MINUTES OF THE 117TH MEETING OF STATE LEVEL EXPERT APPRAISAL COMMITTEE (SEAC), JHARKHAND HELD ON 27TH, 28TH, 29TH, 30TH SEPTEMBER, 2024 AND 01ST OCTOBER, 2024.

The 117th meeting of State Level Expert Appraisal Committee (SEAC), Jharkhand was held on 27th, 28th, 29th, 30th September, 2024 and 01st October, 2024 under the Chairmanship of Shri Ashok Kumar Singh, IFS (Retd.) in the Conference Room at SEAC, Ranchi.

The following members were present:

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

SEIAA forwarded various projects to the SEAC for the technical appraisal after the last SEAC meeting held on 23rd, 24th & 25th August, 2024. These projects have been put up for discussions. Besides, these Projects, wherein PP's were asked to provide requisite information / clarifications in the earlier meeting of SEAC, were also considered for appraisal. The Project Proponents have been asked to make technical presentation for the appraisal of their projects before the committee.

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

Day 1 : September 27th, 2024 [Friday]

A. Matter referred by SEIAA regarding inspection and monitoring of Remediation Plan and submit the report to SEIAA for release of Bank Guarantee submitted by Project Proponent to Jharkhand State Pollution Control Board (JSPCB).

i. **"Proposed Multistoried Apartment" of M/s Oceanic Buildtech & Construction Pvt. Ltd., Village : Argora, Thana : Argora, Thana no. : 207, Tehsil : Argora, Dist. : Ranchi, Jharkhand.**

The Project Authority did not appear for consideration during the SEAC meeting.

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ii. **P & M Hi-Tech City Centre Mall of M/s P & M and Hi-Tech Infrastructures LLP at Mauza : Jugsalai, Tehsil : Dhalbhum, Dist. : East Singhbhum, Jharkhand.**

The Chief Administrative Officer, P & M Hi Tech City Centre Mall vide e-mail dated 27.09.2024 requested for deferment of consideration.

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B. District Magistrate –cum- Deputy Commissioner, Dumka or through authorized representative.

i. **District Survey Report (DSR) for Minor Minerals other than Sand Mining or River Bed Mining (Stone), Distt. Dumka.**

The Final DSR was submitted by Deputy Commissioner, Dumka. He was represented by Shri Anand Kumar, District Mining Officer, Dumka at the SEAC meeting on 27.09.2024.

During the meeting the DMO, Dumka presented the DSR before the Committee. The DSR was appraised in light of S.O. no. 3611 (E), dated 25.07.2018 of MoEF&CC, Govt. of India.

The final DSR had been placed in the public domain for 21 days from the 09.07.2024. As per the Sub Divisional Committee no comments / observations were obtained.

The DSR has been prepared as per the format provided in the above notification. The DSR submitted has been approved by the Sub-Divisional Committee. All the aspects of the notification dated 25.07.2018 are incorporated in the DSR and found to be satisfactory.

Hence, the final DSR for Minor Minerals other than Sand Mining or River Bed Mining (Stone) of District Dumka is recommended to SEIAA for approval.

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C. Deputy Commissioner, Seraikela-Kharsawan or through authorized representative.

i. **District Survey Report (DSR) for Minor Minerals other than Sand Mining or River Bed Mining (Stone), Distt. Seraikela-Kharsawan.**

The Final DSR was submitted by Deputy Commissioner, Seraikela-Kharsawan. He was represented by Shri Jyoti Shankar Satapathy, District Mining Officer, Seraikeal-Kharsawan at the SEAC meeting on 27.09.2024.

During the meeting the DMO, Seraikela-Kharsawan presented the DSR before the Committee. The DSR was appraised in light of S.O. no. 3611 (E), dated 25.07.2018 of MoEF&CC, Govt. of India.

The final DSR had been placed in the public domain for 21 days from the 19.07.2024. As per the Sub Divisional Committee no comments / observations were obtained.

The DSR has been prepared as per the format provided in the above notification. The DSR submitted has been approved by the Sub-Divisional Committee. All the aspects of the notification dated 25.07.2018 are incorporated in the DSR and found to be satisfactory.

Hence, the final DSR for Minor Minerals other than Sand Mining or River Bed Mining (Stone) of District Seraikela-Kharsawan is recommended to SEIAA for approval.

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D. Deputy Commissioner, Hazaribag or through authorized representative.

i. District Survey Report (DSR) for Minor Minerals other than Sand Mining or River Bed Mining (Stone), Distt. Hazaribag.

The Final DSR was submitted by Deputy Commissioner, Hazaribag. He was represented by Shri Ajit Kumar, District Mining Officer, Hazaribag at the SEAC meeting on 27.09.2024.

During the meeting the DMO, Hazaribag presented the DSR before the Committee. The DSR was appraised in light of S.O. no. 3611 (E), dated 25.07.2018 of MoEF&CC, Govt. of India.

The final DSR had been placed in the public domain for 21 days from the 08.08.2024. As per the Sub Divisional Committee no comments / observations were obtained.

The DSR has been prepared as per the format provided in the above notification. The DSR submitted has been approved by the Sub-Divisional Committee. All the aspects of the notification dated 25.07.2018 are incorporated in the DSR and found to be satisfactory.

Hence, the final DSR for Minor Minerals other than Sand Mining or River Bed Mining (Stone) of District Hazaribag is recommended to SEIAA for approval.

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E. District Magistrate –cum- Deputy Commissioner, Jamtara or through authorized representative.

i. District Survey Report (DSR) for Minor Minerals other than Sand Mining or River Bed Mining (Stone & Earth Work), Distt. Jamtara.

The Final DSR was submitted by Deputy Commissioner, Jamtara. He was represented by Shri Dilip Kumar, District Mining Officer, Jamtara at the SEAC meeting on 27.09.2024.

During the meeting the DMO, Jamtara presented the DSR before the Committee. The DSR was appraised in light of S.O. no. 3611 (E), dated 25.07.2018 of MoEF&CC, Govt. of India.

The final DSR had been placed in the public domain for 21 days from the 10.11.2023. As per the Sub Divisional Committee no comments / observations were obtained.

The DSR has been prepared as per the format provided in the above notification. The DSR submitted has been approved by the Sub-Divisional Committee. All the aspects of the notification dated 25.07.2018 are incorporated in the DSR and found to be satisfactory.

Hence, the final DSR for Minor Minerals other than Sand Mining or River Bed Mining (Stone & Earth Work) of District Jamtara is recommended to SEIAA for approval.

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F. Deputy Commissioner, Chatra or through authorized representative.

i. District Survey Report (DSR) for Minor Minerals other than Sand Mining or River Bed Mining (Stone & Earth Work), Distt. Chatra.

The Final DSR was submitted by Deputy Commissioner, Chatra. He was represented by Shri Manoj Toppo, District Mining Officer, Chatra at the SEAC meeting on 27.09.2024.

During the meeting the DMO, Chatra presented the DSR before the Committee. The DSR was appraised in light of S.O. no. 3611 (E), dated 25.07.2018 of MoEF&CC, Govt. of India.

The final DSR had been placed in the public domain for 21 days from the 02.12.2023. As per the Sub Divisional Committee no comments / observations were obtained.

The DSR has been prepared as per the format provided in the above notification. The DSR submitted has been approved by the Sub-Divisional Committee. All the aspects of the notification dated 25.07.2018 are incorporated in the DSR and found to be satisfactory.

Hence, the final DSR for Minor Minerals other than Sand Mining or River Bed Mining (Stone & Earth Work) of District Chatra is recommended to SEIAA for approval.

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G. Deputy Commissioner –cum- District Magistrate, Deoghar or through authorized representative.

i. District Survey Report (DSR) for Minor Minerals other than Sand Mining or River Bed Mining (Stone), Distt. Deoghar.

The Final DSR was submitted by Deputy Commissioner, Deoghar. He was represented by Shri Subhas Ravidas, District Mining Officer, Deoghar at the SEAC meeting on 27.09.2024.

During the meeting the DMO, Deoghar presented the DSR before the Committee. The DSR was appraised in light of S.O. no. 3611 (E), dated 25.07.2018 of MoEF&CC, Govt. of India.

The DSR has not been prepared as per the format provided in the above notification. Hence, DSR is to be resubmitted after suitable amendments to meet all the requirements of S.O. no. 3611 (E), dated 25.07.2018 of MoEF&CC, Govt. of India.

Hence, it is deferred and will be taken up for further consideration after the revised DSR is submitted.

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Day 2 : September 28th, 2024 [Saturday]

A. Consideration of Proposals :

1. Brick Soil Mining for M/s Home Bricks (Partners : Mr. Khurshid Ansari & Mr. Mumtaj Ansari), Village : Lahanjara, Thana : Sisai, Distt.: Gumla, Jharkhand (0.48 Ha).

(Proposal no.: SIA/JH/ MIN/ 494901 /2024)

Name of the consultant : Visiontek Consultancy Services Pvt. Ltd., Bhubaneswar, Odisa.

This is a new project which has been taken for appraisal on 28.09.2024.

EC Application for : Soil 1200 m^3/yr.
6000 m^3 during plan period
Topsoil 735 m^3 during plan period.

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

Project and Location Details:

Sl.	Parameter		Details	
1	Project Name	:	Brick Clay Deposit (Home Bricks)	
2	Lessee:	:	M/s Home Bricks, Partners- Mr. Khurshid Ansari & Mr. Mumtaj Ansari	
3	Lease Address	:	Village–Lohanjara, P.S.– Sisai, District – Gumla, Jharkhand.	
4	Lease Area	:	Ha: 0.48	Acres: 1.18
5	Type of Land	:	Non-Forest – Rayati Land	
6	Project Cost	:	Rs. 11.40 Lakhs	
7	EMP Budget	:	Capital: Rs. 1.40 Lakhs	Recurring: Rs. 0.63 Lakhs/ year Monitoring cost: Rs. 0.30 Lakhs/year
8	CSR / CER Budget	:	Rs. 0.57 Lakhs	
9	New or Expansion	:	New	
10	Mineable Reserves	:	Cu.M.: 7076 Cu. M.	Tonnes: Nil
11	Mine Life	:	6 Years (5 yrs Plan Period + 1 yrs Conceptual Period)	
12	Manpower	:	10 Person	
13	Water Requirement	:	1.58 KLD (Drinking: 0.15 KLD, Dust Suppression & Plantation: 0.23 KLD, Other: 1.20 KLD)	
14	Water Source	:	Through Authorized Tanker	
15	DG Set / power	:	Not Applicable	
16	Crusher	:	Not Applicable	
17	Nearest Water Body	:	South Koel River – 3.00 Km (S)	
18	Nearest Habitation	:	Lohanjara – 0.08 Km (W) direction from the mine site.	
19	Nearest Rail Station	:	Lohardaga Railway Station – 19.80 Km (N)	
20	Nearest Airport	:	Birsa Munda Airport – 69 Km (N) direction from the mine site.	
21	Nearest Forest	:	Dari PF - 4.86 km, (E) Auranga PF – 6.50 km, (E) Murpa PF – 6.67 km, (N) Anriya PF – 9.52 km, (SE)	
22	Road & Highways	:	Kudu-Gumla Rd (NH 143)-6.77 Km NW	

CO-ORDINATES

1	Latitude	:	From 23° 16' 27.17" N	To 23° 16' 30.09" N

2	Longitude	:	From 84° 39' 02.54" E	To 85° 39' 09.50" E

LAND DETAILS

Khata no.	Plot no.	Area in Acre
04	795, 800 & 801	1.18
Total		**1.18**

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Land agreement made.
2	CO	:	The CO, Sisai vide letter no. 200, dated 05.03.2021 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Gumla vide memo no. 1123/M, dated 14.12.2023 certified that 01 other mining lease area (4.23 Acre) exists within 500 m radius from proposed project site and total area is 5.41 Acre or 2.49 Ha.
4	DFO Wild Life	:	DFO, Wildlife Division, Ranchi vide letter no. 706, dated 16.08.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Gumla Forest Division vide letter no. 762, dated 08.03.2021 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 Gumla District (Serial no. 43, Page no. 40).
7	Gram Sabha	:	Gram Sabha conducted on 22.08.2024.
8	Mine Plan Approval	:	Approved by DMO, Gumla vide Letter No. 1113/M, dated 09.12.2023.
9	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

WORKING DETAILS

1	Mining Method	:	Opencast Manual Mining

2	Quarry Area	:	5 years– 0.368 ha	Life of Mine – 0.368 ha
3	Waste Generation	:	5 years–Nil	Life of Mine –Nil
4	Stripping Ratio	:	NA	
5	Working Days	:	200 days/year	
6	Benches: size & No	:	1m x 1m	
7	Elevation of Mine	:	656 m to 654 m amsl	
8	Ground Level Elevation		656 m to 654 m amsl	
9	Ultimate Working Depth	:	654 m amsl	
10	Water Table	:	648-638 m above msl	
11	Topography of Mine	:	Flat area	
12	Explosive Requirement	:	Not applicable	
13	Diesel/Fuel requirement	:	Not applicable due to manual mining	

PRODUCTION DETAILS

Year	Production Bricks Clay in cum per Annum	Topsoil removable in cum for 5 years
1st	1200	147
2nd	1200	147
3rd	1200	147
4th	1200	147
5th	1200	147
Total	**6000**	**735**

LAND USE

Category	Existing (Acres)	Proposed Land use for current plan period (acres)	Proposed Land use for current plan period (Ha)	Conceptual Plan (ha.)
Mining Activities	0.000	0.91	0.368	(Converted to levelled land with topsoil spread)
Topsoil storage, Road/Infrastructure/etc.	0.009	0.00	0.000	
Safety Zone(2m)/Green Belt	0.000	0.12	0.048	Area under plantation
Unutilized	0.471	0.15	0.064	-
Total Area	**0.48**	**1.18**	**0.48**	-

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.048 Ha	120
2	Other Reclaimed Area	:	0.000	000
3	Haul /Approach Road	:	0.05 km	30 Tree both side approach road.

