NE
SQ7	Chaukhanda	6.73	West
SQ8	Keandra Khurd	7.68	SSW

Water Quality Location Map in the study area

Code	Surface Water		
	Location	Distance (km)	Direction
SW1	Batane Nadi	9.59	East
SW2	Karanwar Canal	8.79	West
Ground water			
GW1	Gossin - dih	0.30	SE
GW2	Pipra	2.24	SE
GW3	Anjinia	4.60	East
GW4	Chaukhanda	6.73	West
GW5	Bara	3.85	NW

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	5,75,500	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
TOTAL		7,75,500	5,70,000

Note: * 1151 plants * 500 Rs (for each plants including hedges and fences) = 5.755 Lakhs

A total of 1701 saplings were proposed to be planted. Out of which 550 plant in Safety zone area have been planted during previous year of mining.

1500 plant along approach road & 651 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 1151 Plants)

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

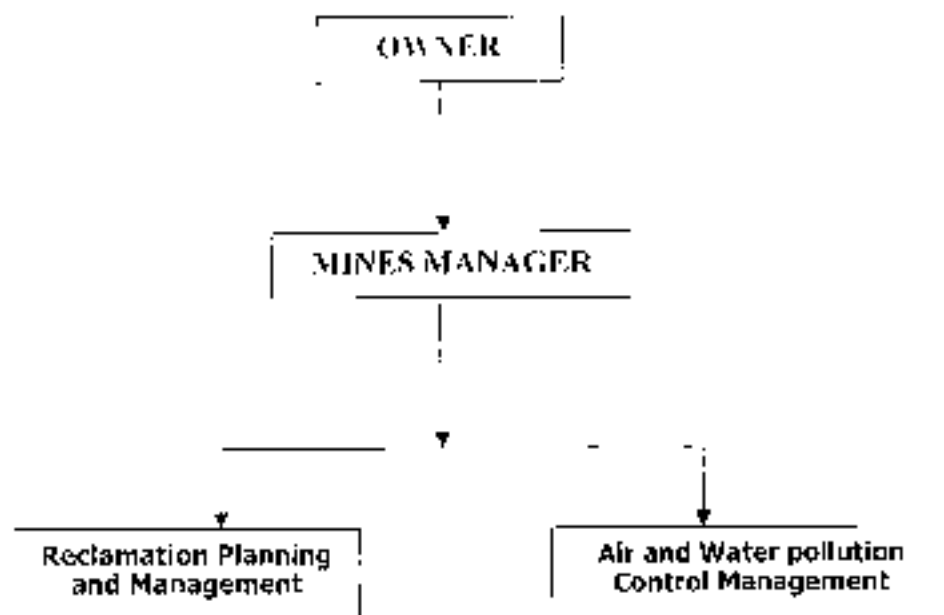
300* 500 = 30000/- or 1,50,000/- (including maintenance material)

Environment Monitoring Programme

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

Solid Waste Management

Total 38044.70 cum of total waste will be generated during the plan period. Waste shall be dumped in the south western side of the lease area with maximum height of 6.36m. Third year onwards the yearly generated waste and dump material of 1st year & 2nd year shall be used in backfilling of exhausted quarry in northern part, these backfilling will cover 0.318 ha area.



Organization Structure

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Water Quality Management

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

Air Quality Management

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

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

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

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

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

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

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

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Hazard identification & Risk Analysis in Stone mining operation

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

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

Preventive Measures:

Face Stability

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

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

- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

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

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in or 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.

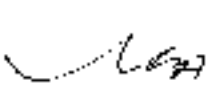
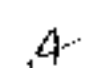
Control Measures

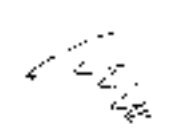
- It will be ensured that the drilling equipment is suitable for the job
- The person in charge of the drilling machine is competent to carry out the drilling operation: part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step 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.

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- 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

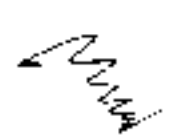
Undertaking submitted affirming:

- 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.



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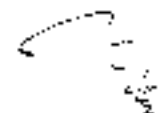
- f. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PJC and records to be maintained.
- g. If any tree felling than necessary permission shall be taken from the competent authority
- h. Slope of the Water bodies 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 persone

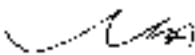
Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Kumhra Stone Mine of M/s Kumhra Stone Mine (Prop. : Shri Nitin Gupta), Village : Kumhra, Thana - Pipra, Distt. : Palamau, Jharkhand (2.83 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I 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. IA-3-23/3/2024-IA.III (I-741594) 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 Mo Ke Naam" and the details of the same shall be uploaded in the MeriLife Portal (<https://merilife.mca.gov>). 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.

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- 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.

**25. Pahaldeva Stone Mine of M/s Pahaldeva Stone Mine (Prop. : Shri Subodh Kumar Singh),
Village : Pahaldeva, Thana : Pipra, Distt. : Palamau, Jharkhand (2.43 Ha).**

(Proposal No. SIA/JH/MIN/ 541995/2025)

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

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

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

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 120th meeting held on 20 - 24.01.2025 and SEIAA, Jharkhand has approved the ToRs in 120th meeting held on 28th & 29th January, 2025. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/3470/2024/596, dated 07.02.2025. The final EIA / EMP submitted by PP to SEAC on 19.06.2025.

The project has been granted EC by DEIAA, Palamau vide letter no. EC/DEIAA/2016-17/26, dated 29.05.2017.

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, Palamau which has been taken up for consideration on 26.06.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B1.



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Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu\text{g}/\text{m}^3$ PM 2.5-567 $\mu\text{g}/\text{m}^3$ SO₂-18.7 NO₂- 19.0 $\mu\text{g}/\text{m}^3$. 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. 2672/V, dated 30.11.2024 by DMO, Palamu is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dhanwada letter no. 106, dated 20.01.2025.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate regarding status of execution of compliance as no details have been provided. 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-57818.14 cum/annum or 156109 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Pahaldeva Stone Mine
2	Lessee	M/s Pahaldeva Stone Mine (Prop. Shri Subodh Kumar Singh)
3	Lease Address	Mouza - Pahaldeva, Thana - Pipra, District - Palamu, State - Jharkhand
4	Lease Area	2.43 ha Acres- 6.00 Acres
5	Type of Land	Non-Forest (Bariyati Land)
6	Project Cost	Rs. 1.10 cr
7	EMP Budget	Capital: Rs. 5.50 Lakhs Recurring / 70 Lakhs/year
8	New or Expansion	New (Re-appraisal of DEIAA EC)
9	Mineable Reserves	1237764 tons 458431.11 cum
10	Mine life	Up to the lease period i.e. 24.10.2017 to 23.10.2027
11	Man power	34
12	Water Requirement	5.94 m ³ 6.0 KLD (Drinking: 0.34 KLD, Dust Suppression: 4.36 KLD, Plantation: 1.44 KLD)
13	Water Source	Water will be taken from nearby village
14	DC Set / power	500 KVA
15	Crusher	No Crusher

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16	Nearest Water Body	:	--
17	Nearest Habitation	:	Kalipur in SSW direction
18	Nearest Railway Station	:	Japla Railway Station, approx. 17.30 km towards WNW direction.
19	Nearest Air Port	:	Gaya International Airport, approx. 85.70km towards ENE direction.
20	Nearest Forest	:	Protected Forest, Approx. 1.00 km. In North direction Protected Forest, Approx. 4.50 km. in West direction Protected Forest, Approx. 4.30 km. in SE direction
21	Road & Highways	:	NH-139, Approx. 7.70 km. In East direction.
22	Approach Road	:	110 meter

CO-ORDINATES

Latitude	:	From 24°28'22.59"N	To 24°28'24.01"N
Longitude	:	From 84°9'20 15"E	To 84°9'23.17"E

LAND DETAILS

Khata no.	Plot no.
36	31

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed : 24.10.2017 to 23.10.2027.
2	CO	:	The CO, Pipra, Palamau vide letter no. 77, dated 15.07.2016 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatyan.
3	DMO	:	DMO, Palamau, Medininagar vide memo no. 1453/M, dated 08.07.2024 certified that 03 other mining lease area (4.00 Acre, 10.00 Acre & 8.00 Acre) exists within 500 m radius from proposed project site and total area is 28.00 Acre (11.33 Ha.).
4	DFO Wild Life	:	Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 757, dated 24.08.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palamau tiger Reserve.
5	DFO Forest Distance	:	Division Forest Officer, Medininagar Forest Division vide letter no. 3381, dated 03.09.2016 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 Palamau District (Sl. no. 17, Page no. 68).
7	Gram Sabha	Gram Sabha conducted on 17.07.2016.
8	Scheme / Mine Plan Approval	Mining scheme approved by Additional Director Geology, Hazaribagh vide Memo No. 326/G, dated 22.10.2022
9	Previous Environmental Clearance (EC)	Previous EC granted by DEIAA, Palamau vide letter no. EC/DEIAA/2016-17/26 dated 29.05.2017.
10	Compliance report of EC	Compliance report of previous EC has been issued by JSPCB, Regional Office, Dhanuwa vide letter no. 105, dated 20.01.2025
11	Consent to Establish (CTE)	CTE issued by JSPCB vide Ref. no. JSPCB/RO/RNC/CTE 2017600 /2018 /8, dated 04.01.2018
12	Consent to Operate (CTO)	CTO issued by JSPCB vide ref. no. : JSPCB/RO/RNC/CTO-14676852 /2022/239, dated 25.11.2022
13	Production Report	Production report issued by DMO, Palamau vide memo no. 2672/M, dated 30.11.2024.
14	Public Hearing	Public Hearing conducted on 06.06.2025
15	Baseline Monitoring period	October, 2024 to December, 2024
16	Qualified Person	Shri J.P. Bhattacharya vide letter dated 22.01.2025 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	Opencast mechanized mining method
2	Lease Area	2.43 ha or 6.00 Acres
		Life of Mine - up to the lease period i.e. 24.10.2017 to 23.10.2027
3	Waste Generation	18734 Cum
4	Stripping Ratio	01:0.5
5	Working Days	300
6	Bench size & No	6m x 6m
7	Elevation of Mine	196 AMSL
8	Ground Level Elevation	194 AMSL
9	Ultimate Working Depth	178 AMSL (16 mbgl)
10	Water Table	154-157 AMSL (57-60 mbgl)

80%

100%

100%

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11	Topography of Mine	:	The lease area is a very gently sloping land with mass of Granite-gneiss.
12	Explosive Requirement	:	110 kg/day
13	Diesel/Fuel requirement	:	120 litre/day

Production Details

Year	Proposed Production of EC in Tons	Proposed Production of Stone In Cum	Proposed Production of Stone in Tons	Overburden Removal (cum)	Bench section
1 st	156092	57784.07	156017	13976	198-186
2 nd	156038	57788.14	156028	4758	196-180
3 rd	156144	57818.14	156109	-	186-177
4 th	156117	57791.11	156036	-	190-174
5 th	156095	57797.03	156052	-	184-171
Total	780486	288978.49	780242	18734	--

As per approved mine plan production: - 57818.14 cum/annum or 156109 TPA

As per EC letter production: - 57831.11 cum/annum or 156144 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	0.600	1.300	1.730 (Entire area will be converted into water reservoir)
Safety Zone	0.700 (Plantation)	0.700 (Plantation)	0.700 (Plantation)
Dump	0.050	0.080	-
Total area in use	1.350	2.080	2.430
Balanced Unused Area	1.080	0.350	-
Total Lease area	2.430	2.430	2.430

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.700 ha	1750 (Already done during previous year of mining)
2	Along Approach Road	110 m	220

3	No. of plants distributed with consultation local authorities /village Panchayat	500

Note: A total of 2170 saplings were proposed to be planted. Out of which 1750 plant in Safety Zone area have been planted during previous year of mining.

(220 plants along approach road & 500 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 720 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.

Public Hearing Action Plan Issue Wise

S. No.	Issue	Replied by PP	Action Plan	Cost
1.	Employment	He said that, the Employment should be provided to the local people.	Representative of project proponent replied that the employment will be provided to the local people on the basis of their qualification and experience.	of Renumeration will be given as per gov Norms.
2.	Plantation	Plantation will be done along the haul road and safety zone of the lease area.	About 8190 trees for entire cluster has been proposed for capital cost for plantation. Out of which (1475 for mine-1, 1750 for mine-2 and 1065 for mine -3 has been already planted. Rest approx 3900 plant will be planted during 1 st year of mining.	Approx 19.55 lakh has been allocated as a cost for entire cluster. This will be done during 1 st year of mining.

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3.	Road	Road will be repaired.	Road will be repaired and it will be maintained through out the life of mine.	Approx 13.0 Lakh has been allocated for road repair for entire cluster. Repair work will start immediately after mining operation and it will be completed within six month of start of mining operation.
4.	Dust suppression	Dust suppression will be done twice a day.	Water sprinkling will be done twice a day.	Approx . 12 Lakh has been allocated for water sprinkling.

Need based SE Survey

Sr No.	Issue	Action Plan with cost
1	Employment	Employment will be provided to the local people as per their eligibility. Renumeration will be given as gov. norms
2	Medical	Health checkup will be done twice a year in near by village. Medicine will be distributed in near by village area. A sum of Rs. 1,00,000 will be kept as separate fund.

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	--	50,000 40,000 20,000 10,000
3	Plantation	1,10,000	50,000
4	Construction and maintenance of haul road	7,00,000	1,50,000
	As per Public Hearing		
	Planation	2,50,000	50,000

TOTAL	5,60,000	7,70,000

Note: *720 plants * 500 Rs (for each plants including hedges and fences) = 3.60 Lakhs

A total of 2470 saplings were proposed to be planted. Out of which 1750 plant in Safety Zone area have been planted during previous year of mining.

(220 plants along approach road & 500 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 720 Plants)

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

300* 300 = 90000/- or 1,50,000/- (including maintenance material)

Air quality Location in the study area

Code	Monitoring location	Distance (km)	Direction
AAQ1	Near Project Site		
AAQ2	Pipra	2.24	SE
AAQ3	Chaparbar	5.99	SE
AAQ4	Bara	5.32	NW
AAQ5	Anjina	4.60	East
AAQ6	Jharitoli	3.40	NE
AAQ7	Kumhara	1.68	West
AAQ8	Keandra Khurd	7.64	SW

Water Sampling location point in the study area

Code	Surface Water		
	Location	Distance (km)	Direction
SW1	Ratane Nadi	7.68	East
SW2	Karaiwar Canal	8.79	West
Ground water			
GW1	Gossing - din	0.30	SE
GW2	Pipra	2.24	SE
GW3	Anjina	4.60	East
GW4	Kumhara	1.68	West
GW5	Bara	5.18	NW

Noise Level Monitoring Stations in the Study Area

Code	Monitoring location	Distance (km)	Direction
NQ1	Near Project Site		

Low A 100% 1/2 100%

NQ2	Pipra	2.24	SE
NQ3	Chaparbar	5.89	SE
NQ4	Bara	5.32	NW
NQ5	Anjina	4.60	East
NQ6	Jharitola	8.40	NE
NQ7	Kumhara	1.68	West
NQ8	Keandra Khurd	7.65	SW

Soil Sample Collection Points

Code	Monitoring location	Distance (km)	Direction
SQ1	Near Project Site	-	-
SQ2	Pipra	2.24	SE
SQ3	Chaparbar	5.89	SE
SQ4	Bara	5.32	NW
SQ5	Anjina	4.60	East
SQ6	Jharitola	8.40	NE
SQ7	Kumhara	1.68	West
SQ8	Keandra Khurd	7.65	SW

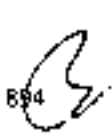
Environment Monitoring Programme

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

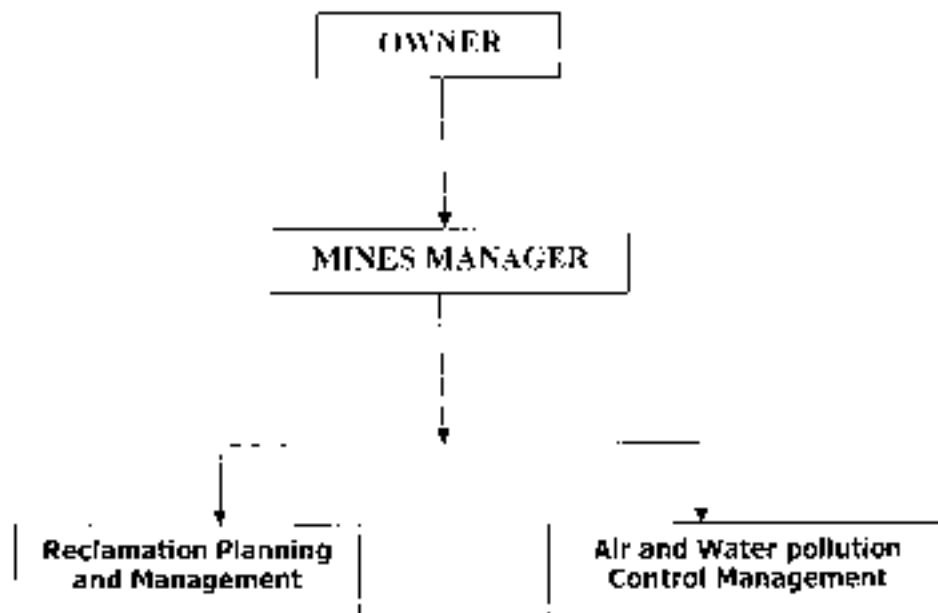
Solid Waste Management

Total 18734 cum overburden will be generated during the plan period. The overburden materials will be transported up to the dumping area near southeast junction area and will be used in maintenance 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, There by 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	Ht. 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	Remote	Minor	16

23/11/2023

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		Exposure to Dust			

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.

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- 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 drilling 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.

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- 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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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 1951.
- 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.

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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 Pahaldeva Stone Mine of M/s Pahaldeva Stone Mine (Prop. : Shri Subodh Kumar Singh), Village : Pahaldeva, Thana : Pipra, Distt. : Palamau, Jharkhand (2.43 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I 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, whichever 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.

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- 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 LC. 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 be submitted along with 6 monthly compliance.
- VII Ensure use of Quality EPLs 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 LC can lead to revocation / cancellation of EC.

26. Stone Mine of M/s Jai Baba Bholenath Stone Works (Partners : Shri Vikas Kumar Pathak & Others), Mouza : Pahaldeva, Thana : Pipra, Distt. : Palamau, Jharkhand (3.23 Ha).

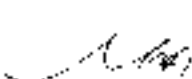
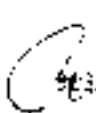
(Proposal No. SIA/JH/MIN/ 541973/2025)

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

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

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

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 120th

meeting held on 20 - 24.01.2025 and SEIAA, Jharkhand has approved the ToRs in 120th meeting held on 28th & 29th January, 2025. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/3466/2024/593, dated 07.02.2025. The final EIA / EMP submitted by PP to SEAC on 19.06.2025.

The project has been granted EC by DEIAA, Palamau vide letter no. EC/DEIAA/2016-17/05, dated 21.02.2017.

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, Palamau which has been taken up for consideration on 26.06.2025. 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 µg/m³ PM_{2.5} -567 µg/m³ SO₂ -18.2 NO₂ - 19.0 µg/m³ 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. 2669/M, dated 30.11.2024 by DMO, Palamau is within the permissible limit of EC.

Compliance report of previous EC has been issued by Member Secretary, JSPCB, Ranchi vide letter no. 1770, dated 26.06.2025.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate regarding status of execution of compliance as no details have been provided. 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- 81,000 cum/annum or 2,43,000 TPA

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Jai Baba Bholenath Stone Works
2	Lessee:	:	M/s Jai Baba Bholenath Stone Works (Partner - Sri Vikas Kumar Pathak & Others)
3	Lease Address	:	Village - Pahaldeva, Thana - Pipra, District - Palamu, State - Jharkhand
4	Lease Area	:	3.23 ha Acres- 8.00 Acres

5	Type of Land	Non-Forest (Raiyati Land)
6	Project Cost	Rs. 1.10 cr
7	EMP Budget	Capital: Rs. 11.73 Lakhs Recurring: 7.70 Lakhs/year
8	New or Expansion	New (Re-appraisal of DEIAA EC)
9	Mineable Reserves	12.25,158.00 tons 4,08,386 cum
10	Mine life	Up to the lease period i.e. 18.10.2017 to 17.10.2027.
11	Man power	30
12	Water Requirement	7.34 - 8.0KLD (Drinking: 0.31 KLD, Dust Suppression: 4.47 KLD, Plantation: 2.56 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	--
17	Nearest Habitat or	Pahaldeva, 600 meter in South direction
18	Nearest Railway Station	Jajna Railway station, Approx. 17.19 km towards NW direction.
19	Nearest Air Port	Gaya International Airport, Approx. 85.77 km towards NE direction.
20	Nearest Forest	Protected Forest: Approx. 1.5 km towards NW direction of mine site. Open mixed jungle, Approx. 3.0 km towards NW direction of mine site.
21	Road & Highways	NH-139, Approx. 7.19 km in ESE direction
22	Approach Road	Approx. 390 meter

CO-ORDINATES

Latitude	From 24°28'28.31" N	To 24°28'36.37" N
Longitude	From 84°09'23.57" E	To 84°09'32.09" E

LAND DETAILS

Khata no.	Plot no.
01	34 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	Lease deed: 18.10.2017 to 17.10.2027.
2	CO	The CO, Pipra, Palamou vide letter no. 46, dated 28.01.2016 has mentioned the plot no. of the project is not recorded as "Jungle Jhan" in R.S. Khariyan.