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

Solid Waste Management

- Topsoil Generation will be 735 Cu.M. during the life of Mine. Topsoil storage area is 0.02 ha. The topsoil shall be used for backfilling in the end of life of mine of the mining operation.

Water Pollution Control Measures:

- Mining operation will be restricted to the depth of 2m from surface level.
- Quality of dug well will be monitored, in order to ensure the quality of water is not affected.

Air and Noise Pollution Control Measures:

- Dust suppression measures like spraying / sprinkling of water to keep the surface wet.
- Overloading of the truck / tractor trolleys will not be done.

As the only impact is due to transportation of soil through village roads, emphasis will be given on the following points:

- Carts or tractor-trolleys will be developed on village roads.
- Tractors-trolleys will be well maintained, and PUC certified.
- Timely maintenance of vehicles and their silencers to minimize vibration and sound.
- Minimum use of horns in the village area and silence zone (if any) as applicable.

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 Brick Soil Mining for M/s Home Bricks (Partners : Mr. Khurshid Ansari & Mr. Mumtaj Ansari), Village : Lahanjara, Thana : Sisai, Distt.: Gumla, Jharkhand (0.48 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).

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.

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2. **Brick Soil Mining for M/s M.R. Bricks (Prop. : Shri Ajay Kumar Prasad), Village : Konmenjra, Thana : Thethaitangar, Distt.: Simdega, Jharkhand (0.81 Ha).**

(Proposal no.: SIA/JH/ MIN/ 497497 /2024)

Name of the consultant : Visiontek Consultancy Services Pvt. Ltd., Bhubaneswar, Odisa.

This is a new project which has been taken for appraisal on 28.09.2024.

EC Application for : Soil 2000 m^3/yr.
10000 m^3 during plan period
Topsoil 1170 m^3 during plan period.

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

Project and Location Details:

Sl.	Parameter		Details	
1	Project Name	:	Brick Clay Deposit (M/s M.R. Bricks)	
2	Lessee:	:	M/s M.R. Bricks, Proprietor- Mr. Ajay Kumar Prasad	
3	Lease Address	:	Village–Konmenjra, P.S.– Thethaitangar, District – Simdega, Jharkhand.	
4	Lease Area	:	Ha: 0.81	Acres: 2.00
5	Type of Land	:	Non-Forest – Rayati Land	
6	Project Cost	:	Rs. 12.00 Lakhs	
7	EMP Budget	:	Capital: Rs. 2.00 Lakhs	Recurring: Rs. 0.90 Lakhs/ year Monitoring cost: Rs. 0.30 Lakhs/year
8	CSR / CER Budget	:	Rs. 0.60 Lakhs	
9	New or Expansion	:	New	
10	Mineable Reserves	:	Cu.M.: 11928 Cu. M.	Tonnes: Nil
11	Mine Life	:	6 Years (5 yrs Plan Period + 1 yrs Conceptual Period)	
12	Manpower	:	10 Person	
13	Water Requirement	:	2.00 KLD (Drinking: 0.15 KLD, Dust Suppression & Plantation: 0.23 KLD, Other: 1.20 KLD)	
14	Water Source	:	Through Authorized Tanker	
15	DG Set / power	:	Not Applicable	
16	Crusher	:	Not Applicable	
17	Nearest Water Body	:	Sankh River – 7.00 Km (W)	
18	Nearest Habitation	:	Konmenjra – 0.80 Km (NW) direction from the mine site.	

19	Nearest Rail Station	:	Biramitrapur Railway Station – 34.57 Km (SE)
20	Nearest Airport	:	Birsa Munda Airport – 121 Km (NE) direction from the mine site.
21	Nearest Forest	:	Saipur PF – 1.96 km, NE Gidni Pahar PF – 3.34 km, NW Mudhan Pahar PF – 3.50 km, N
22	Road & Highways	:	NH 143 – 4.00 Km E

CO-ORDINATES

1	Latitude	:	From 22° 34' 18.19" N	To 22° 34' 21.10" N
2	Longitude	:	From 84° 27' 27.75" E	To 84° 27' 34.24" E

LAND DETAILS

Khata no.	Plot no.	Area in Acre
01	3433 (P)	2.00

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Land agreement made.
2	CO	:	The CO, Thethaitangar vide letter no. 226(ii), dated 02.03.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Simdega vide memo no. 423/M, dated 22.06.2024 certified that no other mining lease area exists within 500 m radius from proposed project site.
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	:	Division Forest Officer, Simdega Forest Division vide letter no. 1356, dated 23.08.2024 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved District Survey Report (DSR) of Simdega District (Serial no. 26, Page no. 199).

7	Gram Sabha	:	Gram Sabha conducted on 05.08.2024.
8	Mine Plan Approval	:	Approved by DMO, Simdega vide Memo No. 418/M, dated 20.06.2024.
9	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

WORKING DETAILS

1	Mining Method	:	Opencast Manual Mining	
2	Quarry Area	:	5 years– 0.586 ha	Life of Mine – 6 Years (5 yrs Plan Period + 1 yrs Conceptual Period)
3	Waste Generation	:	5 years–Nil	
4	Stripping Ratio	:	NA	
5	Working Days	:	200 days/year	
6	Benches: size & No	:	1m x 1m	
7	Elevation of Mine	:	424 m to 422 m amsl	
8	Ground Level Elevation		424 m to 422 m amsl	
9	Ultimate Working Depth	:	420 m amsl	
10	Water Table	:	412 amsl	
11	Topography of Mine	:	Flat area	
12	Explosive Requirement	:	Not applicable	
13	Diesel/Fuel requirement	:	Not applicable due to manual mining	

PRODUCTION DETAILS

Year	Production Bricks Clay in cum per Annum	Topsoil removable in cum for 5 years
1st	2000	234
2nd	2000	234
3rd	2000	234
4th	2000	234
5th	2000	234
Total	**10000**	**1170**

LAND USE

Category	Existing (Acres)	Proposed Land use for current plan period (acres)	Proposed Land use for current plan period (Ha)	Conceptual Plan (ha.)
Mining Activities	0.00	1.450	0.586	(Converted to levelled land with topsoil spread)
Road	0.02	0.005	0.002	
Blocked area due to road safety	0.00	0.17	0.067	
Safety Zone(2m)/Green Belt	0.17	0.11	0.045	Area under plantation
Unutilized	1.81	0.265	0.11	-
Total Area	**2.00**	**2.00**	**0.81**	-

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.045 Ha	113
2	Other Reclaimed Area	:	0.000	000
3	Haul /Approach Road	:	0.23 km	153 Tree both side approach road.

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

Solid Waste Management

- Topsoil Generation will be 1170 Cu.M. during the life of Mine. Topsoil storage area is 0.02 ha. The topsoil shall be used for backfilling in the end of life of mine of the mining operation.

Water Pollution Control Measures:

- Mining operation will be restricted to the depth of 2m from surface level.

- Quality of dug well will be monitored, in order to ensure the quality of water is not affected.

Air and Noise Pollution Control Measures:

- Dust suppression measures like spraying / sprinkling of water to keep the surface wet.
- Overloading of the truck / tractor trolleys will not be done.

As the only impact is due to transportation of soil through village roads, emphasis will be given on the following points:

- Carts or tractor-trolleys will be developed on village roads.
- Tractors-trolleys will be well maintained, and PUC certified.
- Timely maintenance of vehicles and their silencers to minimize vibration and sound.
- Minimum use of horns in the village area and silence zone (if any) as applicable.

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 Brick Soil Mining for M/s M.R. Bricks (Prop. : Shri Ajay Kumar Prasad), Village : Konmenjra, Thana : Thethaitangar, Distt.: Simdega, Jharkhand (0.81 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).

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.

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B. Matter referred by SEIAA regarding inspection and monitoring of Remediation Plan and submit the report to SEIAA for release of Bank Guarantee submitted by Project Proponent to Jharkhand State Pollution Control Board (JSPCB).

i. Residential Apartment Project "SG Exotica" of M/s Subhash Kumar Modi & Gautham Modi at Village : Lalpur, Thana no. : 02, Tehsil : Ranchi Sahar, Distt. : Ranchi, Jharkhand.

The EC to this project was granted under violation category vide letter no. EC/SEIAA /2022-23/ 2552 /2022/312, dated 13.12.2022.

Remediation Plan and Natural & Community Resource Augmentation Plan of Rs. 160.50 Lakh was to be utilized under five different categories.

The Project Authorities vide letter dated 08.05.2024 have claimed having incurred expenditure to the tune of Rs. 1,67,89,803.00 under five heads.

During consideration of the above request the Project Authorities could not provide sufficient evidence of the expenditure incurred as claimed in their letter dated 08.05.2024.

Hence, it will be reconsidered after complete details are provided.

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C. Consideration of Proposals:

1. Chokesereng Sand Deposit (River Bed of Subarnarekha) of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Chokesereng, Block : Silli, Distt. : Ranchi, Jharkhand (3.50 Ha).

(Proposal No : SIA/JH/MIN/ 498336/2024)

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

This is a new project which has been taken for appraisal on 28.09.2024.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 39092.63 Cum/Annum or 63,330.06 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Chokesereng Sand Deposit (River Bed of Subarnarekha) of area 3.50 Ha./ 8.64 Acres	
2	Lessee:	:	M/s Jharkhand State Mineral Development Corporation Limited	
3	Lessee Address	:	Khanij Nigam Bhawan, Doranda, Ranchi – 834002, Jharkhand.	
4	Lease Area	:	3.50 ha.	Acres- 8.64 Acres
5	Type of Land	:	Govt. non forest (river) land	
6	Project Cost	:	Rs. 80 Lakhs	
7	EMP Budget	:	Capital: 4.30 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity	:	**39092.63 Cum/Annum or 63,330.06 TPA (Dry basis)**	
10	Mine Life	:	Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.	
11	Man power	:	18	
12	Water Requirement	:	3.16 ~3.50 KLD(Drinking: 0.18 KLD, Dust Suppression: 1.66 KLD, Plantation: 1.32 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	NA	

15	Crusher	:	NA
16	Nearest Water Body	:	Project lies on Subarnarekha River.
17	Nearest Habitation	:	Chokesereng village, Approx. 250 meters towards North direction.
18	Nearest Railway Station	:	Silli Railway Station, approx. 4.90 Km in NNW direction.
19	Nearest Air Port	:	Birsa Munda Airport Ranchi approx. 52.81 km towards West direction.
20	Nearest Forest	:	Protected Forest approx. 7.54 km in SE direction from mining lease. Open mixed Jungle approx. 2.19 km in NW direction from mining lease.
21	Road & Highways	:	SH-1, Approx. 5.51 Km in North direction from mining lease.

CO-ORDINATES

1	Latitude		From 23°18'30.31"N	To 23°18'35.60"N
2	Longitude		From 85°50'30.39"E	To 85°50'45.68"E

LAND DETAILS

Plot no.
1341 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Auction letter has been issued by Joint Secretary, Mines & Geology Deptt., Govt. of Jharkhand vide letter no. Kha.ni.-(Vividh)-117/2017-2090/M, dated 30.09.2022. According to provisions in Jharkhand State sand Mining Policy and its amendment. JSMDC Ltd. has been nominated as nodal agency for operating sand mines in category II.
2	CO	:	The CO, Silli (Ranchi) vide letter no. 131 (ii), dated 22.02.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Ranchi vide memo no. 737/M, dated 18.05.2024 certified that no other mining lease area exists within 500 m radius from proposed project site.

4	DFO Wild Life	:	DFO, Wildlife Division, Ranchi vide letter no. 352, dated 18.04.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Ranchi Forest Division vide letter no. 956, dated 13.03.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved District Survey Report (DSR) of Ranchi District (Page no. 90, Sl. no. RSU03).
7	Gram Sabha	:	BDO, Silli vide letter no. 514 (ii), dated 18.05.2024 informed that Gram Sabha conducted on 18.05.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Ranchi vide Memo No. 675/M, dated 07.05.2024.
9	Qualified Person	:	Shri Sahadev Singh was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Manual Method	
2	Quarry Area	:	3.50 ha. or 8.64 Acres	Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.
3	Waste Generation	:	NA, as it is sand mining project.	
4	Stripping Ratio	:	0:0	
5	Working Days	:	200 Days	
6	Benches: size & No	:	Bench height – 1.5 m & Bench width - 20.0 m.	
7	Elevation of Mine	:	125 mRL to 130 mRL	
8	Ground Level Elevation	:	125 mRL	
9	Ultimate Working Depth	:	2.50 m	
10	Water Table	:	NA	
11	Topography of Mine	:	Area lying in river plain.	
12	Explosive Requirement	:	NA	

13	Diesel/Fuel requirement	:	NA

Production Details

Year	Thickness (m)	Average Replenishment Rate	Production of sand (Cum)	Production of sand –MT
1st	2.50	100%	**39092.63**	**63,330.06**

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

Land Use

Type of Land	Area in (ha)
Forest Land	Nil
Govt. waste land (River)	3.50
Residential area	Nil
Company land	Nil
Private Land	Nil
Total	**3.50**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Plantation along both sides of approach road		560 m	560
2	No. of Plants distributed with consultation local authorities/ village Panchayat		--	100

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

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

Environment Management Plan

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	Nil	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	 14,000 8,000 8,000 7,000
3	Plantation	3,30,000	1,00,000
4	Construction and maintenance of haul road	1,00,000	1,50,000
Total		**4,30,000**	**4,87,000**

Environment Monitoring Programme

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

Undertaking submitted affirming:

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

f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
l. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
m. Transportation from the river bed to the SH-1 will be done using the existing road.
n. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
o. Wet sand will not be transported.

Solid Waste Management

No solid waste is generated during the course of mining.

Water Quality Management

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

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

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

Air Quality Management

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

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

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

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

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

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

Road accidents

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

Preventive Measures;

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

Dust generation

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

Noise Generation

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

Preventive measures

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

Health Hazards

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

Measures

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

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

Accident at Site

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

Preventive measures

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

- Separate alignment for movement of loaded vehicles coming out of mine site

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

Transportation

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

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Chokesereng Sand Deposit (River Bed of Subarnarekha) of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Chokesereng, Block : Silli, Distt. : Ranchi, Jharkhand (3.50 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).

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

XXI. No labour camp shall be allowed in riverbed.

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

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

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

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

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

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

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

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

ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.

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

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

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

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

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2. **Puregara Stone Deposit of M/s Sarvottam Mining (Partners : (i) Shri Ashok Prasad (ii) Shri Anand Prakash Pandey), Village : Puregara, Block : Ranka, Distt.: Garhwa, Jharkhand (1.611 Ha).**

   (Proposal no.: SIA/JH/MIN/498158 /2024)

   The DSR of Garhwa District was approved by SEIAA, Jhakhand on 29.10.2023 as per recommendation of SEAC based on the proposal of DSR submitted by DC, Garhwa duly authenticated by Sub-Divisional Committee.

   The above project is not a part of the approved DSR as mentioned above.

   This project could not be taken up for consideration for grant of EC as the project is not a part of the present approved DSR.

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3. **Loadih Stone Deposit of M/s Bijini Enterprises (Partners : (i) Shri Sitaram Munda (ii) Smt. Asha Rani Tete (iii) Shri Sukra Munda), Village : Loadih, Thana : Patratu, Distt.: Ramgarh, Jharkhand (2.53 Ha).**

(Proposal no.: SIA/JH/MIN/497865 /2024)

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

This is a new project which has been taken for appraisal on 28.09.2024.

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

EC Application for: Proposed Capacity- 52782.00 cum/annum or 142511.40 TPA.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Loadih Stone Deposit	
2	Lessee:	:	M/s Bijini Enterprises Partners- (1) Sri Sitaram Munda (2) Smt. Asha Rani Tete (3) Sri Sukra Munda	
3	Lease Address	:	Village- Loadih, Thana-Patratu, District- Ramgarh, State- Jharkhand	
4	Lease Area	:	2.53 Ha	Acres- 6.25 Acres
5	Type of Land	:	Non- Forest (Raiyati Land) Barren Land	
6	Project Cost	:	Rs. 80 Lakhs	
7	EMP Budget	:	Capital: Rs. 10.75 Lakhs	Recurring: Rs. 4.87 Lakhs/year
8	New or Expansion	:	New	
9	Mineable Reserves	:	1414238.40 tons	523792.00 cum
10	Mine Life	:	9.92 years	
11	Man power	:	24	
12	Water Requirement	:	8.04 ~ 8.10 KLD, (Drinking: 0.24 KLD, Dust Suppression: 3.90 KLD, Plantation: 3.90 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Sotia Nala, Approx. 2.50 km towards SW direction of mine site. Naikari Nadi, Approx. 5.0 km towards West direction of mine site	
17	Nearest Habitation	:	Approx. 710 meters	

18	Nearest Railway Station	:	Shanki Railway station, approx. 3.40 km towards NW direction.
19	Nearest Air Port	:	Birsa munda Airport, Ranchi approx. 28.50 km towards SSW direction
20	Nearest Forest	:	Protected Forest Approx. 288 m towards North direction of mine site Protected Forest Approx. 1.0 km towards South direction of mine site. Protected Forest Approx. 4.60 km towards South direction of mine site.
21	Road & Highways	:	SH-2, Approx. 8.0 km in North direction

CO-ORDINATES

1	Latitude	:	From 23°33'40.24"N	To 23°33'49.06"N
2	Longitude	:	From 85°24'16.56"E	To 85°24'23.78"E

LAND DETAILS

Khata no.	Plot no.
03	331 (P), 380 (P) & 393 (P)
09	377 (P), 381, 382, 383, 388, 389, 390, 391 & 392

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Ramgarh vide letter no. 407/Khanan, dated 21.04.2023.
2	CO	:	The CO, Patratu vide letter no. 07, dated 22.10.2022 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Ramgarh vide memo no. 955/Khanan, dated 14.08.2024 certified that 01 other mining lease area (5.30 Acre) exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribagh vide letter no. 2554, dated 20.12.2022 certified that the proposed project site is outside Eco Sensitive Zone of Hazaribag Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Ramgarh Forest Division vide letter no. 422, dated 04.03.2023 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 Ramgarh District (Sl. no. 01, Page no. 49).
7	Gram Sabha	:	Gram Sabha conducted on 29.09.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Ramgarh vide Letter No. 1014/Mining, dated 04.09.2024.
9	Qualified Person	:	Shri Tapan Kumar Chakravarty was confirm through email dated 28.09.2024 That the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast mechanized method	
2	Quarry Area	:	2.53 ha or 6.25 Acres	Life of Mine – 9.92 Years
3	Waste Generation	:	122982.00 tons morrum as waste and 13268.60 cum Intercalated waste	
4	Stripping Ratio	:	1:0.05	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	620 AMSL to 628 AMSL	
8	Ground Level Elevation	:	620 AMSL	
9	Ultimate Working Depth	:	594 AMSL (26 mbgl)	
10	Water Table	:	589 AMSL (31 mbgl)	
11	Topography of Mine	:	Area represents an undulating topography land	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	160 litre/day	

Production Details

Year	Production of stone in cum	Production of stone in tons	Morrum as waste in plan period (t)	Intercalated waste (cum) in plan period	Intercalated waste (cum) in ultimate stage	Bench AMSL
1st	46550.00	125685.00	122892.00	13268.60	22021.00	628 – 618
2nd	48165.00	130045.50	-			618 – 612
3rd	51993.50	140382.45	-			618 – 612
4th	52611.00	142049.70	-			612 – 606
5th	52782.00	142511.40	-			612 – 594
Total	**252101.50**	**680674.05**	**122892.00**	**13268.60**	**22021.00**	

Land Use Planning

Type of Land	Existing (Ha)	Plan period(Ha)	Conceptual stage (Ha)
Quarry	-	1.29	1.87 (backfilling & converted into Rain water harvesting)
Road	0.008	0.02	Comes under quarry
Safety Zone	-	0.66 (Plantation)	0.66 (Plantation)
Proposed Dump	-	0.19	Removed & Backfilling
Total Area in use	**0.008**	**2.16**	**2.53**
Balanced Area	2.522	0.37	-
Total Area	**2.53**	**2.53**	**2.53**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.66 ha	1650
2	Along Approach Road	:	100	200
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

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

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	 14,000 8,000 8,000 7,000
3	Plantation	9,75,000	1,00,000

4	Construction and maintenance of haul road	1,00,000	1,50,000
TOTAL		**10,75,000**	**4,87,000**

Note: *1950 plants * 500 Rs (for each plants including hedges and fences)= Rs. 9.75 lakhs
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/- or 150000/- (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

There is generation of 122982.00 tons morrum as waste during this plan period which is direct sell to the buyers and there is generation of 13268.60 cum Intercalated waste during this plan period and 22021.00 cum in ultimate stage. In first to third year of the plan period waste shall be proposed to dump (Average area 1907.92 m2 and height 4.30 m) temporarily on the southern side of the applied area and rest fourth & fifth waste shall be used for village & haul road maintenance and after that at ultimate stage there is 22021.00 cum waste which shall be backfilled with an average area 917.54 m2 and depth 24 m in centre portion of the applied area

Water Quality Management

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

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

Air Quality Management

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

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

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

Severity/Impact Intensity

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

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

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage	Unintended	Very	Catastrophic	5

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

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

Preventive Measures:

Face Stability

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

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

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

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

Undertaking submitted affirming:

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

k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Loadih Stone Deposit of M/s Bijini Enterprises (Partners : (i) Shri Sitaram Munda (ii) Smt. Asha Rani Tete (iii) Shri Sukra Munda), Village : Loadih, Thana : Patratu, Distt.: Ramgarh, Jharkhand (2.53 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).

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

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

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

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

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

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

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

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4. **Ramnathpur Stone Deposit of Shri Rajesh Kumar Kalwar & Others, Village : Ramnathpur, Thana : Malpahari, Distt.: Pakur, Jharkhand (2.301 Ha).**

(Proposal no.: SIA/JH/MIN/494607 /2024)

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

This is a new project which has been taken for appraisal on 28.09.2024.

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

EC Application for: Proposed Capacity- 46501.55 cum/annum or 139504.65 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Ramnathpur Stone Deposit	
2	Lessee:	:	Sri Rajesh Kumar Kalwar & Others Partner- Sri Rajesh Kumar Kalwar, S/O Late Hiralal Bhagat At Village Namupara, Shitala Mandir Road, District- Pakur, State – Jharkhand	
3	Lease Address	:	Mauja– Ramnathpur, Thana – Malpahari, District – Pakur, Jharkhand	
4	Lease Area	:	2.301 ha.	Acres- 5.686 Acres
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 70 Lakhs	
7	EMP Budget	:	Capital: Rs. 11.30 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	972978.60 tons	324326.20 cum
10	Mine Life	:	7 years	
11	Man power	:	40	
12	Water Requirement	:	9.10 KLD (Drinking: 0.40 KLD, Dust Suppression: 4.58 KLD, Plantation: 4.12 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Torai Nadi, Approx. 9.90 km. in NW direction of mine site	
17	Nearest Habitation	:	Approx. 290 meters	
18	Nearest Railway Station	:	Nagarnabi Railway station, approx. 4.47 km in East direction	
19	Nearest Air	:	Deoghar Airport, approx. 113.90 km towards WSW direction	

	Port		
20	Nearest Forest	:	Protected Forest, Approx. 1.60 km. in South direction of mine site. Protected Forest, Approx. 4.95 km. in W direction of mine site.
21	Road & Highways	:	NH-133A, Approx. 5.65 km in North direction

CO-ORDINATES

1	Latitude	:	From 24°35'04.56824" N	To 24°35'09.45395" N
2	Longitude	:	From 87°49'28.18416" E	To 87°49'36.74766" E

LAND DETAILS

Khata no.	Plot no.
20	633, 634, 635, 636, 637, 638, 639 & 640
34	643, 644, 645, 648, 650 (P), 651 (P), 653 (P) & 657 (P)
26	656
22	654 (P) & 655 (P)
04	632 (P), 646 & 647

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 392/M, dated 20.03.2024.
2	CO	:	The CO, Pakur vide letter no. 1307/Ra., dated 31.10.2023 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 habitation of 21 houses at a distance of 290 meters, pond at 103 meters and Nala at 187 meters of proposed project site, accordingly PAs has submitted EMP for the same.
3	DMO	:	DMO, Pakur vide memo no. 526/M, dated 19.04.2024 certified that 01 other LoI (5.585 Acre) exists within 500 meters radius from proposed project site and total area is 11.271 Acre or 4.56 Ha.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 357, dated 02.03.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.

5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide memo no. 71, dated 04.01.2023 certified that the distance of forest is 1334 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 527/M, dated 19.04.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 84, Page no. 150).
7	Gram Sabha	:	BDO, Pakur vide letter no. 2273/Vi., dated 28.12.2022 informed that Gram Sabha conducted on 17.12.2022.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1119/M, dated 22.07.2024.
9	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast mechanized method.	
2	Quarry Area	:	2.301 ha. or 5.686 Acres	Life of Mine – 7 Years
3	Waste Generation	:	9413.00 cum of Gritty Soil and 12202.65 cum of Intercalated Waste	
4	Stripping Ratio	:	1: 0.09	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	52 AMSL to 64 AMSL	
8	Ground Level Elevation	:	52 AMSL	
9	Ultimate Working Depth	:	16 AMSL (36 mbgl)	
10	Water Table	:	10-5 AMSL (47-42 mbgl)	
11	Topography of Mine	:	Area represents a moderately sloping land with rock mass of Basalt.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	150 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	
1st	7658.00	11487.00	2438.00	46322.00	138966.00	58 – 52
2nd	-	-	2447.45	46501.55	139504.65	52 – 46
3rd	-	-	2439.10	46342.90	139028.70	46 – 40

4th	-	-	2438.60	46333.40	139000.20	40 – 34
5th	1755.00	2633.00	2439.50	46350.50	139051.50	34 – 16
Total	**9413.00**	**14120.00**	**12202.65**	**231850.35**	**695551.05**	

Land Use

Type of Land	Present Land Use (In Ha)	At the End of the Plan Period (In Ha)	At the End of Mine (In Ha.)	Conceptual Period (In Ha)			
				Back fill	Stone pitching wall	Water Body	Plantation
Quarry	--	1.74 (Including Backfilling 0.17 Ha. & stone pitching wall 0.004Ha.)	1.781 (Including Backfilling 0.285 Ha. & stone pitching wall 0.004Ha.)	0.17	0.004	1.407	0.20 (Dead bench plantation)
Greenbelt within Safety Barrier	--	0.52 (Plantation)	0.52 (Plantation)	--	--	--	0.52
Road	--	0.007	--	--	--	--	--
Total Area in use	0.00	2.267	2.301	0.17	0.004	1.407	0.72
Balanced Unused Area	2.301	0.034	--	--	--	--	--
Total Applied Area	**2.301**	**2.301**	**2.301**	**2.301**			

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.52 ha	1300
2	Along Approach Road	:	330 m	660
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

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

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	 14,000 8,000 8,000 7,000
3	Plantation	10,30,000	1,00,000
4	Construction and maintenance of haul road	1,00,000	1,50,000
TOTAL		**11,30,000**	**4,87,000**

Note: *2060 plants*500 Rs (for each plants including hedges and fences) = Rs. 10.30 lakhs
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/- or 150000/- (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 9413.00 cum of Gritty Soil and 12202.65 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 material will be temporarily dumped at the west part of the applied area with suitable precautions like constructing parapet wall, garland drain & in 2nd year during quarry advancement intercalated waste will be removed and this intercalated waste will be temporarily dumped at slop dumping within the 1st years dump site, in 3rd & 4th year removed materials will be backfill within the exhausted quarry in south east direction, in 5th year intercalated waste will be removed. This removal material and previous temporarily dumped material (1st and 2nd years) backfilled within the exhausted quarry of the applied area. In conceptual period removal intercalated waste will be backfill in lower bench of the exhausted quarry.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.