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3	DMO	DMO, Palamau, Medininagar vide memo no. 1451/M, dated 08.07.2024 certified that 02 other mining lease area (10.00 Acre & 6.00 Acre) exists within 500 m radius from proposed project site and total area is 24.00 Acre (9.71 Ha.).
4	DFO Wild Life	Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 311, dated 03.04.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve.
5	DFO Forest Distance	Division Forest Officer, Medininagar Forest Division vide letter no. 2147, dated 23.06.2016 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 Palamau District (Sl. no. 47, Page no. 231).
7	Gram Sabha	Gram Sabha conducted on 17.05.2016.
8	Scheme / Mine Plan Approval	Mining scheme approved by Additional Director, Geology, Hazaribagh vide Letter No. 659/G, dated 27.08.2021.
9	Previous Environmental Clearance (EC)	Previous EC granted by DEIAA, Palamau vide letter no. EC/DEIAA/2016-17/05, dated 21.02.2017.
10	Compliance report of EC	Compliance report of previous EC has been issued by Member Secretary, JSPCB, Ranchi vide letter no. 1770, dated 26.06.2025.
11	Consent to Establish (CTE)	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-1984558/2018 /172, dated 14.02.2018.
12	Consent to Operate (CTO)	CTO issued by JSPCB vide ref. no. : JSPCB/RO/RNC/CTO-17601293/2023/232, dated 30.10.2023.
13	Production Report	Production report issued by DMO, Palamau vide memo no. 2669/M, dated 30.11.2024
14	Public Hearing	Public Hearing conducted on 06.06.2025.
15	Baseline Monitoring period	October, 2024 to December, 2024.
16	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	: Open cast Semi - mechanized mining method
2	Quarry Area	: 3.23 Ha or 8.00 Acres
3	Life of Mine	: Up to the lease period i.e. 18.10.2017 to 17.10.2027
4	Waste Generation	: Total 21312.76 cum intercalated waste and 18400 cum overburden.
5	Stopping Ratio	: 01:0.9
6	Working Days	: 500
7	Bench size & No	: 6m x 6m
8	Elevation of Mine	: 216 AMSL to 236 AMSL
9	Ground Level Elevation	: 194 AMSL
10	Ultimate Working Depth	: 180 AMSL (16 mbgl)
11	Water Table	: 134-137 AMSL (59 mbgl)
12	Topography of Mine	: The lease area represents a small hillock.
13	Explosive Requirement	: 110 kg/day
14	Diesel/Fuel requirement	: 120 litre/day

Production Details

Year	Production of Stone in Tons AS per EC Letter	Production of Stone in Tons	Production of Stone in Cum	Overburden in cum	Intercalated waste in cum	Total waste in cum	Bench section
1 st	243000	242905.50	80,968.5	2880.00	4261.50	7141.50	213-207
2 nd	243000	242962.50	80,987.5	8320.00	4262.50	12582.50	231-207
3 rd	243000	242979.50	80,993.2	5280.00	4262.80	9542.80	225-213
4 th	243000	243000.12	81000.04	1920.00	4263.16	5183.16	213-207
5 th	243000	242975.60	80,993.2	0.00	4262.80	4262.80	207-207
Total	1215000	1214827.32	4,04,942.44	18400.00	21312.76	39712.76	

As per approved mine plan production: - 81000.04 cum/annum or 243000.12 TPA

As per EC letter production: - 81000 cum/annum or 243000 TPA

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Land Use

Pattern of Utilization	Present Land Use (in Ha)	After End of scheme period (in Ha)	After life of Mine (in Ha)
Quarry	1.244	2.744 (0.277 ha. area shall be backfilled)	2.744 (Entire area shall be left as water reservoir)
Road	0.301	0.060	0.060
Waste dump	Nil	Nil (waste dump to be removed and backfilled)	Nil
Safety Zone	0.426 (Plantation)	0.426 (Plantation)	0.426 (Plantation)
Crusher	Nil	Nil	Nil
Total	1.971	3.230	3.23
Unused area	1.259	0.000	0.00
Leasehold area	3.23	3.23	3.23

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/length	No. of Trees
1	Safety Zone	0.426 ha	1065 {1065 Plants have already planted during previous year.
2	Along Approach Road	390 m	780
3	No. of plants distributed with consultation local authorities /village Panchayat	--	1166

Note: A total of 3011 saplings were proposed to be planted. Out of which 1065 plant in Safety Zone area have been planted during previous year.

780 plant along approach road & 1166 plants with consultation from local authorities/village Panchayat) will be done in the first year of operation. (Total 1946 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.

Issue Wise Public Hearing Action Plan

S. No	Issue	Replied by PP	Action Plan	Cost
1.	Employment	He said that, the Employment should be provided to the local people	Representative of project proponent replied that the employment will be provided to the local people on the basis of their qualification and experience.	Remuneration will be given as per govt Norms.
2.	Plantation	Plantation will be done along the haul road and safety zone of the lease area	About 8190 trees for entire cluster has been proposed for plantation. Out of which 1475 for mine-1, 1750 for mine-2 and 1065 for mine-3 has been already planted. Rest approx 2900 plants will be planted during 1 st year of mining.	Approx 19.55 lakh has been allocated as a capital cost for plantation in for entire cluster. This will be done during 1 st year of mining.
3.	Road	Road will be repaired.	Road will be repaired and it will be maintained through out the life of mine.	Approx 13.0 Lakh has been allocated for road repair for entire cluster. Repair work will start immediately after mining operation and it will be completed within six month of start of mining operation.
4.	Dust suppression	Dust suppression will be done twice a day.	Water sprinkling will be done twice a day.	Approx 12 Lakh has been allocated for water sprinkling.

Need based SE Survey

Sr No.	Issue	Action Plan with cost
1	Employment	Employment will be provided to the local people as per their eligibility. Remuneration will be given as govt norms.

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2	Medical	Health checkup will be done twice a year in near by village. Medicine will be distributed in near by village area. A sum of Rs. 1,00,000 will be kept as separate fund.

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	--	50,000 40,000 20,000 10,000
3	Plantation	3,90,000	50,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
	As per Public Hearing		
	Planation	5,83,000	50,000
TOTAL		1173000	7,70,000

Note: *1946 plants * 500 Rs (for each plants including hedges and fences) = 9.73 lakhs

A total of 3011 saplings were proposed to be planted. Out of which 1065 plant in Safety Zone area have been planted during previous year of mining.

780 plant along approach road & 1166 plants with consultation from local authorities/village Panchayat} will be done in the first year of operation. (Total 1946 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 * 0.39 km haul road = 1,95,000/- ~ 2,00,000/-)

Air quality Location in the study area

Code	Monitoring location	Distance (km)	Direction
AAQ1	Near Project Site	-	-
AAQ2	Pipra	2.24	SE
AAQ3	Chaparbar	5.89	SE
AAQ4	Bara	5.32	NW
AAQ5	Anjima	4.60	East
AAQ6	Jharitola	8.40	NE

AAQ7	Kumbhara	1.68	West
AAQ8	Keandra Khurd	7.65	SW

Water Sampling location point in the study area

Code	Location	Surface Water	
		Distance (km)	Direction
SW1	Batane Nadi	7.58	East
SW2	Karanwar Canal	8.79	West
Ground water			
GW1	Gossin - din	0.30	SE
GW2	Pipra	2.24	SE
GW3	Anjina	4.60	East
GW4	Kumbhara	1.68	West
GW5	Bara	5.32	NW

Noise Level Monitoring Stations in the Study Area

Code	Monitoring location	Distance (km)	Direction
NQ1	Near Project Site	-	-
NQ2	Pipra	2.24	SE
NQ3	Chaparbar	5.89	SE
NQ4	Bara	5.32	NW
NQ5	Anjina	4.60	East
NQ6	Jhantola	8.40	NE
NQ7	Kumbhara	1.68	West
NQ8	Keandra Khurd	7.65	SW

Soil Sample Collection Points

Code	Monitoring location	Distance (km)	Direction
SQ1	Near Project Site	-	-
SQ2	Pipra	2.24	SE
SQ3	Chaparbar	5.89	SE
SQ4	Bara	5.32	NW
SQ5	Anjina	4.60	East

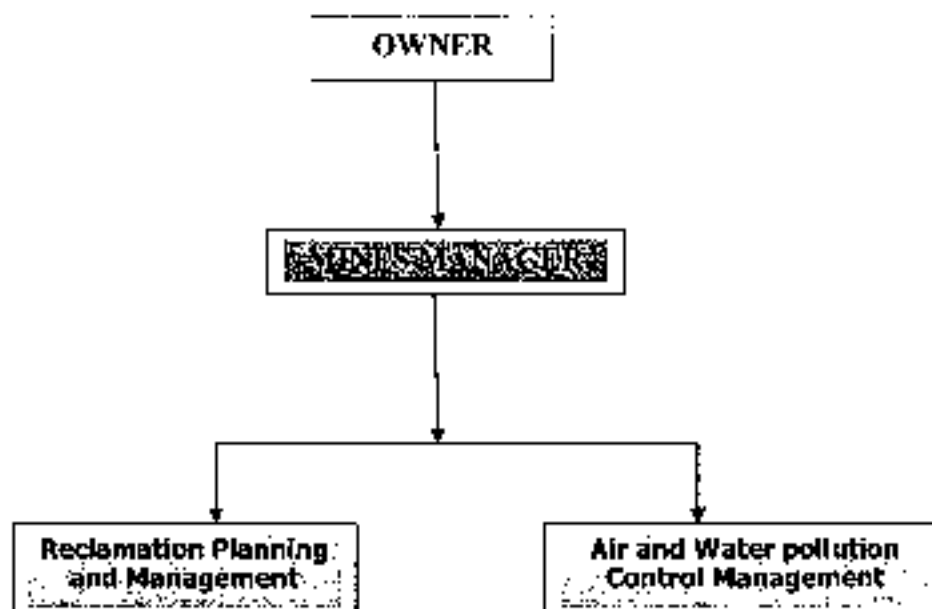
SQ6	Jharitola	8.40	NE
SQ7	Kumhara	1.68	West
SQ8	Keandra Khurd	7.65	SW

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 21312.76cum intercalated waste and 18400cum overburden will be generated during plan period. It has been calculated that total 39712.76cum waste shall be generated during this scheme period. The waste generated during the first and second year of scheme period shall be dumped in the south eastern part of the lease area with maximum height of 6m & 7m and the total waste generated during third year and waste of first and second year shall be used for backfilling of southern part of exhausted quarry with 11m height. The waste generated during the fourth and fifth year shall be used for backfilling of exhausted quarry with 11m height.