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

Air Quality Management

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

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

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

		one within last year.

Severity/Impact Intensity

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

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4

2	Medium Risk	5-12
3	*Low Risk*	*13-25*

Hazard identification & Risk Analysis in Stone Mining operation

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

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

Preventive Measures:

Face Stability

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

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

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

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

Undertaking submitted affirming:

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

k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Ramnathpur Stone Deposit of Shri Rajesh Kumar Kalwar & Others, Village : Ramnathpur, Thana : Malpahari, Distt.: Pakur, Jharkhand (2.301 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).

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

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

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

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

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

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

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

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5. **Lakhipahari Stone Mine of Shri Mukhleshur Alam, Village : Lakhipahari, P.S. : Pakur, Distt. : Pakur, Jharkhand (2.21 Ha).**

(Proposal No : SIA/JH/MIN/ 480858/2024)

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

The Lakhipahari Stone Mine has been previously granted for Environment clearance on 14.08.2021 with production capacity 38,885 cum/year or 1,08,878 TPA. Now, the proposal has been applied for the Environmental Clearance (Expansion, Category B2) under production capacity of 54332.40 cum/year or 152130.72 TPA within same mining lease area.

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

This is an expansion project which has been taken for appraisal on 28.09.2024.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Lakhipahari Stone Mine	
2	Lessee:	:	Mukhleshur Alam Village- Jankinagar, P.O. Prithwinagar, District -Pakur, State- Jharkhand	
3	Lease Address	:	Village – Lakhipahari, P.S- Pakur, District – Pakur, Jharkhand	
4	Lease Area	:	2.21 hectare	Acres-5.46 Acres
5	Type of Land	:	Non-Forest – Raiyati Land	
6	Project Cost	:	Rs. 80 Lakhs	
7	EMP Budget	:	Capital: 4.945 Lakhs	Recurring: 4.27 Lakh / year
8	New or Expansion	:	Expansion	
9	Geological Reserves	:	Cum.: 588528.8 Cum	Tonnes: 1647880.64 tons
10	Mineable Reserves	:	Cum.: 436342.6 Cum	Tonnes: 1221759.28 tons
11	Mine Life	:	8 years	
12	Man power	:	23	
13	Water Requirement	:	9.60 KLD (Drinking: 0.23 KLD, Dust Suppression: 5.36 KLD, Plantation: 3.92 KLD)	
14	Water Source	:	From Nearby villages by tankers	
15	DG Set / power	:	500 k VA	
16	Crusher	:	No Crusher	
17	Nearest Water Body	:	Torai Nadi, Approx. 0.16 km towards SE direction of mine site	
18	Nearest Habitation	:	Lakhipahari village, Approx. 270 metres towards North direction of mine site	
19	Nearest Rail Station	:	Tilbhita Railway station, approx. 4.22 km towards East direction	
20	Nearest Air Port	:	Deoghar Airport approx. 114.01 km towards WSW direction.	

21	Nearest Forest	:	Protected Forest, Approx. 5.84 km in SE direction of mine site. Protected Forest, Approx. 8.91 km in NE direction of mine site. Protected Forest, Approx. 7.45 km in NW direction of mine site.
22	Road & Highways	:	NH-133A, Approx. 2.76 km in South direction

CO-ORDINATES

1	Latitude		From 24° 40' 21.057" to N	To 24° 40' 27.799" N
2	Longitude		From 87°47' 56.803"E	To 87°48' 04.571" E

Land Details :

Khata no.	Plot no.
06	92 (P)
08	83, 85, 86
27	53, 54, 84
29	95
31	51 (P)
42	88
45	55, 56
48	52, 87

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease Deed : Dated 18.10.2021 to 17.10.2031.
2	CO	:	The CO, Pakur vide letter no. 143/Ra., dated 18.02.2020 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Pakur vide memo no. 2414/M, dated 07.11.2023 certified that 01 other mining lease area (3.315 Acre) exists within 500 m radius from proposed project site and total area is 8.775 Acre (3.55 Ha).
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 155, dated 24.01.2020 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Pakur Forest Division vide letter no. 131, dated 17.01.2020 certified that the distance of reserved / protected forest is more than 250 meters from proposed project

			site.
6	DSR	:	The DC-cum-District Magistrate, Pakur vide letter no. 878/M, dated 21.06.21 has informed that this project is part of District Survey Report (DSR) of Pakur district and accordingly necessary action with regard to Environmental Clearance can be taken.
7	Gram Sabha	:	BDO, Pakur vide letter no. 102/Vi. dated 21.01.2020 informed that Gram Sabha conducted on 16.01.2020.
8	Mine Plan Approval	:	Approved by Deputy Director Mines, Santhal Pargana Circle, Dumka vide Memo No. 11/DDM, dated 08.01.2024.
9	Production Report	:	Production report issued by DMO, Pakur vide memo no. 2460/M, dated 11.11.2023.
10	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-11642329/ 2022/73, dated 24.02.2024.
11	Consent to Operate (CTO)	:	CTO issued by JSPCB vide Ref. no. i. JSPCB/RO/DMK/CTO-15793813/ 2023/69, dated 07.04.2023. ii. JSPCB/RO/DMK/CTO-18263085/ 2024/40, dated 22.02.2024.
12	Previous Environmental Clearance (EC)	:	Previous EC granted by SEIAA, Jharkhand vide letter no. EC/SEIAA/ 2021-22 /2386/2021/111, dated 14.08.2021.
13	EC compliance report	:	This is an expansion case of earlier EC for which Project Authorities has requested to Regional Office, Ranchi, MoEF&CC, Govt. of India vide letter dated 17.08.2023 to issue certified compliance of conditions of previous EC. As no response was received from the IRO, Ranchi, MoEF&CC, Govt. of India, report of compliance of EC conditions was certified by JSPCB, Regional Office-Cum-Laboratory, Dumka vide Ref. no. 2070, dated 04.10.2023.
9	Qualified Person	:	Shri Tapan Kumar Chakravarty has confirmed through email 28.09.2024 that the mine plan has been prepared by him.

WORKING DETAILS

1	Mining Method	:	Opencast semi mechanized method	
2	Quarry Area	:	2.21 hectare or 5.46 Acres	Life of Mine – 8 years
3	Waste Generation	:	8398.80 cum	
4	Stripping Ratio	:	1: 0.05	

5	Working Days	:	300
6	Benches: size & No	:	6m x 6m
7	Elevation of Mine	:	37 AMSL to 31 AMSL
8	Ground Level Elevation	:	22 AMSL
9	Ultimate Working Depth	:	10 AMSL (21 mbgl)
10	Water Table	:	Up to 2-4 AMSL (29-27 mbgl)
11	Topography of Mine	:	Area represents a small hillock
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 Tons	Overburden in Cum	Intercalated Waste in cum	Total Waste in cum	Bench (AMSL)
3rd Year	51550.80	144342.24	0.00	2713.20	2713.20	34 – 28
4th Year	53694.00	150343.20	0.00	2826.00	2826.00	28 – 22
5th Year	54332.40	152130.72	0.00	2859.60	2859.60	22 – 16
Total	**159577.20**	**446816.16**	**0.00**	**8398.80**	**8398.80**	

LAND USE

Land Utilization	Existing Land use (Ha)	At the end of the Plan period (Ha)	At Conceptual stage (Ha)
Excavation	1.12	1.42	1.63 (Area shall be left as water reservoir)
Waste dump	0.0	0.19	Nil
Road	0.08	0.02	0.0
Infrastructure	0.0	0.0	-
Safety Zone	0.58 (0.15 ha plantation)	0.58 (Plantation)	0.58 (Plantation)
Total	**1.78**	**2.21**	**2.21**
Unused Area	0.43	0.0	0.0
Total Lease Area	**2.21**		

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	 14,000 8,000 8,000 7,000
3	Plantation	3,17,000	1,00,000
4	Construction and maintenance of haul road	1,02,500	90,000
TOTAL		**4,19,500**	**4,27,000**

Note: *1585 plants * 200 Rs (for each plants including hedges and fences)= Rs. 3.17 lakhs
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/-
**** 2.5 lakh per kilometer (250000 * 0.41 km haul road = 1,02,500/-)***

Environment Monitoring Programme

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

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.43 ha.	1075
2	Along Approach Road	:	410 m	410
3	No. of Plants distributed in Anganwadi, Panchayat Bhawan or in schools	:	--	100

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

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

Solid Waste Management

Total 8398.80 cum waste will be generated and it shall be temporarily dumped in south eastern part of the lease area, the maximum height of dump shall be 6.03m and it will cover 0.19 ha area, garland drain & retaining wall shall be constructed all along the dump. Dump will be used in backfilling as well construction of approach road.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 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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C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	**4**	**3**	**2**	**1**

C2 (Major)	10	8	6	**4**	**2**
C3 (Moderate)	*15*	12	9	6	**3**
C4 (Minor)	*20*	*16*	12	8	**4**
C5 (Insignificant)	*25*	*20*	*15*	10	5

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone Mining operation

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

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

Preventive Measures:

Face Stability

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

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

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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

- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

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

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

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

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

Health Hazards

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

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

Accident at Site

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

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)

- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

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

Transportation

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

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

Undertaking submitted affirming:

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

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Lakhipahari Stone Mine of Shri Mukhleshur Alam, Village : Lakhipahari, P.S. : Pakur, Distt. : Pakur, Jharkhand (2.21 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).
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. **Talpahari Stone Deposit of M/s Noorujjaman Shekh (Prop. : Md. Noorujjaman Shekh), Village : Talpahari, P.S. : Hiranpur, Distt. : Pakur, Jharkhand (2.744 Ha).**

(Proposal No : SIA/JH/MIN/ 496183/2024)

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

This is a new project which has been taken for appraisal on 28.09.2024.

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 111th meeting held on 26 - 30.04.2024 and SEIAA, Jharkhand has approved the ToRs in 111th meeting held on 06th & 07th May, 2024. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/3092/2024/43, dated 09.05.2024. The final EIA / EMP submitted by PP to SEAC on 23.09.2024.

EC Application for: Proposed Capacity- 68120.7 cum/annum or 183925.89 TPA

Project and Location Details :

Sl	Parameter		Details	
1	Project Name	:	Talpahari Stone Deposit	
2	Lessee:	:	M/s Noorujjaman Shekh Prop. - Mo. Noorujjaman Shekh Address- Rahaspur, PO+PS-Rahaspur, District- Pakur, Jharkhand	
3	Lease Address	:	Village – Talpahari, PS – Hiranpur, District- Pakur, Jharkhand	
4	Lease Area	:	2.744 ha	Acres- 6.78 Acres
5	Type of Land	:	Non- Forest (Raiyati Land)	

6	Project Cost	:	Rs. 60 Lakhs	
7	EMP Budget	:	Capital: Rs. 12.70 Lakhs	Recurring: Rs. 7.90 Lakh / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 667964 cum	Tonnes: 1803502.80 tones
10	Mine Life	:	10 years	
11	Man power	:	17	
12	Water Requirement	:	7.03 ~ 7.0 KLD (Drinking: 0.17 KLD, Dust Suppression:2.98 KLD, Plantation: 3.88 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Torai Nadi, Approx. 3.20 km towards SSE direction of mine site	
17	Nearest Habitation	:	Partappur- Approx. 0.53 km towards NNW direction.	
18	Nearest Rail Station	:	Kotalpukur Railway station, approx. 6.85 km towards NE direction.	
19	Nearest Air Port	:	Deoghar Airport approx. 112.06 km towards WSW direction.	
20	Nearest Forest	:	Bhandaro Protected Forest, approx 4.55 Km in NW direction Protected Forest, approx 2.39 Km in NNW direction.	
21	Road & Highways	:	NH-133A, Approx. 3.65 km in WSW direction.	