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 Pit 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
15	Very Unlikely	Has not occurred/reported within last 5 years.
12	Remote / Moderate	May occur if conditions exist. Has occurred within last 5 years.
3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.

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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, There by 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	Reinote	Minor	15

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

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- 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.

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- 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.

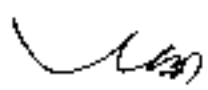
The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection 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 lesse area and on haul roads

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- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

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 Jai Baba Bholenath Stone Works (Partners : Shri Vikas Kumar Pathak & Others), Mouza : Pahaldeva, Thana : Pipra, Distt. : Palamau, Jharkhand (3.23 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I 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 Mo 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 PFT, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted 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 LC can lead to revocation / cancellation of EC.

27. Pahaldeva Stone Mine of M/s Shanti & Raj Infracon Pvt. Ltd., Village : Pahaldeva, Thana : Pipra, Distt. : Palamau, Jharkhand (4.05 Ha).

(Proposal no.: SIA/JH/MIN/ 541993 /2025)

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

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

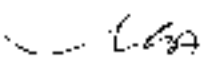
Application for Environmental Clearance (EC) after ToR (re-appraisal of Environment Clearance issued by DEIAA, Palamau).

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 119th meeting held on 17th - 22nd 12.2024 and SEIAA, Jharkhand has approved the ToRs in 119th meeting held on 30th & 31st December 2024. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/3424/3624/480 dated 04.01.2025. The final EIA / EMP submitted by PP to SEAC on 19.06.2025.

The project has been granted EC by DEIAA, Palamau vide letter no. EC/DEIAA/2016-17/15, dated 29.03.2017

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, Palamau which has been taken up for consideration on 26.05.2025. 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 µg/m³ PM_{2.5} -567 µg/m³ SO₂ -18.2 NO₂ - 19.0 µg/m³. 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. 2626 dated 26.11.2024 by DMO, Palamau is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide letter no. 1471, dated 30.11.2024.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate regarding status of execution of compliance as no details have been provided. 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- 111148 cum/annum or 300100 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Pahaldeva Stone Mine
2	Lessee:	M/s Shanti & Raj Infracon Pvt. Ltd. Director – Sri Amit Raj
3	Lease Address	Village – Pahaldeva, Thana -Pipra, District –Palamu, State – Jharkhand
4	Lease Area	4.05 ha Acres- 10.00 Acres
5	Type of Land	Non-Forest (Raiyati Land)
6	Project Cost	Rs. 1.60 cr.
7	EMP Budget	Capital: Rs. 13.05 Lakhs Recurring: 7.70 Lakhs / year
8	New or Expansion	New (Re-appraisal of DEIAA EC)
9	Mineable Reserves	2396147 tons 887461.85cum
10	Mine Life	Up to the lease period i.e. 24.10.2017 to 23.10.2027.
11	Man power	41
12	Water Requirement	11.35 ~ 12.0 KLD (Drinking: 0.41 KLD, Dust Suppression: 7.15 KLD, Plantation: 3.8 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	--
17	Nearest Habitation	650 km in ESE direction
18	Nearest Railway Station	Japla Railway Station, approx. 17.50 km towards WNW direction.
19	Nearest Air Port	Gaya International Airport approx. 85.30 km towards ENE direction
20	Nearest Forest	Protected Forest, Approx. 4.00 km in SSE direction Protected Forest, Approx. 4.70 km in East direction Protected Forest, Approx. 4.60 km in West direction
21	Road & Highway	NH 139, Approx. 7.30 km in East direction.
22	Approach Road	Approx. 700 meter

CO-ORDINATES

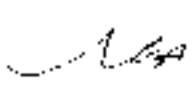
1	Latitude	From 24°28'24.42" N	To 24°28'32.10" N
2	Longitude	From 84°09'34.45" E	To 84°09'43.56" E

LAND DETAILS

Khata no.	Plot no.
01	44 (PI)

STATUTORY CLEARANCES

1	LCI / Lease deed	i. The Letter of Intent (LoI) has been issued by District Mining Officer, Palamau vide letter no. 1982/M. dated 28.09.2016 ii. Lease Deed- 24.10.2017 to 23.10.2027.
2	CO	The CO, Pipra, Palamau vide letter no. 48, dated 28.04.2016 has mentioned the plot no. of the project is not recorded as "Jungle Jhar" in R.S. Khatiyan
3	DMO	DMO, Palamau vide memo no. 1452/M. dated 08.07.2024 certified that 03 other mining lease area (12.09 Acre, 6.00 Acre & 2.00 Acre) exists within 500 m radius from proposed project site and total area is 36.09 Acre
4	DFO Wild Life	Deputy Director, Palamau Tiger Project, South Division Vedernagar vide letter no. 735 dated 10.08.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve.
5	DFO Forest	Division Forest Officer, Medininagar Forest Division vide letter no. 2581, dated 22.07.2016 certified that the distance of forest land is







	Distance	:	more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Palamau District (Sl. no. 18, Page no. 69).
7	Gram Sabha	:	Gram Sabha conducted on 23.06.2016.
8	Mine Plan Approval	:	Modification mining plan approved by Additional Director, Geology, Hazaribag vide letter no. G/2022-23-288, dated 11.10.2022.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Palamau vide letter no. EC/DEIAA/2016-17/15, dated 29.05.2017.
10	Compliance report of EC	:	FC compliance report certified by JSPCB, Regional Office, Dhurwa vide letter no. 1471, dated 30.11.2024.
11	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2017953/2018 /6, dated 04.01.2018.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide ref. no. : i. JSPCB/RO/RNC/CTO-9310207/2020/214, dated 29.12.2020. ii. JSPCB/RO/RNC/CTO-14522346/2022/243, dated 28.11.2022.
13	Production Report	:	Production report issued by DMO, Palamau vide memo no. 2626 dated 26.11.2024.
14	Public Hearing	:	Public Hearing conducted on 06.06.2025.
15	Baseline Monitoring period	:	October, 2024 to December, 2024.
16	Qualified Person	:	Shri J.P. Bhattacharya vide letter dated 19.12.2024 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast mechanized mining method
2	Lease Area	:	4.05 ha or 10.0 Acres Life of Mine – Up to the lease period i.e. 24.10.2017 to 23.10.2027.
3	Waste Generation	:	Total 24438 cum or 36657 tonnes gritty soil.
4	Stripping Ratio	:	1:0.2
5	Working Days	:	300

6	Bench: size & No	6m x 6m
7	Elevation of Mine	194 AMSL
8	Ground Level Elevation	194 AMSL
9	Ultimate Working Depth	150 AMSL (44 mbgl)
10	Water table	137-134 AMSL (57-60 mbgl)
11	Topography of Mine	Area is a very gently sloping land with mass of Granite-gneiss
12	Explosive Requirement	110 kg/day
13	Diesel/Fuel requirement	120 litre/day

Production Details

Year	Proposed Production of EC in Tons	Proposed Production of Stone in Cum	Proposed Production of Stone in Tons	Gritty Soil in Cum	Gritty Soil in tons	Bench section
1 st	300046	111128	300046	17958	26937	204-186
2 nd	300067	111134	300062	6480	9720	192-180
3 rd	300089	111144	300089	000	000	204-180
4 th	300105	111148	300100	000	000	192-174
5 th	300013	111114	300002	000	000	180-168
Total	1500320	555668	1500305	24438	36657	

As per approved mine plan production: - 111148 cum/annum or 300100 TPA

As per EC letter production: - 111150 cum/annum or 300105 TPA

Land Use

Category	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	backfill	Water body	plantation
Quarry	1.85	3.46 (including backfill 0.13 Ha)	3.46 (including backfill 0.13 Ha)		0.13	3.33	--
Safety Zone	0.59 (Plantation)	0.59 (Plantation)	0.59 (Plantation)		--	--	0.59
Road	0.06	Nil	Nil	--		--	--
Total area in use	2.50	4.05	4.05	--	0.13	3.33	0.59
Balanced	1.55	Nil	Nil		--	--	--

Unused Area							
Total Lease area	4.05	4.05	4.05	--	4.05		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.59 ha	1475 (Already done during previous year of mining)
2	Along Approach Road	700 m	1400
3	No. of plants distributed with consultation local authorities /village Panchayat	--	500

Note: A total of 3375 saplings were proposed to be planted. Out of which 1475 plant in Safety Zone area have been planted during previous year of mining.

(1400 plant along approach road & 500 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 1900 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.

Issue wise Public Hearing Action Plan

S. No.	Issue	Replied by PP	Action Plan	Cost
1.	Employment	He said that, the Employment should be provided to the local people.	Representative of project proponent replied that the employment will be provided to the local people on the basis of their qualification and experience.	Remuneration will be given as per Gov Norms.
2.	Plantation	Plantation will be done along the haul road and safety	About 8190 trees for entire cluster has been proposed for plantation.	Approx 19.55 lakh has been allocated as a capital cost for plantation in for

		zone of the lease area.	Out of which (14/5 for mine-1, 1750 for mine-2 and 1065 for mine-3 has been already planted. Rest approx 3500 plant will be planted during 1 st year of mining.	entire cluster This will be done during 1 st year of mining.
3	Road	Road will be repaired	Road will be repaired and it will be maintained through out the life of mine.	Approx 15.0 Lakh has been allocated for road repair for entire cluster. Repair work will start immediately after mining operation and it will be completed within six month of start of mining operation.
4	Dust suppression	Dust suppression will be done twice a day	Water sprinkling will be done twice a day	Approx 12 Lakh has been allocated for water sprinkling

Need based SE Survey

Sr No.	Issue	Action Plan with cost
1	Employment	Employment will be provided to the local people as per their eligibility. Remuneration will be given as gov. norms
2	Medical	Health checkup will be done twice a year in near by village. Medicine will be distributed in near by village area. A sum of Rs. 1,00,000 will be kept as separate fund

COST PROPOSED FOR EMP

Sl No	Description	Capital Cost (Rs)	Recurring Cost (Rs)
1	Pollution Control & Dust Suppression	--	4,00,000
2	Baseline Monitoring	--	50,000
	i) Air		40,000
	ii) Water		20,000
	iii) Soil		10,000
	iv) Noise		

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3	Plantation	955000	1,00,000
4	Construction and maintenance of haul road	3,50,000	1,50,000
TOTAL		13,05,000	7,70,000

Note: *1900 plants * 500 Rs (for each plants including hedges and fences) =9.55 Lakh

A total of 3375 saplings were proposed to be planted. Out of which 1475 plant in Safety Zone area have been planted during previous year of mining.