CO-ORDINATES

1	Latitude		From 24°41'50.16" N	To 24°41'55.64" N
2	Longitude		From 87°46'21.04" E	To 87°47'29.91" E

LAND DETAILS:

Khata No.	Plot No.
17	1125 (P), 1126 (P), 1127, 1128, 1129, 1130, 1131, & 1132 (P)
21	1110 (P), 1111, 1134 (P), 1136 (P), 1137 (P), 1138, 1140, 1142, 1143, 1145, 1146, 1147, 1148, 1149, 1151, 1152, 1153, 1154 (P), 1155 (P), 1156 (P), 1157, 1161, 1162, 1163, 1164, 1165, 1167, 1168, 1169, 1172 & 1173
40	1133, 1139 (P), 1141, 1144, 1150, 1158, 1159, 1160, 1166 & 1170

STATUTORY CLEARANCES:

1	LOI	:	The Letter of Intent (LoI) has been issued by DMO, Pakur vide memo no. 2329/M, dated 17.10.2023.
2	CO	:	The CO, Hiranpur vide letter no. : 432/Ra., dated 18.08.2023 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Pakur vide memo no. 2342/M, dated 19.10.2023 certified that 04 another mining lease area (2.60 Acre, 3.04 Acre, 5.81 Acre & 6.55 Acre) exists within 500 m radius from proposed project site and total area is 24.78 Acre / 10.03 Ha.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sabhibganj) vide letter no. : 1418, dated 28.07.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Forest Distance	:	DFO, Pakur Forest Division vide memo no. : 996, dated 22.07.2023 certified that the distance of forest is 1720.4 meter from proposed project site.
6	DSR	:	This project is mentioned in DSR of Pakur District as a potential area and same has been also certified by DMO, Pakur vide memo no. 155/M, dated 30.01.2024 (Sl. no. 47, Page no. 119).
7	Gram Sabha	:	BDO, Hiranpur vide letter no. 705/Vi. Dated 11.07.2023 informed that Gram Sabha conducted on 10.07.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide letter no. 481/DDM dated 17.11.2023.
9	Qualified Person	:	Shri Tapan Kumar Chakravarty has confirmed through email 28.09.2024 that the mine plan has been prepared by him.
10	Public Hearing	:	JSPCB, Regional Office –cum- Laboratory, Dumka vide letter no. 1743, dated 04.09.2024 informed that Public Hearing conducted on 03.09.2024.
11	Baseline Data Period	:	1st March, 2024 to 31st May, 2024.

Working Details

1	Mining Method	:	Opencast Semi-mechanised method

2	Quarry Area	:	2.744 Ha	Life of Mine – 10 Years
3	Waste Generation	:	47982.30 cum or 129552.21 tons	
4	Stripping Ratio	:	1: 0.14	
5	Working Days	:	300	
6	Benches: size & No	:	6m to 6m	
7	Elevation of Mine	:	40 AMSL to 46 AMSL	
8	Ground Level Elevation	:	40 AMSL	
9	Ultimate Working Depth	:	16 AMSL (24 MBGL)	
10	Water Table	:	5 AMSL (35 MBGL)	
11	Topography of Mine	:	Area represents a small hillock.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	140 litre/day	

Production Details

Year	Production of Stone in tonnes	Overburden in cum	Intercalated Waste in (cum)	Total Waste in (cum)	Bench AMSL
1st	175661.46	11520.00	3424.20	14944.20	40-34
2nd	183202.56	0.00	3571.20	3571.20	34-22
3rd	183925.89	1584.00	3585.30	5169.30	22-16
4th	181755.90	5100.00	3543.00	8643.00	22-16
5th	181940.58	12108.00	3546.60	15654.60	22-16
Total	**906486.39**	**30312.00**	**17670.30**	**47982.30**	

Land Use

Pattern of Utilization	Existing (Ha)	Plan period (Ha)	Conceptual stage (Ha)
Excavation	0.0	2.042 (0.145 ha shall be backfilled)	2.328 (0.176 ha area shall be backfilled after backfilling entire area will be converted in to water reservoir)
Road	0.0	0.002	0.0
Infrastructure (Crusher)	0.0	0.284	0.00
Safety Zone	0.0	0.416 (Plantation)	0.416 (Plantation)

Total	**0.00**	**2.744**	**2.744**
Unused Area	2.744	0.00	0.00
Lease hold area	**2.744**		

Public Hearing (Action Plan):

S. No.	Issues raised	Action Plan with Budgetary Allocation	Action Plan with Time Bound
1.	Issues raised for Drinking water should be arranged, trees should be planted and employment	To provide the drinking water facilities to the villagers by deep boring in the village for which Rs. 1.00 Lakh invested as capital cost and Rs. 0.30 lakh will be spent as recurring cost every year. Total 1940 plants will be planted/ distributed in the second year of mining for which Rs. 9.70 lakh has been invested as capital cost and Rs. 1.00 lakh will be spent as recurring cost every year. The budget has been incorporated in EMP. Employment will be given as per the merit.	The deep boring will be done within 1 Year after getting Environmental Clearance. The Plantation will be done within 1 Year after getting Environmental Clearance. The Employment will be provided to the local people within 1 Year after getting Environmental Clearance.
2.	Arrangements should be made for prevention of pollution. (Plantation, Water Sprinkling)	Total 1940 plants will be planted/distributed in the second year of mining for which Rs. 9.70 lakh has been invested as capital cost and Rs. 1.00 lakh will be spent as recurring cost every year. The budget has been incorporated in EMP. This will be done in the 2nd year of the mining. Water Sprinkling will be carried out on regular basis from the first year of mining for which the budget of Rs. 4.0 lakh will be spent every year. The Budget for Water Sprinkling has been incorporated in EMP.	Water Sprinkling will be carried out on regular basis from the first year of mining. The Plantation will be done within 1 Year after getting Environmental Clearance.
3.	Issues raised for two hand pumps should be arranged to provide drinking water	For installation of hand pump a budget of Rs. 1.00 lakh invested as capital cost and Rs. 0.50 lakh as recurring cost every year.	The installation of hand pump will be done within 1 Year after getting Environmental Clearance.

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Area for Greenbelt in Hectare/No. of Plants	Plantation along both sides of Approach road	No. of plants distributed with consultation local authorities /village Panchayat
1st Year	Excavation for Plantation		
2nd year	0.416 ha/1040	300	100+500
3rd year	Plants care & maintenance		
4th year			
5th Year			
Total	**1040**	**300**	**600**
Total	**1940**		

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

COST PROPOSED FOR EMP:

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

	haul road		
As per Public Hearing			
5	Two Hand pumps installation in the village	1,00,000	50,000
6	Arrangements for deep boring	1,00,000	30,000
TOTAL		**12,70,000**	**7,90,000**

Note: *1940plants * 500 Rs (for each plants including hedges and fences) = 9.70 lakhs
Salary of Labor for haul road maintenance 1 labor*300 =300 per day 300*300
= 90000/- to1,50,000 /-(including maintenance)
2.5 lakh per kilometer (250000 * 0.15 km haul road = 30,000/- or 1,00,000/-)

Environment Monitoring Programme

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

Solid Waste Management

It has been calculated that total 47982.30 cum in-situ, 59977.88 cum loose and 50981.19 cum compact waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 25490.60 cum (compact) waste shall be utilized for approach & haul road maintenance. The rest waste material (50%) 25490.60 cum waste shall be temporarily dumped in eastern part of the lease area during the 1st year to 3rd year and fourth year onwards the generated waste (50%) and waste materials of previous year dumping shall be removed and used for backfilling of exhausted portion of quarry in south eastern part of the area and it will covers 0.145ha area.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after

settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.

- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

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

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

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

Severity/Impact Intensity

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

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone Mining operation

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

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

Preventive Measures:

Face Stability

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

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

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

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

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

Undertaking submitted affirming:

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

k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Talpahari Stone Deposit of M/s Noorujjaman Shekh (Prop. : Md. Noorujjaman Shekh), Village : Talpahari, P.S. : Hiranpur, Distt. : Pakur, Jharkhand (2.744 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).

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

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

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

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

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

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

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

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7. **Amdanda Pahar Stone Mine of M/s K.P. & G. Sons (Partner : Shri Vishal Makhija), Village : Amdanda Pahar, P.S. : Pathna, Distt. : Sahibganj, Jharkhand (3.17 Ha).**

(Proposal No. SIA/JH /MIN/497312 /2024).

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

This is re-appraisal of the EC issued by DEIAA, Sahibganj which has been taken up for consideration on 28.09.2024. As per O.M. dated 12.12.2018 issued by MOEF & CC projects fall in category B1.

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 109th meeting held on 09 - 13.10.2023 and SEIAA, Jharkhand has approved the ToRs in 110th meeting held on 27th , 28th & 29th October, 2023. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2023-24/2943/2023/405, dated 02.11.2023. The final EIA / EMP submitted by PP to SEAC on 23.09.2024.

Application for: **Proposed Capacity- 131370 TPA**

The project has been granted EC by DEIAA, Sahibganj vide letter no. EC/DEIAA/2017-18/37 , dated 18.07.2017.

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.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -85.9 $\mu g/m^3$ PM 2.5-48.4 $\mu g/m^3$ SO2-21.7 NO2- 42.3 $\mu g/m^3$. All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

Production detail as per letter no. 1017/ M dated 05.10.2023 by D.M.O, Sahibganj is within the permissible limit of EC.

The compliance report of previous EC has been certified by JSPCB, Regional Office –cum-Laboratory, Dumka vide Ref. no. : 1964, dated 20.09.2023.

Project and Location Details :

Sl	Parameter		Details
1	Project Name	:	Amdanda Pahar Stone Mine
2	Lessee:	:	M/S K.P. & G Sons Partner - Sri Vishal Makhija At - South Dhadka, near Shani Mandir, Mahangu Shaw More, Asansol, District- Barddhaman, West Bengal.
3	Lease Address	:	Village – Amdanda, P.S. – Pathna, District – Sahibganj, State-

			Jharkhand.	
4	Lease Area	:	3.17 Ha	Acres- 7.84 Acre
5	Type of Land	:	Non Forest – Raiyati Land	
6	Project Cost	:	Rs. 90 Lakhs	
7	EMP Budget	:	Capital: 5.70 Lakhs	Recurring: 14.0 Lakh / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 344731.85 cum	Tonnes: 930776 tons
10	Mine Life	:	7.87 years	
11	Man power	:	27	
12	Water Requirement	:	5.67 ~ 6.0 KLD (Drinking: 0.27 KLD, Dust Suppression: 4.80 KLD, Plantation: 0.60 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	500 k VA	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Gumani River - Approx 1.75 km towards SSW direction of mine site.	
17	Nearest Habitation	:	Amdanda village, at 0.43 meters owards west direction of mine site.	
18	Nearest Rail Station	:	Barharwa Railway station, approx. 6.50 km towards SE direction	
19	Nearest Air Port	:	Deoghar Airport, Deoghar approx. 115.10 km towards SW direction	
20	Nearest Forest	:	Open Mixed Jungle- Approx. 5.90 km. in NW direction of mine site.	
21	Road & Highways	:	NH- 33, Approx. 5.45 km. in East direction.	

CO-ORDINATES

1	Latitude		From 24°53'42.41" N	To 24°53'53.16" N
2	Longitude		From 87°43'29.18" E	To 87°43'40.56" E

LAND DETAILS:

Plot No.
225 (P), 239 (P), 240 (P), 241 (P) & 244 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed : date 29.10.2022 to 28.11.2027.
2	CO	:	The CO, Patna vide memo no. 01/Ra, dated 15.05.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 905/M, dated 28.08.2023 certified that 01 other mining lease area (7.82 Acre) exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 937, dated 15.05.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Sahebganj Forest Division vide memo no. 1593, dated 24.11.2016 certified that the distance of forest is 255 meter from proposed project site.
6	DSR	:	The DC – cum – District Magistrate, Sahibganj vide letter no. 939/M, dated 09.09.2023 has informed that this project is part of District Survey Report (DSR) of Sahibganj district and accordingly necessary action with regard to Environmental Clearance can be taken.
7	Gram Sabha	:	Gram Sabha conducted on 23.09.2022.
8	Mine Plan Approval	:	Approved by DMO, Sahibganj vide Letter No. 20, dated 07.01.2022. Maximum production as per Approved Mine Plan: 122143 TPA.
9	Production Report	:	Production figure issued by DMO, Sahibganj vide memo no. 1017/M, dated 05.10.2023.
10	Consent to Estblish (CTE)	:	CTE issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-1996193 /2018/339, dated 02.04.2018.
11	Consent to Operate (CTO)	:	CTO issued by JSPCB vide Ref. no. : JSPCB/RO/DMK/CTO-15712343 /2023/119, dated 17.06.2023.
12	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Sahibganj vide letter no. EC/DEIAA/2017-18/37 , dated 18.07.2017.
13	Transfer of Environmental	:	Transfer of EC granted by SEIAA vide letter no. 188, dated 13.07.2023.

	Clearance (EC)		
14	Compliance report of previous EC	:	Compliance report certified by JSPCB, Regional Office –cum-Laboratory, Dumka vide Ref. no. : 1964, dated 20.09.2023 and also certified that the proposed project site situated outside of negative supporting carrying capacity Grid no. 1, 3, 4 and 7.
15	Qualified Person	:	Dr. Anal Kumar Sinha has confirmed through e-mail dated 30.09.2024 that the mine plan has been prepared by him.
16	Public Hearing	:	Public Hearing conducted on 05.09.2024.
17	Baseline Data Period	:	October, 2023 to December, 2023.

Working Details

1	Mining Method	:	Opencast (OTFM) Mining Method	
2	Quarry Area	:	3.17 Ha / 7.84 Acre	Life of Mine – 7.87 years
3	Waste Generation	:	Nil	
4	Stripping Ratio	:	1: 0.00	
5	Working Days	:	270	
6	Benches: size & No	:	6m to 6m	
7	Elevation of Mine	:	146 AMSL to 140 AMSL	
8	Ground Level Elevation	:	140 AMSL	
9	Ultimate Working Depth	:	90 AMSL	
10	Water Table	:	60 AMSL	
11	Topography of Mine	:	Area represents hill track with characteristics flat topped or terrace.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	150 litre/day	

Production Details

Year	Production of Stone in Tonnes
1st	131364
2nd	131370
3rd	131322

4th	131334
5th	131025
Total	**656415**

Production as per DEIAA EC letter: 131370 TPA. As per the approved scheme of mining dated 07.01.2022 the maximum production is 1,22,143 TPA.