(1400 plant along approach road & 500 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 1900 Plants)

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

300* 300 = 90000/- or 1,50,000/- (including maintenance material)

*** 5.0 lakh per kilometer (500000 * 0.70 km haul road = 3,50,000/-)**

Air quality Location in the study area

Code	Monitoring location	Distance (km)	Direction
AAQ1	Near Project Site	.	.
AAQ2	Pipra	2.24	SE
AAQ3	Chaparbar	5.89	SE
AAQ4	Bara	5.32	NW
AAQ5	Anjinla	4.60	East
AAQ6	Jharitola	8.40	NE
AAQ7	Kumhara	1.68	West
AAQ8	Keandra Khurd	7.65	SW

Water Sampling location point in the study area

Code	Surface Water		
	Location	Distance (km)	Direction
SW1	Bafane Nadi	7.68	East
SW2	Karanwar Canal	8.79	West
Ground water			
GW1	Gossin - dih	0.30	SE
GW2	Pipra	2.24	SE
GW3	Anjinla	4.60	East
GW4	Kumhara	1.68	West
GW5	Bara	5.18	NW

Noise Level Monitoring Stations In the Study Area

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Code	Monitoring location	Distance (km)	Direction
NQ1	Near Project Site	-	-
NQ2	Pipra	2.34	SE
NQ3	Chaperbar	5.89	SE
NQ4	Bara	5.32	NW
NQ5	Anguria	4.60	East
NQ6	Jharitola	8.40	NE
NQ7	Kumhara	1.68	West
NQ8	Keandra Khurd	7.65	SW

Soil Sample Collection Points

Code	Monitoring location	Distance (km)	Direction
SQ1	Near Project Site	-	-
SQ2	Pipra	2.34	SE
SQ3	Chaperbar	5.89	SE
SQ4	Bara	5.32	NW
SQ5	Anguria	4.60	East
SQ6	Jharitola	8.40	NE
SQ7	Kumhara	1.68	West
SQ8	Keandra Khurd	7.65	SW

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 24438 cum or 36657 tonnes gritty soil will be generated during the plan period. The area is covered with a layer of gritty soil. During quarry development gritty soil will be removed and this will be temporary dumped at the existing dumped yard of the area with suitable precaution & during plan period total removal soil & existing dump soil will be backfill within the exhausted quarry.

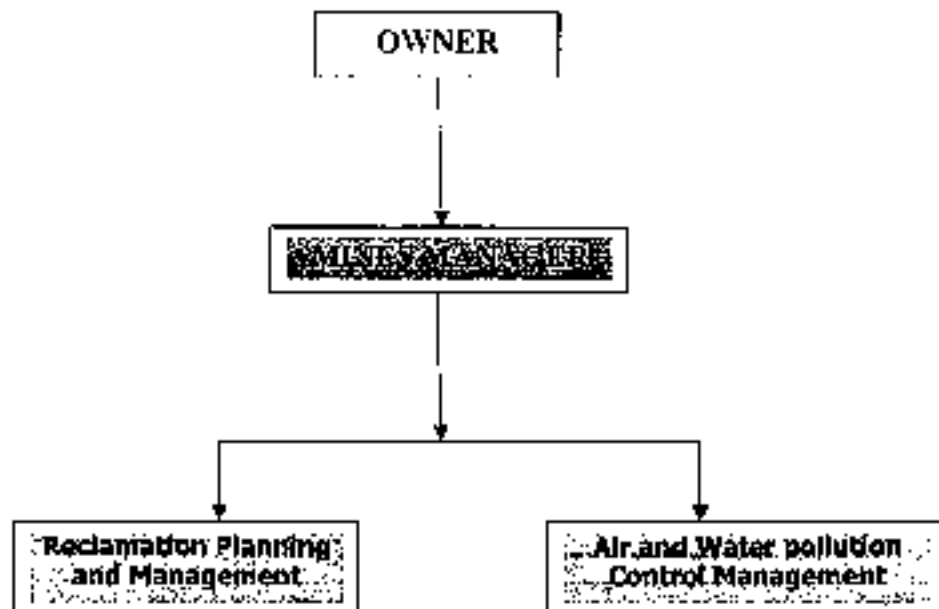
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Organization Structure

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.

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- 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 Kanha 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 once within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss. There by 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

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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 material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident,	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 free, 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.

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- 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.

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- 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 DGMSS 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.

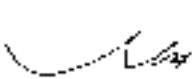
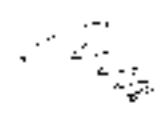
The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- 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 IS- 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.

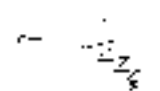
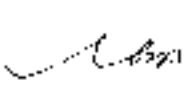
- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular 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 notified 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 machines / 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, then 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 17.12.18 decided that the proposal for Pahaldeva Stone Mine of M/s Shanti & Raj Infracon Pvt. Ltd., Village : Pahaldeva, Thana : Pipra, Distt. : Palamau, Jharkhand (4.05 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - I along with following specific conditions :

1. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, whichever is less.
2. In compliance of OM no. F.No. IA3-22/3/2014-IA III (F-241594) dated 24.07.2014 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 Mo Ka 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.

28. Kuchu Stone Deposit of M/s Shiv Stone and Crusher (Partners : Shri Ajay Kumar and Others), Village : Kuchu, Thana : Angara, Distt. : Ranchi, Jharkhand (2.335 Ha).

(Proposal no.: SIA/JH/MIN/ 541700 /2025)

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

This is a new project which has been taken for appraisal on 26.06.2025.

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

Application for Environmental Clearance (EC) after ToR as per EIA Notification, 2006.

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 119th

meeting held on 17 - 22.12.2024 and SEIAA, Jharkhand has approved the TORs in 139th meeting held on 30th & 31st December 2024. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/3439/2024/513, dated 13.01.2025. The final EIA / EMP submitted by FP to SLAC on 19.06.2025.

EC Application for: Proposed Capacity-71791 cum/annum or 201014 TPA

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Kuchu Stone Deposit
2	Lessee	M/s Shiv Stone and Crusher, (Partners: Sri Ajay Kumar & Others)
3	Lease Address	Mouza - Kuchu, Pancha Angara, District-Ranchi, State -Jharkhand
4	Lease Area	2.335 Ha Acres- 5.77Acres
5	Type of Land	Non- Forest (Raiyati Land)
6	Project Cost	Rs. 100Lakhs
7	EMP Budget	Capital Rs. 13.80 lakh Recurring, Rs. 6.0Lakh / year
8	New or Expansion	New
9	Mineable Reserves	cumulative 258872 cum tonnes, 1004812 tonnes
10	Mine Life	5 years
11	Man power	40
12	Water Requirement	9.545 ~ 9.50 KLD (Drinking: 0.40 KLD, Dust suppression 4.745 KLD, Plantation: 4.20 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	Subarnarekha River, Approx. 3.90 km towards North direction of mine site Dora Nadi, Approx. 5.45 km towards WNW direction of mine site.
17	Nearest Habitation	Approx. 0.22 km towards West direction.
18	Nearest Rail Station	Jonha Railway station, approx. 9.10 km towards SW direction
19	Nearest Air Port	Birsa Munda Airport, Ranchi, approx. 35.75 km towards WSW direction
20	Nearest Forest	Fairly Dense Mixed Jungle, Approx. 1.0 km towards NE direction of mine site Open jungle, Approx. 1.70 km towards NNW direction of mine site Open Jungle mainly sal, Approx. 3.15 km towards WSW direction of mine site Fairly Dense Mixed Jungle, Approx. 4.85 km towards SE direction of mine site
21	Road & Highways	NH-370 at Approx. 8.10 km in North direction SH-1 at Aprox. 0.40 km. in SW direction

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CO-ORDINATES

1	Latitude	From 23°25'18.36" N	To 23°25'24.35" N
2	Longitude	From 85°39'50.90" E	To 85°39'56.80" F

LAND DETAILS

Khata no.	Plot no.
99	1500 & 1502

STATUTORY CLEARANCES

1	LOI / Lease docs	The Letter of Intent (LoI) has been issued by District Mining Officer, Ranchi vide letter no. 44/M, dated 08.01.2024.
2	CO	The CO, Angara, Ranchi vide letter no. 768 (ii), dated 11.11.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyar & Register II.
3	DMO Cluster	DMO, Ranchi vide memo no. 271/M, dated 17.02.2024 certified that 02 other mining lease area (6.25 Acre & 4.67 Acre) exists within 500 meters radius from proposed project site and total area is 16.69 Acre.
4	DFO Wild Life	DFO, Wildlife Division, Ranchi vide letter no. 703, dated 16.08.2024 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. 4198, dated 02.11.2023 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 Ranchi District (Sl. no. 06, Page no. 64).
7	Gram Sabha	BDO, Angara, Ranchi vide letter no. 1511 (ii), dated 24.11.2023 informed that Gram Sabha conducted on 10.10.2023.
8	Mine Plan Approval	Approved by District Mining Officer, Ranchi vide Memo No. 1161/M, dated 03.08.2024.
9	Public Hearing	Public Hearing conducted on 14.05.2025.
10	Baseline	October, 2024 to December, 2024.

Monitoring period	
11. 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	: Open cast Mechanized Method
2	Quarry Area	: 2.335ha or 5.77 acres Life of Mine – 5Years
3	Waste Generation	: Total 8785 cum of gritty soil and 18880 cum of intercalated waste
4	Stripping Ratio	1.0:02
5	Working Days	300
6	Bench size & No	6m * 5m
7	Elevation of Mine	542 AMSL to 532AMSL
8	Ground Level Elevation	532AMSL
9	Ultimate Working Depth	up to 492 AMSL (40 mbgl)
10	Water Table	484-477 AMSL (48-55 mbgl)
11	Topography of Mine	The area represents a moderately sloping land with rock mass of Granite - gneiss
12	Explosive Requirement	110kg/day
13	Diesel/Fuel requirement	140 litre/day

Production Details

Year	Removal of Gritty Soil		Intercalated waste in cum	Production of Stone		Bench AMSL
	in cum	in tones		in cum	in tones	
1st	4582	6873	3777	71755	200915	540-528
2nd	3634	5451	3778	71778	200978	540-522
3rd	570	855	3777	71755	200915	534-516
4th	-	-	3778	71778	200978	527-510
5th	-	-	3778	71790	201014	516-492
Total	8786	13179	18880	358857	1004800	

Land Use

Pattern of Utilization	Existing (ha)	During Plan Period (ha)	During Conceptual Period (ha)
Quarry	-	1.842 (including backfilling 0.356 ha)	1.842 (Entire area left as water reservoir)
Safety Zone	-	0.493	0.493

		(Plantation)	(Plantation)
Road	0.076	--	--
Total Area In Use	0.076	2.335	2.335
Untouched Area	2.259	--	--
Total Lease Hold Area	2.335	2.335	2.335

Public Hearing (Action Plan) -

S. No.	Issue	Reply	Action Plan
1.	Employment	He said that local people should be given employment so that their migration can be stopped.	About 40 persons will be hired as per their qualifications. Remuneration will be given as Government Norms.
2.	Air Pollution	Regular water sprinkling will be done through water tankers for the prevention and control of dust pollution	Total Rs. 2.0 lakh will be spent as recurring cost for Pollution Control & Dust Suppression which has also been included in EMP Cost.
3	Water Problem	Representative of project proponent replied that the water problem will be resolved	Installation of 02 Hand Pump with deep boring for water facility will be done for which total Rs. 1.3 lakh will be spent as capital cost and Rs 0.30 lakh will be spent as recurring cost which has also been included in EMP Cost. Hand pump will be installed in the 1st year of mining operation.
4	Plantation	Representative of project proponent replied that plantation will be done on approach road as well in safety zone of the Lease area.	2100 number of plantation will be done. Process of plantation will be begin in 1st year of the mining and it will be completed in the 2nd Year of the mining. A sum Rs. 10.50 Lakh will be spent as capital cost and Rs. 1.0 Lakh will be spent as recurring cost for plantation which has also been included in EMP cost.
5	Blasting	Controlled blasting will be done. Blasting will be done between 1 PM to 2 PM only.	Total Rs. 2.0 lakh will be spent as recurring cost for Pollution Control & Dust Suppression which has also been included in EMP Cost.