Land Use

Pattern of Utilization	Existing (Acre)	During Plan Period (Acre)	After Life of Mine (Acre)
Quarry	4.15	5.53	5.53 (Entire area will be converted into water reservoir)
Road	0.22	0.22	0.22
Waste Dump/Rest Shed	0.30	0.30	--
Safety Zone	1.78 (Plantation)	1.78 (Plantation)	1.78 (Plantation)
Total area in use	**6.45**	**7.83**	**7.53**
Balanced Area	1.39	0.01	0.31
Lease hold area	**7.84**	**7.84**	**7.84**

Public Hearing (Action plan)

S. No.	Issues raised	Action Plan with Budgetary Allocation	Action Plan with Time Bound
1.	Arrangements for night class	Budget for Night class for the the villagers Rs 1.20 lakh will be spent. Teacher salary (10,000/-)	It will be done within 1 year after getting Environmental Clearance.
2.	Issues raised for drinking water should be provided to the villagers.	Budget for drinking water facilities Rs 1.0 lakh will be spent for (Installation of Hand pump & water tank) at public place and Rs. 0.20 lakh will be spent as recurring Cost.	It will be done within 1 Year after getting Environmental Clearance.
3.	Medical treatment facilities	Medical facilities for the villagers (such as medical health camps and distribution of medicines) will be provided under which Rs 1.0 lakh will be spent as recurring cost. Budget for ambulance facilities Rs 2.0 lakh will be spent as recurring	This will be done within 1 Year after getting Environmental Clearance.

		cost.	
4.	Repairing of the roads should be done	Budget for Construction and maintenance of haul road 2.0 lakh capital cost and 0.90 to 1.50 lakh (including maintenance) Recurring Cost.	This will be done within 1 Year after getting Environmental Clearance.
5.	Arrangements for education & additional school teacher in the village.	Budget for Arrangement of free book distribution will be done in nearby Primary School in nearby village. Capital cost Rs 1.0 lakh and Rs. 0.20 lakh will be spent as recurring Cost. Rs. 1.20 lakh rupees will be spent as recurring cost for the arrangement of additional teacher in the school. Teacher salary (10,000/-) This budget has been included in the EMP.	It will be done within 1 year after getting Environmental Clearance.

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		1.78 ha/1800 (Already done during previous year of mining)	1800
2	Along Approach Road		0.200 km	400 (200 Already done during previous year of mining)
3	Plants distributed in schools, Anganwadi or in Panchayat Bhawan		--	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.

Budget for Environmental Protection

S. 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	1,50,000	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 02 Hand pump+ water tank with deep boring) at public place in village	1,00,000	20,000
6	Budget for night class for villagers	-	1,20,000
7	Medical facilities for the villagers (such as medical health camps and distribution of medicines)	-	1,50,000
8	Arrangement of Library will be done in nearby Primary School in nearby village	1,20,000	20,000
9	Arrangement of additional teacher in the school	0	1,20,000
10	Budget for ambulance facilities	-	2,00,000
	TOTAL	**5,70,000**	**14,00,000**

- ***Note: *300 plants * 500 Rs (for each plants including hedges and fences)= 1.50 lakhs***
- ***Salary of Labour for haul road maintenance 1 labor*300 =300 per day***
- ***300* 300 = 90000/-~1,50,000/- (including maintenance)***

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly

3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

There will not be generation of Waste during the plan period. Therefore, as such there is no requirement of waste dumping Plan for this mining plan period.

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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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

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

Preventive Measures:

Face Stability

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

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

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

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

Undertaking submitted affirming:

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

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Amdanda Pahar Stone Mine of M/s K.P. & G. Sons (Partner : Shri Vishal Makhija), Village : Amdanda Pahar, P.S. : Pathna, Distt. : Sahibganj, Jharkhand (3.17 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).

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

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

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

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

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

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

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

****

8. **Mayurkola Stone Mine of M/s R.B. Stone Works (Partner : Shri Ranjit Kumar Tiwary), Village : Mayurkola, Pipaljori & Lohatia, Anchal : Barharwa, Distt. : Sahibganj, Jharkhand (4.55 Ha).**

(Proposal No. SIA/JH/MIN/496503 /2024).

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

This is re-appraisal of the EC issued by DEIAA, Sahibganj which has been taken up for consideration on 28.09.2024. As per O.M. dated 12.12.2018 issued by MOEF & CC projects fall in category B1.

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 108th meeting held on 19 - 25.09.2023 and SEIAA, Jharkhand has approved the ToRs in 109th meeting held on 27th & 28th September, 2023. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2023-24/2924/2023/313, dated 06.10.2023. The final EIA / EMP submitted by PP to SEAC on 23.09.2024.

EC Application for: Proposed Capacity- 63111 cum/year or 183021 TPA.

The project has been granted EC by DEIAA, Sahibganj vide letter no. EC/DEIAA/2017-18/111 , dated 19.03.2018.

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

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 - 82.0µg/m^3PM 2.5-46.0 µg/m^3 SO2-12.88 NO2- 28.09µg/m^3 . All the data are within the permissible limit.

Data generated by JSPCB empanelled Laboratory has been also submitted by PP. All the data are within prescribed limit.

Dust suppression is being carried out on regular basis.

Near about 1300 plantation has been done in safety zone and haul road.

Production detail as per memo no. 712/M dated 11.07.2023 by D.M.O. Sahibganj is within the permissible limit of EC.

Certified compliance report vide reference no. 1931 dated 13.09.23 by JSPCB has been also submitted by PP. All the conditions given in EC letter is also found to be satisfactory.

Project and Location Details :

Sl	Parameter		Details
1	Project Name	:	Mayurkola Stone Mine

2	Lessee:	:	M/s R. B. Stone Works Partner – Shri Ranjit Kumar Tiwary S/o Shri Harihar Parasad Tiwary Address:- At - Harindanga Bazar, P.S. - Pakur, District - Pakur, Jharkhand	
3	Lease Address	:	Village – Mayurkola, Pipaljori & Lohatia, District – Sahibganj, Jharkhand	
4	Lease Area	:	4.55ha	Acres- 11.25Acres
5	Type of Land	:	Non- Forest (Raiyati Land)	
6	Project Cost	:	Rs. 50 Lakhs	
7	EMP Budget	:	Capital: 7.59 Lakhs	Recurring:9.80 Lakh / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 383988.10 cum	Tonnes: 1113565.49 tons
10	Mine Life	:	6.54 years	
11	Man power	:	28	
12	Water Requirement	:	7.48 ~ 8.00 KLD(Drinking: 0.28 KLD, Dust Suppression: 5.17 KLD, Plantation:2.03 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Kanli nadi, approx. 3.0 km towards North direction of mine site.	
17	Nearest Habitation	:	Phulchua Approx 0.57 km towards NE direction.	
18	Nearest Rail Station	:	Kotalpukur Railway station, approx. 2.80km towards ESE direction.	
19	Nearest Air Port	:	Deoghar Airport, approx. 116.0 km towards WSW direction.	
20	Nearest Forest	:	Protected forest -Approx. 0.20 km towards West direction of mine site. Protected Forest-Approx 1.0 km towards North direction of mine site.	
21	Road & Highways	:	NH- 133A, approx. 6.80 km in West direction.	

CO-ORDINATES

1	Latitude		From 24°45'13.60" N	To 24°45'0.21"N
2	Longitude		From 87°47'57.23" E	To 87°47'50.70"E

LAND DETAILS:

Mauza	Khata No.	Plot No.
Mayurkola	208	786(P), 787(P), 788(P),

		797(P), 798(P)
Pipaljori	211	145, 146(P), 147, 148, 149, 150
Lohatia	210	67(P), 68(P), 69(P), 70(P)

STATUTORY CLEARANCES

1	Lease Deed/Lease docs	:	Lease Deed 25.01.2019 to ten years.
2	CO	:	The CO, Barwaha (Sahibgajn) vide memo no. : 1062/Ra, dated 11.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj, vide memo no. 796/M, dated 05.08.2023 certified that 02 other mining lease area (4.13 Acre & 7.07 Acre) exists within 500 m radius from proposed project site and total area is 23.45 Acre.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide memo no. : 1442 dated 02.08.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	DFO, Sahebganj Forest Division vide memo no. : 1598, dated 03.11.2016 certified that the distance of notified forest is 7.70KM from project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Sahibganj.
7	Gram Sabha	:	Gram Sabha conducted on 02.12.2016.
8	Mine Plan Approval	:	i. Mine Plan Approved by Deputy Director Mines, Santhal Pargana Circle, Dumka vide letter no. 435/DDM, dated 20.09.2017. ii. Mining Scheme Approved by DMO, Sahibganj vide letter no. 881/M, dated 19.09.2022.
9	Production Report	:	Production figure issued by DMO, Sahibganj vide memo no. 712/M, dated 11.07.2023.
10	Consent to Estblish (CTE)	:	CTE issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-4780095 /2019/295, dated 01.05.2019.

11	Consent to Operate (CTO)	:	CTO issued by JSPCB vide Ref. no. : JSPCB/RO/DMK/CTO-12441835 /2022/56, dated 24.03.2022.
12	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Sahibganj vide letter no. EC/DEIAA/2017-18/111 , dated 19.03.2018.
13	Compliance report of previous EC	:	Compliance report certified by Regional Office cum Laboratory, JSPCB, Dumka vide Ref. no. : 1931, dated 13.09.2023 and also certified that the proposed project site situated outside of negative supporting carrying capacity Grid no. 1, 3, 4 and 7.
14	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.
15	Public Hearing	:	Public Hearing conducted on 13.08.2024.
16	Baseline Data Period	:	October, 2023 to December, 2023.

Working Details

1	Mining Method	:	Opencast Semi-mechanized method	
2	Quarry Area	:	4.55 Ha	Life of Mine – 6.54Years
3	Waste Generation	:	6172.49 cum	
4	Stripping Ratio	:	1:0.02	
5	Working Days	:	300	
6	Benches: size & No	:	6m to 6m	
7	Elevation of Mine	:	41AMSL to 49 AMSL	
8	Ground Level Elevation	:	41AMSL	
9	Ultimate Working Depth	:	22 AMSL	
10	Water Table	:	16 AMSL (25m BGL)	
11	Topography of Mine	:	Area represents a small hillock.	
12	Explosive Requirement	:	110kg/day	
13	Diesel/Fuel requirement	:	150 litre/day	

Production Details

Year	Production of stone (Cum)	Production of stone (Tonnes)	Total Waste in (cum)	Bench RL in Meters
1st	60208.00	174604.00	1234.32	47-27
2nd	60622.00	175803.00	1236.69	47-22
3rd	61391.00	178034.00	1231.36	47-22
4th	63111.00	183021.00	1235.92	47-17
5th	62934.00	182510.00	1234.20	32-27
Total	**308266.00**	**893972.00**	**6172.49**	

As per DEIAA EC letter the production is 183021 TPA.
As per the approved scheme of mining dated 19.09.2022 the maximum production is 1,70,353.77 TPA.

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	Conceptual stage (Ha) (after life of mine)
Quarry	3.284	3.957 (0.109 ha area shall be backfilled)	4.230 (0.109 ha area shall be backfilled after backfilling entire area will be converted into water reservoir)
Road	0.043	0.009	0.009
Safety Zone	0.314 (Plantation)	0.314 (Plantation)	0.314 (Plantation)
Total	**3.641**	**4.280**	**4.553**
Balance	0.912	0.273	0.00
Lease Hold Area	**4.553**	**4.553**	**4.553**

Public Hearing (Action Plan)

S. No.	Issues raised	Action Plan with Budgetary Allocation	Action Plan with Time Bound
1.	Issues raised for drinking water should be provided to the villagers.	To provide the drinking water facilities in nearby villages a budget of Rs. 1.00 Lakh invested as capital cost and Rs. 0.40 lakh will be spent as recurring cost every year.	It will be done within 1 Year after getting Environmental Clearance.
2.	Tube well motor should be repaired	For Tube well motor repairing a budget of Rs. 0.50 Lakh is proposed. The budget has been incorporated in EMP.	It will be done within 1 Year after getting Environmental Clearance.
3.	Medical treatment facilities	To provide the medical facilities to the villagers a budget of Rs. 1.50 lakh will be spent as recurring cost every year.	This will be done within 1 Year after getting Environmental Clearance.
4.	Employment should be provided	Employment will be given as per the merit	It will be done within 1 Year after getting Environmental Clearance.
5.	Repairing of the roads should be done	For Construction and maintenance of road a budget of Rs. 1.50 lakh invested as a capital cost and 1.20 lakh as recurring cost every year.	This will be done within 1 Year after getting Environmental Clearance.
6.	Plantation work should be done	Additional 1018 plants will be planted/distributed in the next monsoon season for which Rs. 5.09 lakh has been invested as capital cost and Rs. 1.0 lakh will be spent as recurring cost every year.	This will be done within 1 Year after getting Environmental Clearance.

7.	Water Sprinkling should be done	Water Sprinkling will be carried out on regular basis from the first year of mining for which the budget of Rs. 4.0 lakh will be spent every year.	This will be done within 1 Year after getting Environmental Clearance.

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.314 ha/785 (Already done during previous year of mining)	785
2	Along Approach Road	0.60 km	1200 (782 Already done during previous year of mining)
3	No. of plants distributed with consultation local authorities /village Panchayat	-	600 (100 +500 As per public hearing Suggestion)

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

COST PROPOSED FOR EMP:

S. No.	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	4,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	50,000 40,000 20,000 10,000
3	Plantation	5,09,000	1,00,000

4	Construction and maintenance of haul road	1,50,000	1,20,000
As per Public Hearing			
5	For drinking water facility (installation of hand pumps)	1,00,000	40,000
6	For Tube well motor repairing	--	50,000
7	For medical facilities (health checkups camps & medicine distribution)	--	1,50,000
TOTAL		**7,59,000**	**9,80,000**

Note: *1018 plants * 500 Rs (for each plants including hedges and fences) = Rs.5.09 lakhs.
Salary of Labor for haul road maintenance 1 labor*300 =300 per day 300*300
= 90000/- to1,20,000 /-(including maintenance)
**** 2.5 lakh per kilometer (250000 * 0.60 km haul road = 1,50,000/-)***

Environment Monitoring Programme

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

Solid Waste Management

Total 8392.49 cum in situ or 10490.61cum waste during the plan period will be generated. During Plan period gritty soil removed will be dumped at southern side with suitable recaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

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

- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

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

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

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

Severity/Impact Intensity

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

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

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage	Unintended	Very	Catastrophic	5

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

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

Preventive Measures:

Face Stability

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

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

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

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

Undertaking submitted affirming:

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

k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Mayurkola Stone Mine of M/s R.B. Stone Works (Partner : Shri Ranjit Kumar Tiwary), Village : Mayurkola, Pipaljori & Lohatia, Anchal : Barharwa, Distt. : Sahibganj, Jharkhand (4.55 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).

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

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

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

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

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

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

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

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9. **Jiyajori & Belpahari Stone Mine of Mr. Azhar Islam, Village : Jiyajori & Belpahari, Thana : Hiranpur, Distt. : Pakur, Jharkhand (4.763 Ha).**

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

This is an expansion project which has been taken for appraisal on 28.09.2024.

EC Application for: Proposed Capacity - From 59559.31 cum/year or 172722 TPA to 150290 cum/year or 435841 TPA

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 110th meeting held on 17-21.10.2023 and SEIAA, Jharkhand has approved the ToRs in 110th meeting held on 27th, 28th & 29th October, 2023. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2023-24/3075/2023/465, dated 02.11.2023. The final EIA / EMP submitted by PP to SEAC on 23.09.2024.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Jiyajori & Belpahari Stone Mine	
2	Lessee:	:	Sri Azhar Islam At – Jankinagar, P.O. – Prithvinagar, P.S. – Hiranpur, District – Pakur, Jharkhand	
3	Lease Address	:	Village – Jiyajori & Belpahari, Thana- Hiranpur, District – Pakur, Jharkhand	
4	Lease Area	:	4.763ha	Acres- 11.77Acres
5	Type of Land	:	Non Forest – Raiyati Land	
6	Project Cost	:	Rs. 50 Lakhs	
7	EMP Budget	:	Capital: 12.50 Lakhs	Recurring: 9.50 Lakh / year
8	New or Expansion	:	Expansion	
9	Mineable Reserves	:	cum.: 4,51,377.3 cum	Tonnes: 1308994. 17 tons
10	Mine Life	:	3 years	
11	Man power	:	21	
12	Water Requirement	:	11.84 ~ 12.0 KLD (Drinking: 0.21 KLD, Dust Suppression: 7.835 KLD, Plantation: 3.80 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	500 k VA	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Torai River, Approx. 2.90 km towards SW direction.	
17	Nearest Habitation	:	Belpahari village, at 110 meters.	

18	Nearest Rail Station	:	Kotalpukur Railway Station, approx. 8.60 km towards NE direction.
19	Nearest Air Port	:	Deoghar Airport, Approx. 109.3 Km towards SW direction.
20	Nearest Forest	:	Protected Forest, Approx. 0.62 km towards South direction of mine site. Protected Forest, Approx 0.70 km towards North direction of mine site. Protected Forest, Approx 5.46 km towards WNW direction of mine site
21	Road & Highways	:	NH- 133A, Approx. 1.80 km. in SSW direction.

CO-ORDINATES

1	Latitude		From 24°42'28.7379" N	To 24°42'43.7466" N
2	Longitude		From 87°44'32.8693" E	To 87°44'41.8089" E

LAND DETAILS:

Plot No.
239, 240, 242, 243, 244, 245 246, 248, 249 & 95 (P)

STATUTORY CLEARANCES :

1	LOI/Lease docs	:	Lease Deed : 25.02.2016 to 24.02.2026.
2	CO	:	The CO, Hiranpur vide memo no. : 510/Ra, dated 07.10.2023 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Pakur vide memo no. 2304/M, dated 14.10.2023 certified that the 03 other mining lease area (10.36 Acre, 10.18 Acre & 5.83 Acre) exists within 500 m radius from proposed project site and total area is 38.14 Acre (15.44 Ha).
4	DFO Wild Life	:	DFO-cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1894, dated 29.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Forest Distance	:	DFO, Pakur Forest Division vide letter no. : 1000, dated 15.09.2015 certified that the distance of notified forest is more

			than 500 meter from proposed project site.
6	DSR	:	This project is part of District Survey Report (DSR) of Pakur district.
7	Gram Sabha	:	Gram Sabha conducted on 24.08.2015.
8	Mine Plan Approval	:	Approved by Deputy Director Mines, Santhal Pargana Circle, Dumka vide letter no. 382/DDM dated 03.08.2023.
9	Compliance report of previous EC	:	This is an expansion case of earlier EC for which Project Authorities has requested to Regional Office, Ranchi, MoEF&CC, Govt. of India vide letter dated 13.06.2023 to issue certified compliance of conditions of previous EC. As no response was received from the IRO, Ranchi, MoEF&CC, Govt. of India, report of compliance of EC conditions was certified by Regional Office cum Laboratory, JSPCB, Dumka vide Ref. no. : 2067, dated 04.10.2023.
10	Previous production figure	:	Production figure issued by DMO, Pakur vide memo no. 2303/M, dated 14.10.2023.
11	Consent to Estblish (CTE)	:	CTE issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-768770 /2016 /164, dated 18.07.2016.
12	Consent to Operate (CTO)	:	CTO issued by JSPCB vide Ref. no. : JSPCB/RO/DMK/CTO-5390814 /2019/101, dated 26.06.2019.
13	Previous Environmental Clearance (EC)	:	Previous EC granted by SEIAA, Jharkhand vide letter no. EC/SEIAA/2015/-16/1575/2015/2270, dated 30.12.2015
14	Public Hearing	:	Public Hearing conducted on 12.08.2024.
15	Baseline Data Period	:	October, 2023 to December, 2023.
16	Qualified Person	:	Shri Tapan Kumar Chakravarty has confirmed through email 28.09.2024 that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast other than fully Mechanized method	
2	Quarry Area	:	4.763 Ha or 11.77 Acre	Life of Mine – 3 years
3	Waste Generation	:	31369 cum	
4	Stripping Ratio	:	1: 0.06	
5	Working Days	:	300	

6	Benches: size & No	:	6m to 6m
7	Elevation of Mine	:	70 AMSL to 64 AMSL
8	Ground Level Elevation	:	64 AMSL
9	Ultimate Working Depth	:	30 AMSL
10	Water Table	:	26 AMSL
11	Topography of Mine	:	Area represents a small hillock.
12	Explosive Requirement	:	110 kg/day
13	Diesel/Fuel requirement	:	110 litre/day

Production Details

Year	Production of stone (cum)	Production of stone (tons)	Total Waste in Cum	Bench RL in Meters
1st	--	--	--	--
2nd	--	--	--	--
3rd	150290	435841.00	11970.00	60mRL - 36mRL
4th	150024	435069.60	7896.00	36mRL - 30mRL
5th	149815	434463.50	11503.00	30mRL - 55mRL
Total	**450129**	**1305373.50**	**31369.00**	

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	Conceptual stage (Ha) (after life of mine)
Quarry	3.204	4.096 (0.128ha area shall be backfilled)	4.096 (0.128ha area shall be backfilled and after backfilling entire area will be converted into water reservoir)
Road	0.104	Nil	0.00
Waste Dump	Nil	Nil (waste dump to be removed and backfilled)	Nil (waste dump to be removed and backfilled)
Safety Zone	0.667 (Plantation)	0.667 (Plantation)	0.667 (Plantation)

Total	3.975	4.763	4.763
UNUSED AREA	0.788	0.000	0.000
LEASE HOLD AREA	**4.763**	**4.763**	**4.763**

Public Hearing (Action Plan):

S. No.	Issues raised	Action Plan with Budgetary Allocation	Action Plan with Time Bound
1.	Issues raised for employment	Employment will be given as per the merit.	The Employment will be provided to the local people within 1 Year after getting Environmental Clearance.
2.	Issues raised for drinking water should be provided to the villagers.	Arrangement of deep boring for water facility will be done for which total Rs. 1.0 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.	It will be done within 1 Year after getting Environmental Clearance.
3.	Arrangements should be made for prevention of pollution. Water Sprinkling)	Total Rs. 4.0 lakh will be spent as recurring cost for Pollution Control & Dust Suppression which has also been included in EMP Cost.	Water Sprinkling will be carried out on regular basis from the first year of mining.
4.	Medical treatment facilities	Total Rs. 1.50 lakh will be spent as recurring cost for distribution of medicine and for medical camp which has also been included in EMP cost.	It will be done within 1 Year after getting Environmental Clearance.
5.	Intensive Plantation should be done	Total Rs 9.50 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.	It will be done within 1 Year after getting Environmental Clearance.

6.	Repairing of the roads should be done	A proper road will be repaired and maintained. For the Road repairing & strengthening Rs. 1.875 lakhs or 2.0 lakh will be invested as the Capital Cost and every year Rs. 1.50 lakhs will be spent as the recurring cost for 5 years as the Salary of Labour for Haul Road Maintenance.	This will be done within 1 Year after getting Environmental Clearance.

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.667 ha/1668 (Already done during previous year of mining)	1668
2	Along Approach Road		0.750 km	1500
3	Plants distributed in schools, Anganwadi or in Panchayat Bhawan		--	100 +500 plants (Additional as per Public Hearing Suggestion

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

COST PROPOSED FOR EMP:

S. No	Description	Capital Cost (Rs)	Recurring Cost (Rs)
1	Pollution Control & Dust Suppression	--	4,00,000

2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	 50,000 40,000 20,000 10,000
3	Plantation	9,50,000	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
Suggestions As per Public Hearing			
5	Arrangements of deep boring for water facility	1,00,000	30,000
6	Fund for distribution of medicine and for medical camp	--	1,50,000
TOTAL		**12,50,000**	**9,50,000**

Note: *1900 plants * 500 Rs (for each plants including hedges and fences) = Rs.9.50 lakhs.
1668 plant in Safety Zone Area and 200 plant along both sides of Approach road
(Total 1868 plants Already done during previous year of mining)
Salary of Labor for haul road maintenance 1 labor*300 =300 per day 300*300
= 90000/- to1,50,000 /-(including maintenance)
*** 2.5 lakh per kilometer (250000 * 0.750 km haul road = 1,87,500/- or 2,00,000/-)**

Environment Monitoring Programme

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

Solid Waste Management

Total 31369 cum waste shall be generated during this modified scheme of mining period. The 3rd & 4th Year waste generated during this Modified plan period shall be temporarily

dumped in the south eastern part the lease area with maximum height of 4.80 m and the waste of 5th year as well as waste dumped on the southern side shall be removed and backfilled on the north eastern part of the exhausted quarry which shall cover about 0.128ha area

Water Quality Management

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

Air Quality Management

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

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.

L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

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

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone Mining operation

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

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

Preventive Measures:

Face Stability

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

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

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

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

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

Undertaking submitted affirming:

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

k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Jiyajori & Belpahari Stone Mine of Mr. Azhar Islam, Village : Jiyajori & Belpahari, Thana : Hiranpur, Distt. : Pakur, Jharkhand (4.763 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).

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

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

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

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

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

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

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

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10. **Belpahari Stone Mine of M/s Black Diamond Stone Works, Village : Belpahari, Thana : Hiranpur, Distt. : Pakur, Jharkhand (4.19 Ha).**

(Proposal No. SIA/JH/MIN/497949/2024).

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

This is re-appraisal of the EC issued by DEIAA, Pakur which has been taken up for consideration on 28.09.2024. As per O.M. dated 12.12.2018 issued by MOEF & CC projects fall in category B1.

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 108th meeting held on 19-25.09.2023 and SEIAA, Jharkhand has approved the ToRs in 109th meeting held on 27th & 28th September, 2023. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2023-24/2925/2023/306, dated 06.10.2023. The final EIA / EMP submitted by PP to SEAC on 26.09.2024.

EC Application for: Proposed Capacity- 60,175.17 Cu.m/annum or 1,74,508 TPA

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.

The project has been granted EC by DEIAA, Pakur vide letter no. 149/DEIAA, dated 19.08.2017.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 - 82.0µg/m^3PM 2.5-44.0 µg/m^3 SO2-12.10 NO2-27.09µg/m^3 . All the data are within the permissible limit.

Data generated by JSPCB empaneled Laboratory has been also submitted by PP. All the data are within prescribed limit.

Dust suppression is being carried out on regular basis.

Plantation has been done developed in safety zone along with Haul road of the lease area.

Production detail as per letter no. 1705/ M dated 22.07.2023 by D.M.O. Pakur is within the permissible limit of EC.