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ENVIRONMENT MANAGEMENT**Green Belt Development**

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.493 ha	1240
2	Along Approach Road	380 m	760
	No. of plants distributed with	--	100
2	consultation local authorities		
	/village Panchayat		

- Gab on 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 P.O.E. 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		50,000
	ii) Water		40,000
	iii) Soil		20,000
	iv) Noise		10,000
3	Plantation	10,50,000	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
Suggestions As per Public Hearing			
5	Drinking water facilities (Installation of Hand pump with deep boring) at public place in village	1,30,000	30,000
TOTAL		13,80,000	6,00,000

Note: *2100 plants * 500 Rs (for each plants including hedges and fences) = Rs. 10.50 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 * 0.38 km haul road = 1,90,000/- or 2,00,000/-)

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Location of Ambient Air Quality Monitoring Stations

Code	Monitoring location	Distance (km)	Direction
AAQ1	Project Site	-	-
AAQ2	Saljandih	3.12	SE
AAQ3	Goradih	9.20	SE
AAQ4	Jaradih	3.40	South
AAQ5	Bariatu	8.10	North
AAQ6	Obar	3.30	West
AAQ7	Jaratoli	8.05	SW
AAQ8	Jaintebera	5.04	NE

Water sampling locations

Surface Water			
Location ID	Location name	Distance (Km)	Direction
SW1	Subarnarekha River	3.00	North
SW2	Kolya Dam	8.90	North
SW3	Raru River	9.60	South
Ground water			
GW1	Saljandih	3.12	SE
GW2	Goradih	9.20	SE
GW3	Jaradih	3.40	South
GW4	Obar	3.30	West
GW5	Jaratoli	8.05	SW

Noise Level Monitoring Stations in the study area

Code	Monitoring location	Distance (km)	Direction
NQ1	Project Site	-	-
NQ2	Saljandih	3.12	SE
NQ3	Goradih	9.20	SE
NQ4	Jaradih	3.40	South
NQ5	Bariatu	8.10	North
NQ6	Obar	3.30	West
NQ7	Jaratoli	8.05	SW
NQ8	Jaintebera	5.04	NE

Soil Sample Collection Points

Code	Monitoring location	Distance (km)	Direction
SQ1	Project Site	-	-
SQ2	Saljandih	3.12	SE







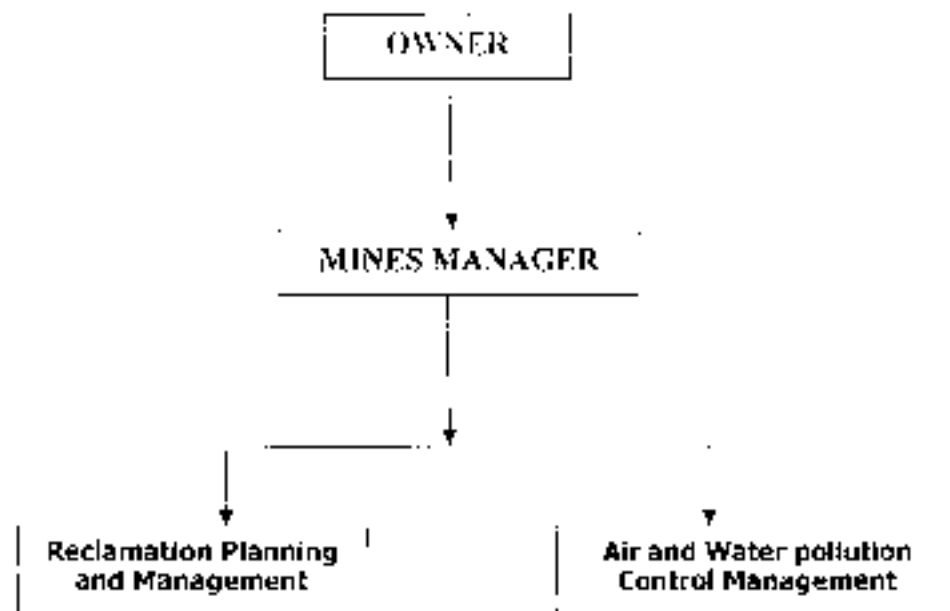
SQ3	Geradih	9.20	SE
SQ4	Geradih	3.40	South
SQ5	Bariatu	8.10	North

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	2 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 8786 cum of gritty soil and 18889 cum of intercalated waste shall be generated during this plan Period. During quarry development in 1st year gritty soil and intercalated waste will be removed and this soil & waste will be temporarily dumped at the north west part of the area with suitable precautions like parapet wall, garland drain & in 2nd year removed gritty soil & intercalated waste & existing temporarily dumped soil will be temporarily backfilled within the exhausted quarry & in 3rd & 4th year removed gritty soil & intercalated waste will be temporarily backfilled within the exhausted quarry & in 5th year removed intercalated waste & total temporarily backfill soil will be backfilled within lower three bench of the exhausted quarry.



Organization Structure

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Water Quality Management

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

Air Quality Management

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

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

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

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

Severity/Impact Intensity

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

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12

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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 105(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.

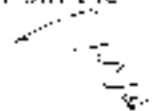
Control Measures

- 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

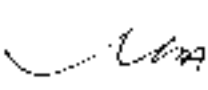
Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

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.

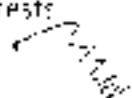
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained
- i. If any tree felling then necessary permission shall be taken from the competent authority
- j. Slope of the Water bodies to be stabilized using gaoon 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 Kuchu Stone Deposit of M/s Shiv Stone and Crusher (Partners (i) Shri Ajay Kumar (ii) Shri Sathish Prasad (iii) Shri Monu Kumar, Village : Kuchu, Thana : Angara, Distt. : Ranchi, Jharkhand (2.335 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. In compliance of OM no. F.No. IA2 22/3/2024 A.III (E 241504) dated 21.07.2024 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 Bin 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 PFTT, 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.**

29. Siyalpahari Stone Deposit of Shri Atmanand Upadhyay, Village : Siyalpahari, Anchal : Shikaripara, Distt. : Dumka, Jharkhand (2.89 Ha).

(Proposal no.: SIA/JH/MIN/ 540704 /2025)

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

This is a new project which has been taken for appraisal on 26.06.2025.

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- 134055 cum/year or 361948 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Siyalpahari Stone Deposit
2	Lessee:	: Sri Atmanand Upadhyay At Village + P.O.- Rampur Kala, Thana - Khaira, District - Saran, State - BiharPin Code - 841414
3	Lease Address	: Village - Siyalpahari, Anchal - Shikaripara, District - Dumka, State - Jharkhand
4	Lease Area	: 2.89 Ha Acres- 7.15Acres
5	Type of Land	: Non- Forest (Raiyati Land)
6	Project Cost	: Rs. 80Lakhs
7	EMP Budget	: Capital: Rs. 10.15 lakhs : Recurring: Rs. 5.70Lakh/year
8	New or Expansion	: New
9	Mineable Reserves	: cum.:670132cum Tonnes:1809355 tones
10	Mine Life	: 5years

11	Man power	: 48
12	Water Requirement	: 6.98 ~ 7.00 KLD (Drinking: 0.48 KLD, Dust Suppression: 3.24 KLD, Plantation: 3.26 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	: Bramani River, Approx. 7.58 km. in North direction of mine site
17	Nearest Habitation	: Partabpur, Approx. 0.5 km in East direction.
18	Nearest Rail Station	: Pinargaria Railway station, approx. 4.97 km towards NNW direction
19	Nearest Air Port	: Deoghar Airport, approx. 100.95 km towards WNW direction
20	Nearest Forest	: Protected Forest, Approx. 4.50 km in NE direction of mine site. Protected Forest, Approx. 7.98 km in SSW direction of mine site
21	Road & Highways	: NH-114A, Approx. 3.20 km in North direction.
22	Approach Road	: Approx 90 meter

CO-ORDINATES

1	Latitude	From 24°39'57.82"N	To 24°10'5.83"N
2	Longitude	From 87°59'15.55"E	To 87°39'21.82"E

LAND DETAILS

Khata no.	Plot no.
07 & 08	127, 128 (P), 129 (P), 130, 131 & 132 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	The Letter of Intent (LOI) has been issued by District Mining Officer, Dumka vide letter no. 467/M, dated 04.03.2025.
2	CC	The CC, Shikaripara vide letter no. 159/Ra, dated 27.02.2025 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register I.
3	DMO Cluster	DMO, Dumka vide memo no. 659/M, dated 06.05.2025 certified that 22 other mining lease area (5.88 Acre & 5.01 Acre) and 03 Lo (7.16 Acre, 4.358 Acre & 4.36 Acre) exists within 500 m radius from proposed project site and total area is 34.918 Acre.
4	DFO Wild Life	DFO, Wildlife Division, Hazaribag vide letter no. 299, dated 25.02.2025 certified that the proposed project site is outside Eco

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		Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	Divisional Forest Officer, Dumka Forest Division vide letter no. 867, dated 16.04.2025 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. 732/M, dated 24.05.2025 that this project is mentioned in approved DSR of Dumka District as a potential area (Page no. 318, Sl. No. 78).
7	Gram Sabha	Gram Sabha conducted on 22.01.2025.
8	Mine Plan Approval	Approved by DMO, Dumka vide Letter No. 650/M, dated 30.04.2025.
9	Baseline Monitoring Period	March 2025 to May 2025
10	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	Lease Area	:	2.89ha	Life of Mine – 5Years
3	Waste Generation	:	Total 35268 cum intercalated waste & 29498 cum Gritty soil during the plan period	
4	Stripping Ratio	:	1: 0.09	
5	Working Days	:	300	
6	Bench: size & No	:	6m to 6m	
7	Elevation of Mine	:	66 AMSL to 63 AMSL	
8	Ground Level Elevation	:	63 AMSL	
9	Ultimate Working Depth	:	Up to 24 AMSL (39 m BGL)	
10	Water Table	:	16-18 AMSL (45-47m BGL)	
11	Topography of Mine	:	The applied lease area represents a small hilllock,	
12	Explosive Requirement	:	110kg/day	
13	Diesel/Fuel requirement	:	110 litre/day	

Production Details

Year	Production of stone		Intercalated waste in cum	Removal of gritty soil		Bench RL
	in cum	in ton		in cum	in ton	
1 st Year	133950	361665	7050	16485	24728	66-54
2 nd Year	134019	361852	7054	13013	19520	66-48
3 rd Year	134054	361946	7055	000	000	54-42
4 th Year	134055	361948	7056	000	000	48-36
5 th Year	133993	361781	7052	000	000	42-24
Total	670071	1809197	35268	29498	44248	

Land Use

Land Utilization	Existing Land use (Ha.)	At the end of plan period (Ha.)	At Conceptual period (Ha.)	Conceptual period (in ha.)		
				Public use	Water body	plantation
Quarry	Nil	2.35 (including backfilling 0.936 ha.)	2.25 (including backfilling 0.936 ha.)	-	2.35	-
Greenbelt Within Safety Barrier	Nil	0.54	0.54	-	-	0.54
Road	0.067	Nil	Nil	-	-	-
Temporary dump	0.519	Nil	Nil	-	-	-
Total Area In Used	0.586	2.89	2.89	-	2.35	0.54
Balanced Area Unused	2.304	Nil	Nil	-	-	-
Total Applied Area	2.89	2.89	2.89	-	2.89	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.54 ha	1350
2	Along Approach Road	90 m	180
3	No. of plants distributed with consultation local authorities		100

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	/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	--	2,00,000
2	Baseline Monitoring	--	
	i) Air		50,000
	ii) Water		40,000
	iii) Soil		20,000
	iv) Noise		10,000
3	Plantation	8,15,000	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
TOTAL		10,15,000	5,70,000

*Note: *1630 plants * 500 Rs (for each plants including hedges and fences)= 8.15 lakh*

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

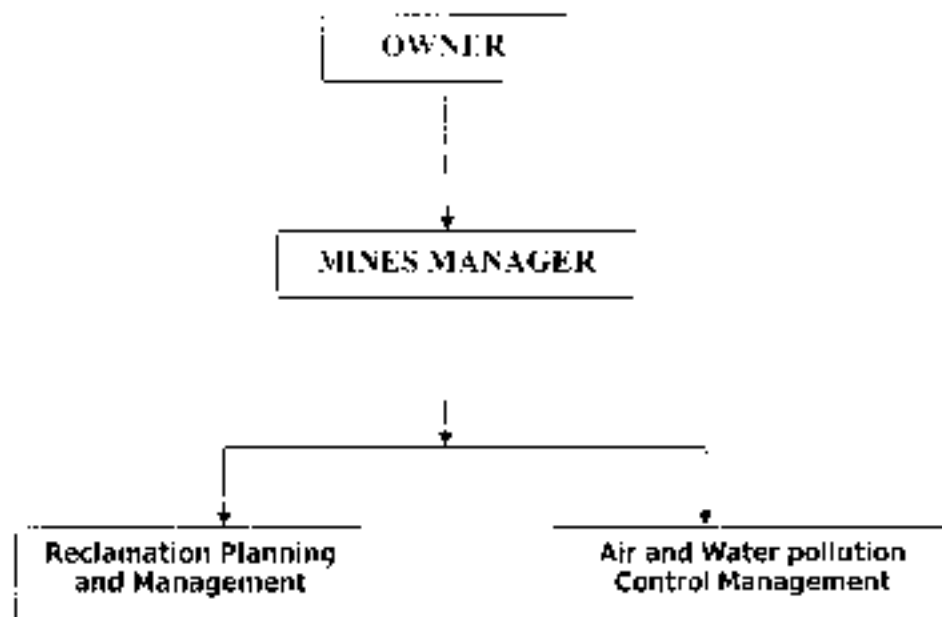
300 300 = 90,000/- or 1,50,000/- (including maintenance)*

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 35268 cum intercalated waste & 29498 cum Gritty soil 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.



Organization Structure

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is like y, 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 p.t. 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.

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- 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, There by 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	Probable	Moderate	6

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		(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

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 drilling 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

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- 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

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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
- Overtaking 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

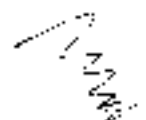
The usual method of transporting minerals from the working face is by trucks / trappers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator 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.

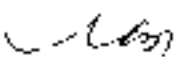
- Mine road shall be made smooth regularly with a road roller
- Mine road will be cleaned daily to remove fallen rock/cones for smooth transportation
- Mine road will be made sufficiently wide to keep two-way traffic
- Mine roads will be designed as per the specifications given under MVA 1961
- Regular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

 C. S. S.





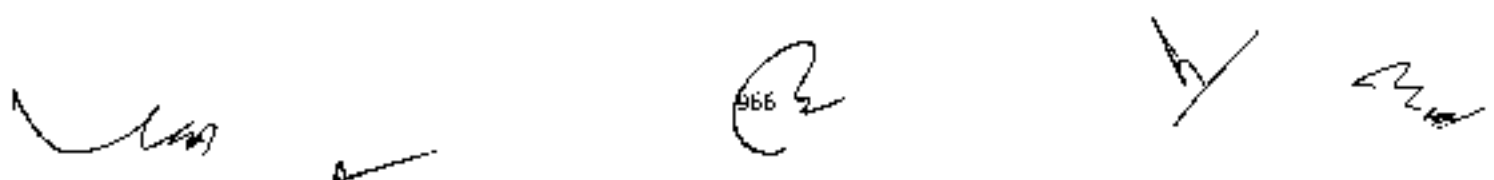




- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are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

Based on the Information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.06.2025, 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 I) 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.



Day 5 : June 27th, 2025 [Friday]

A. Any other matter :

- i. Stone Mines of M/s Shri Vinayak Construction at Village : Rewaratu, Tehsil : Satbarwa, Distt. : Palamau, Jharkhand (9.50 Ha).

The EC was granted to the above project vide EC letter no. EC/SEIAA/2016-17/1987/2016/130, dated 05.06.2018.

A complaint was received from Falak Khan, Rewaratu, Thana : Lesliganj, Anchal : Satbarwa, Palamau vide his letter addressed to Member Secretary, SEIAA received on 06.12.2024 stating that the said mine lease area belongs to Jungel-Jhari.

Accordingly, a letter was sent to the Deputy Commissioner, Palamau vide letter no. 544, dated 28.01.2025 from the Member Secretary, SEIAA requesting for verification of the contents of the complaint letter.

The EC was also kept in abeyance.

Now the Deputy Commissioner, Palamau vide memo no. 1363, dated 26.05.2025 addressed to Member Secretary, SEIAA has clarified that the mine lease area does not falls under Jungle – Jhari category and also stated that the complaint is baseless.

Hence, it is recommended for reinstatement of the EC letter no. EC/SEIAA/2016-17/1987/2016/130, dated 05.06.2018.

- ii. As per communication received from Chairman, SEIAA for addressing the comments given by the DFO, Sahibganj regarding man-animal conflict while issuing the distance certificate.

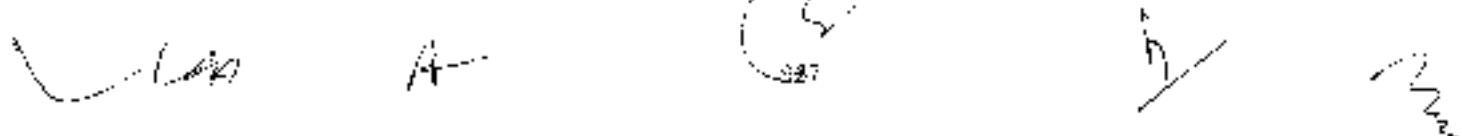
The remarks is as follows :

"..... The operation of large-scale stone quarrying and crushing activities is causing significant hindrance to the movement of wild animals in general, and elephants in particular, which may lead to an increase in man-animal conflict."

The PAs have stated that their project falls under Category B2 (small project) and they are not competent & empowered to prepare and implement extensive measures independently to mitigate and prevent potential man-animal conflicts in the region. It is also not economically viable for them to prepare such mitigation plan & its implementation independently. It may also be noted that their project is proposed on raiyat land & outside of the forest land.

Further, they have provided an undertaking that if any such mitigation plan is prepared and implemented by the concern DFO, they will contribute their share of the funds, to the extent of their CSR budget on demand by the DFO.

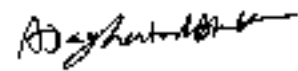
Accordingly, SEIAA may write to the DFO, Sahibganj to prepare an action plan, if needed, to prevent man-animal conflict in the region.

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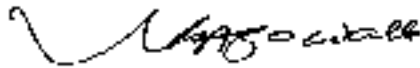
The meeting concluded with thanks to all present.

ABSENT

Ashok Kumar Dubey, IFS (Retd.)
Member



Dr. Ajay Govind Bhatt
Member



Niranjan Lal Agarwalla
Member



Dr. Raju Kumar
Member



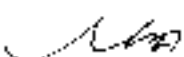
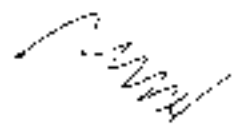
Srikant Verma, IFS
Member Secretary



Ashok Kumar Singh, IFS (Retd.)
Chairman

I. Statutory compliance

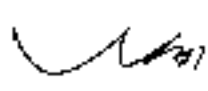
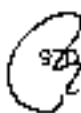
- i. This Environmental Clearance (EC) is subject to orders/ judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble Nisi and any other Court of Law, Common Cause Conditions as may be applicable.
- ii. In the writ petition (Civil) no. 202/1995, Union of India and ors. The Hon'ble Supreme 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 proscribed in the guidelines of 08th February, 2011 shall be strictly adhered to."
- iii. The Project Proponent complies with all the statutory requirements and judgment 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 Judgment 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 NEWL 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-IAJ (M), dated 29th October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area".
- xii. The Project Proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and from CGWA for withdrawal of ground water for the project.
- xiii. A copy of EC letter will be marked to concerned Panchayat / local NGO etc. if any, from whom suggestion / representation has been received while processing the proposal.
- xiv. State Pollution Control Board/Committee shall be responsible for display of this EC letter at its Regional office, District Industries Centre and Collector's office/ Tehsildar's Office for 30 days.
- xv. The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded EC and copy of the EC letter is available with the State Pollution Control Board/Committee and web site of the Ministry of Environment, Forest and Climate Change ([www. Environment clearance.nic.in](http://www.Environmentclearance.nic.in)). A copy of the advertisement may be forwarded to the concerned MoEF& CC Regional Office for compliance and record.
- xvi. The Project Proponent shall inform the MoEF&CC for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred than mining operation shall only be carried out after transfer of EC as per provisions of the para 11 of EIA Notification, 2006 as amended from time to time.

II. Air quality monitoring and preservation

- i. The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an

angle of 120° is made between the monitoring locations to monitor critical parameters, relevant for mining operations, of air pollution viz. PM10, PM2.5, NO2, CO and SO2 etc. as per the methodology mentioned in NAAQS Notification No. E-29016/20/90/PCLT, dated 18.11.2008 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, metal-laid road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM10 and PM2.5 are evident such as haul road, loading and unloading point and transfer points. The fugitive dust emissions from all sources shall be regularly controlled by installation of required equipment/ 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 natural 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 and around the village, should not be disturbed. The Water Table should be monitored so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug well located in village should be incorporated to ascertain the impact of mining over ground water table. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry CGWA and State Groundwater Department / State Pollution Control Board.
- iii) Project Proponent shall regularly monitor and maintain records with 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.

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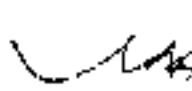
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in consultation with Central Ground Water Authority/ State Ground Water Department. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / 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-IA/JI (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

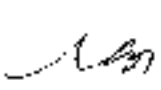
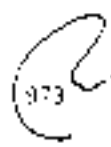
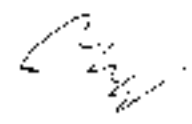
IV. Noise and vibration monitoring and prevention

- 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/ marks 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 HFMML, etc. should be provided with ear plugs /muffs. All personnel including learners working in dusty areas shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. The PP shall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.

V. Mining Plan

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 of Short Term Permit (STP), Query license or any other name.

- iv. 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.

- vi Check dams of appropriate size, gradient and length shall be constructed around mine pit and CB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of such 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-

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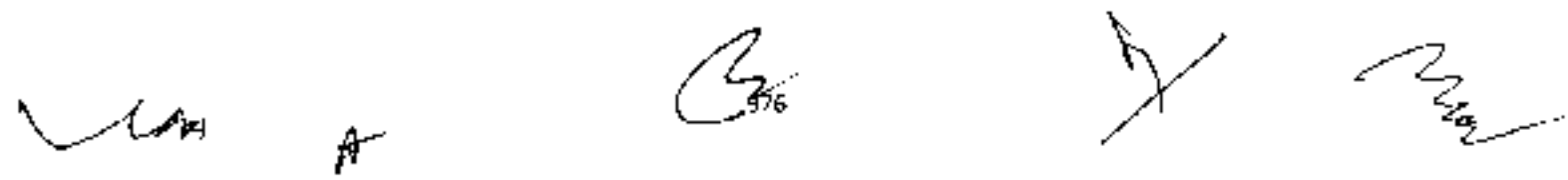
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conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.

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, if any found or reported by the competent authority. 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. If any Wild Life Conservation Plan is prepared as per above clause no. iv, it shall be 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.

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IX. Public hearing and human health issues

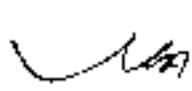
- i. The Project Proponent shall appoint an Occupational Health Specialist for Regular as well as Periodical medical examination of the workers engaged in the mining activities, as per the DGMS guidelines. The records shall be maintained properly. PP shall also carryout Occupational health check-ups 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 NABL. 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 ILC 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.

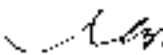
X. Corporate Environment Responsibility (CER)

- 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 closure 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 (a) 1051 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 (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 R.O. 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 the 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.



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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.

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- 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 RI / PI 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 REI species duly authenticated, separately for core and

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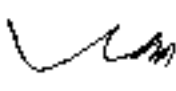
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buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled- I fauna found in the study area, the necessary plan alongwith budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.

- xix. Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.
- xx. Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).
- xxi. R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.
- xxii. One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)]primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the FIA and FMP 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



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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 aquifer. 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

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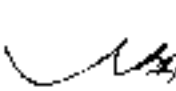
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network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies 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 :-

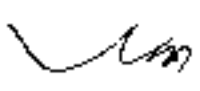


- a) Executive Summary of the EIA/EMP Report
 - b) All documents to be properly referenced with index and continuous page numbering
 - c) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated
 - d) Project Proponent 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 PH process) will entail conducting the PH again with the revised documentation
 - i) As per the circular no. J 11011/612/2010 A, 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
- xiv. After preparing the draft LIA (as per the generic structure prescribed in Appendix III of the LIA 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.
- xv. 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

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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 Thrumulpad 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 ECRC/FCRC-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.



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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.

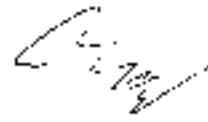
- xii. Provision of drinking water, waste water disposal, solid wastes management and primary health facilities shall be ensured for labour force. Proper sanitation facilities shall be provided at the construction site to prevent health related problems. Domestic as well as sanitary wastes from construction camps shall be cleared regularly.
- xv. All the labourers to be engaged for construction works shall be screened for health and adequately treated before issue of work permits. The contractor shall ensure periodic health check-up of construction workers.
- xv. All vehicles/equipment deployed during construction phase shall be ensured in good working condition and shall conform to applicable air and noise emission standards. These shall be operated only during non-peak hours.
- xvi. Accumulation/stagnation of water shall be avoided ensuring vector control.
- xvii. Water during construction phase should be preferred from Municipal supply.
- xviii. Unskilled construction labourers shall be recruited from the local areas.
- xix. Monitoring of ground water table and quality once in three months shall be carried out. Construction of tube wells, bore wells shall be strictly regulated.
- xx. Adequate provision shall be made to cater the parking needs. Parking spaces standards as given in "Manual on Norms and Standards for Environmental Clearance of Large Construction Projects" issued by Ministry of Environment and Forests, Government of India shall be adopted.
- xxi. Rest room facilities shall be provided for service population.
- xxii. Water body falling within premises (if any) shall not be lined or no embankment shall be cemented. The water bodies, if any, shall be kept in natural conditions without disturbing the ecological habitat.
- xxiii. Construction shall conform to the requirements of local seismic regulations. The project proponent shall obtain permission for the plans and designs including structural design, standards and specifications of all construction work from concerned authority.

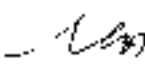
II. Air quality monitoring and preservation

- i. Notification GSR 94(E) dated 25.01.2018 of MoEF&CC regarding Mandatory Implementation of Dust Mitigation Measures for Construction and Demolition Activities for projects requiring Environmental Clearance shall be complied with.
- ii. A management plan shall be drawn up and implemented to contain the current exceedance in ambient air quality at the site.
- iii. The project proponent shall install system to carryout Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants.

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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, murrum and other construction materials prone to causing dust pollution at the site as well as taking out debris from the site.
- vi. Sand, murrum, 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

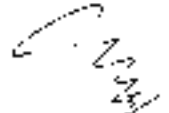
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other sustainable urban drainage systems (SUDS) are allowed for maintaining the drainage pattern and to harvest rain water

- i. Buildings shall be designed to follow the natural topography as much as possible. Minimum cutting and filling should be done.
- ii. Total fresh water use shall not exceed the proposed requirement as provided in the project details.
- iii. 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.
- iv. 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.
- v. 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.
- vi. 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.
- vii. Use of water saving devices/ fixtures (viz. low flow flushing systems, use of low flow faucets fan 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, 2010. 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

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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.



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- 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.

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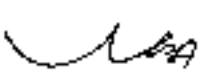
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- iii. Separate wet and dry bins must be provided in each unit and at the ground level for facilitating segregation of waste. Solid waste shall be segregated into wet garbage and inert materials.
- iv. Organic waste compost/ Vermiculture pit/ Organic Waste Converter within the premises with a minimum capacity of 0.3 kg /person/day must be installed.
- v. All non-biodegradable waste shall be handed over to authorized recyclers for which a written tie up must be done with the authorized recyclers.
- vi. Any hazardous waste generated during construction phase, shall be disposed off as per applicable rules and norms with necessary approvals of the State Pollution Control Board.
- vii. Use of environment friendly materials in bricks, blocks and other construction materials, shall be required for at least 20% of the construction material quantity. These include Fly Ash bricks, hollow bricks, AACs, Fly Ash Lime Gypsum blocks, Compressed earth blocks, and other environment friendly materials.
- viii. Fly ash should be used as building material in the construction as per the provision of Fly Ash Notification of September, 1999 and amended as on 27th August, 2003 and 25th January, 2016.. Ready mixed concrete must be used in building construction.
- ix. Any wastes from construction and demolition activities related thereto shall be managed so as to strictly conform to the Construction and Demolition Rules, 2016.
- x. Used CFLs and TFLs should be properly collected and disposed off/sent for recycling as per the prevailing guidelines/ rules of the regulatory authority to avoid mercury contamination.

VII. Green Cover

- i. No tree can be felled/transplant unless exigencies demand. Where absolutely necessary, tree felling shall be with prior permission from the concerned regulatory authority. Old trees should be retained based on girth and age regulations as may be prescribed by the Forest Department. Plantations to be ensured species (cut) to species (planted).
- ii. A minimum of 1 tree for every 80 sqm of land should be planted and maintained. The existing trees will be counted for this purpose. The landscape planning should include plantation of native species. The species with heavy foliage, broad leaves and wide canopy cover are desirable. Water intensive and/or invasive species should not be used for landscaping.
- iii. Where the trees need to be cut with prior permission from the concerned local Authority, compensatory plantation in the ratio of 1:10 (i.e. planting of 10 trees for every 1 tree that is cut) shall be done and maintained. Plantations to be ensured species (cut) to species (planted). Area for green belt development shall be provided as per the details provided in the project document.



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- 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 (USDPII), 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 S.P, 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.



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- 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



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Ministry of Environment, Forest and Climate Change at environment clearance portal.

- v. The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
- vi. The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.
- vii. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
- viii. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
- ix. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).
- x. Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
- xi. The Ministry / SEIAA / SEAC may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
- xii. The Ministry / SEIAA / SEAC reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
- xiii. It shall be mandatory for the project management to submit six (06) monthly compliance report in respect of the stipulated prior environmental clearance terms and conditions in hard copies and soft copies to the regulatory authority concerned Regional Office of MoEF & CC at Ranchi and Jharkhand State Pollution Control Board (J.S.P.C.B.), Ranchi / PCB / SEIAA.
- xiv. The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.
- xv. Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under section 10 of the National Green Tribunal Act, 2010.
- xvi. The Prescribed EC is valid as per Notification no. S.O. 1807(E) dated 12/04/2022 of MoEF&CC, Govt. of India.