Certified compliance report by JSPCB vide reference no. 1933 dated 13.09.2023 has been submitted by PP, which is found to be satisfactory.

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Belpahari Stone Mine
2	Lessee:	:	M/s Black Diamond Stone Works (Partners: 1. Sri Ajay Kumar Tebriwal, 2. Sri Mahbul Sheikh, 3. Sri Radhesyam Nangolia, 4. Smt. Chanda Devi)

			Address:-At-Marwari Tola, PO+PS- Pakur, District- Pakur, Jharkhand	
3	Lease Address	:	Village – Belpahari, Thana - Hiranpur, District –Pakur, State- Jharkhand	
4	Lease Area	:	4.19ha	Acres- 10.36Acres
5	Type of Land	:	Non- Forest (Raiyati Land)	
6	Project Cost	:	Rs. 50.0 Lakhs	
7	EMP Budget	:	Capital: 10.80 Lakhs	Recurring: 10.0 Lakh / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 4,42,117.2 cum	Tonnes: 12,82,139.88 tons
10	Mine Life	:	5.1years	
11	Man power	:	28	
12	Water Requirement	:	12.13 ~12.50 KLD (Drinking:0.28 KLD, Dust Suppression:8.73KLD, Plantation:3.12KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	500 KVA	
15	Crusher	:	With crusher	
16	Nearest Water Body	:	Torai River, Approx. 3.0 km towards SW direction of mine site.	
17	Nearest Habitation	:	Tungi - Approx 0.60 km towards NNW direction.	
18	Nearest Rail Station	:	Kotalpukur Railway station, approx. 9.0 km towards ENE direction.	
19	Nearest Air Port	:	Deoghar Airport, approx. 109.3km towards SW direction.	
20	Nearest Forest	:	Protected Forest near Belpahari village -Approx. 0.3 km towards S direction of mine site. Protected Forest near Govindpur village-Approx 1.0 km towards W direction of mine site. Protected Forestnear Bandaro village-Approx. 1.6 km towards N direction of mine site. Protected Forestnear Dhapahari village- Approx. 2.5 km towards South direction of mine site. Protected Forestnear Maharo village- Approx. 3.0 km. in NE direction of mine site.	
21	Road & Highways	:	NH-133A, approx. 1.5 km in SW direction.	

CO-ORDINATES

1	Latitude		From 24°42'16.16" N	To 24°42'23.09"N
2	Longitude		From 87°44'23.09" E	To 87°44'48.21"E

LAND DETAILS:

Khata No.	Plot No.
18	119 (P)
28	114 (P), 117 (P)
32	113 (P), 115, 118 (P)
39	125
57	116

STATUTORY CLEARANCES:

1	Lease Deed/Lease docs	:	Lease deed : 06.10.2017 to 05.10.2027.
2	CO	:	The CO, Hiranpur vide memo no. : 343/Ra, dated 11.07.2023 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Pakur vide memo no. 1694/M, dated 22.07.2023 certified that 02 other mining area (30.02 Acre & 11.77 Acre) exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. : 1410, dated 28.07.2023 certified that the proposed project site is outside Eco Sensitive Zone Udhwa Bird Sanctuary.
5	DFO Forest Distance	:	DFO, Pakur Forest Divison vide letter no. : 1105, dated 20.07.2016 certified that the distance of notified forest is more than 250 m from project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Pakur (Sl. no. 1, Page no. 19).
7	Gram Sabha	:	Gram Sabha conducted on 04.06.2016.
8	Mine Plan Approval	:	Deputy Director Mines, Santhal Pargana Circle, Dumka vide memo no. 183/DDM, dated 06.09.2018.
9	Production Report	:	Production figure issued by DMO, Pakur vide memo no. 1705/M, dated 22.07.2023 and memo no. 2077/M, dated 12.09.2023.

10	Compliance report of previous EC	:	Compliance report certified by Regional Office cum Laboratory, JSPCB, Dumka vide Ref. no. : 1933, dated 13.09.2023.
11	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Pakur vide letter no. 149/DEIAA, dated 19.08.2017.
12	Consent to Estblish (CTE)	:	CTE issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-2095155 /2018/276, dated 22.03.2018.
13	Consent to Operate (CTO)	:	CTO issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTO-14026237 /2022/1444, dated 17.10.2022.
14	Public Hearing	:	Public Hearing conducted on 04.09.2024.
15	Baseline Data Period	:	October, 2023 to December, 2023.
16	Qualified Person	:	Shri Tapan Kumar Chakravarty has confirmed through email 28.09.2024 that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi-mechanised method	
2	Quarry Area	:	4.19Ha ·	Life of Mine – 5.1Years
3	Waste Generation	:	26850.00 cum	
4	Stripping Ratio	:	1: 0.11	
5	Working Days	:	300	
6	Benches: size & No	:	6m to 6m	
7	Elevation of Mine	:	65AMSL to 71 AMSL	
8	Ground Level Elevation	:	65AMSL	
9	Ultimate Working Depth	:	35AMSL	
10	Water Table	:	26 AMSL (38mbgl)	
11	Topography of Mine	:	Area represents a small hillock.	
12	Explosive Requirement	:	110kg/day	
13	Diesel/Fuel requirement	:	110 litre/day	

Production Details

Year	Production of stone (Cum)	Production of stone (Tonnes)	Total Waste in (cum)	Bench RL in Meters
1st	41047.24	119037	3765.60	65-59-53
2nd	43187.24	125243	2137.80	53-47-59-53
3rd	47760	138504	13842.00	59-53-47-47-41-65-59-65
4th	51060.68	148076	1764.00	59-53-47-41-35
5th	60175.17	174508	5340.60	70-35
Total	**435855.0**	**705368**	**26850.00**	

Production as per DEIAA EC Letter – 174508 TPA

Land Use

Pattern of Utilization	Existing (Ha)	At the end of Plan period (Ha)	Conceptual stage (Ha)
Quarry	1.507	3.020 (0.95 ha area shall be backfilled and after backfilling entire area shall be left as water reservoir)	3.020 (0.95 ha area shall be backfilled and after backfilling entire area shall be left as water reservoir)
Road	0.128	0.00	0.00
Waste Dump	0.00	0.00 (waste dump to be removed and backfilled)	0.00 (waste dump to be removed and backfilled)
Crusher	0.200	--	--
Safety Zone	1.170 (Plantation)	1.170 (Plantation)	1.170 (Plantation)
Total	1.835	4.190	4.190
Balanced Area	**1.185**	**0.00**	**0.00**
Lease hold area	**4.190**	**4.190**	**4.190**

Public hearing (Action Plan)

S. No.	Issues raised	Action Plan with Budgetary Allocation	Action Plan with Time Bound
1.	Issues raised for employment	Employment will be given as per the merit.	The Employment will be provided to the local people within 1 Year after getting Environmental Clearance.
2.	Issues raised for drinking water should be provided to the villagers.	Arrangement of drinking water will be made for the villagers for which Rs. 1,80,000/- will be spent as capital cost and Rs. 30,000/- will be spent as recurring cost which has also been included in EMP Cost.	It will be done within 1 Year after getting Environmental Clearance.
3.	Arrangements should be made for prevention of pollution. Water Sprinkling)	Total Rs. 4,00,000/- will be spent as recurring cost for Pollution Control & Dust Suppression which has also been included in EMP Cost.	Water Sprinkling will be carried out on regular basis from the first year of mining.
4.	Medical treatment facilities	Total Rs. 2,00,000/- will be spent as recurring cost for medical camp (once in every month) which has also been included in EMP cost.	This will be done within 1 Year after getting Environmental Clearance.
5.	Intensive Plantation should be done	Total Rs. 7,80,000/- will be spent as capital cost and Rs. 1,00,000/- will be spent as recurring cost for plantation which has also been included in EMP cost.	It will be done within 1 Year after getting Environmental Clearance.
6.	Repairing of the roads should be done	Total Rs. 1,20,000/- will be spent as capital cost and Rs. 1,50,000/- will be spent as recurring cost for construction and maintenance of haul road which has also been included in EMP cost.	This will be done within 1 Year after getting Environmental Clearance.

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	1.170 ha/2925 (Already done during	2925

		previous year of mining)	
2	Along Approach Road	0.48 km	960
3	In consulting local authorities	-	100 + 500 (Additional as per public hearing suggestions)

- 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 Protection

Sl. No	Description	Capital Cost (lakh)	Recurring Cost (lakh)
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	7,80,000	1,00,000
4	Construction and maintenance of haul road	1,20,000	1,50,000
Suggestions As per Public Hearing			
5	Fund for medical camp (In every month)	--	2,00,000
6	Fund for arrangement of drinking water by 3 hand pumps	1,80,000	30,000
TOTAL		**10,80,000**	**10,00,000**

Note: *1560 plants * 500 Rs (for each plants including hedges and fences)= 7.80 lakh
(Total of 4485 saplings was proposed to be planted. Out of which 2925 plant in Safety Zone Area have been planted during previous year of mining. Rest of the plants i.e (960 plant along approach road & 100 + 500 plants (Additional as per Public Hearing Suggestion i.e

Total 1560 Plants) with consultation from local authorities/village Panchayat) will be done in the next monsoon season)

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

300* 300 = 90000/ -~1,50,000/- (Including Maintenance)

*** 2.5 lakh per kilometer (250000 * 0.48 km haul road = 1,20,000/-**

Environment Monitoring Programme

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

Solid Waste Management

It has been calculated that total 26850.00 cum in-situ, 33562.50 cum loose & 28528.13 cum compact waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 14264.06Cum waste (compact) shall be utilized for approach & haul road maintenance. The waste material (50%) generated during the 1st & 2nd year shall be temporarily dumped in north western part of the lease area, the maximum height of dump shall be 2.57m, garland drain & retaining wall shall be constructed all along the dump. During the 3rd year onwards the 50% of generated waste and waste materials of temporary dump materials shall be used for partial backfilling of exhausted quarry in south eastern comer of the area and it will cover 0.95ha area.

Water Quality Management

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

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

Air Quality Management

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

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

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

Severity/Impact Intensity

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

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

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone Mining operation

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

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

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

Preventive Measures:

Face Stability

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

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

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

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

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

Undertaking submitted affirming:

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

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Belpahari Stone Mine of M/s Black Diamond Stone Works, Village : Belpahari, Thana : Hiranpur, Distt. : Pakur, Jharkhand (4.19 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).

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

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

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

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

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

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

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

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11. Karondajor Stone Deposit of Shri Sudhir Kumar Ohdar, Village : Karondajor, Thana : Bharno, Distt. : Gumla, Jharkhand (2.023 Ha).

(Proposal No. SIA/JH/MIN/498069/2024).

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

Application for: Proposed Capacity- 26144.0 cum/year or 65360.0 TPA

This is re-appraisal of the EC issued by DEIAA, Gumla which has been taken up for consideration on 28.09.2024. As per O.M. dated 12.12.2018 issued by MOEF & CC projects fall in category B1.

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 109th meeting held on 09-13.10.2023 and SEIAA, Jharkhand has approved the ToRs in 110th meeting held on 27th, 28th & 29th October, 2023. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2023-24/2999/2023/412, dated 02.11.2023. The final EIA / EMP submitted by PP to SEAC on 26.09.2024.

The project has been granted EC by DEIAA, Gumla vide letter no. EC/DEIAA/2016-17/0019/2017/15/EC , dated 25.03.2017.

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.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -85.9 $\mu g/m^3$ PM 2.5-48.4 $\mu g/m^3$ SO2-21.7 NO2- 42.3 $\mu g/m^3$. All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

Production detail as per letter no. 859/ M dated 29.09.2023 by D.M.O. Gumla is within the permissible limit of EC.

The compliance report of previous EC has been certified by JSPCB, Regional Office Ranchi vide Ref. no. : 473, dated 30.09.2023.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Karondajor Stone Deposit	
2	Lessee:	:	Sudhir Kumar Ohdar, Address- Village- Karondajor, Thana- Bharno, District- Gumla, Jharkhand	
3	Lease Address	:	Village- Karondajor, Thana- Bharno, District – Gumla, Jharkhand	
4	Lease Area	:	2.023 ha	Acres- 5.0 Acres
5	Type of Land	:	Non Forest – Raiyati Land	

6	Project Cost	:	Rs. 50 Lakhs	
7	EMP Budget	:	Capital: 16.50 Lakhs	Recurring: 6.45 Lakh / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 372552.0 cum	Tonnes: 931380.0 tonnes
10	Mine Life	:	14.25 or 14.0 years	
11	Man power	:	21	
12	Water Requirement	:	11.43~12.00 KLD (Drinking: 0.21 KLD, Dust Suppression: 4.40 KLD, Plantation: 6.82 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	500 k VA	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Paras River - Approx 6.70 km towards North direction of mine site.	
17	Nearest Habitation	:	Karondajor village, at 710 meters	
18	Nearest Rail Station	:	Bakaspur Railway station, approx. 19.70 km towards SE direction.	
19	Nearest Air Port	:	Birsa Munda Airport, approx. 56.75 km towards NE direction.	
20	Nearest Forest	:	Protected Forest - Approx. 4.0 km. towards NE direction of mine site.	
21	Road & Highways	:	NH-43, Approx. 8.15 km in NW direction.	

CO-ORDINATES

1	Latitude		From 23°05'58.05" N	To 23°06'04.4" N
2	Longitude		From 84°48'44.2" E	To 84°44'50.7" E

LAND DETAILS :

Khata no.	Plot No.
167	1826 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed : date 09.11.2017 to 09.10.2027.
2	CO	:	The CO, Bharno vide letter no. 499 (ii), dated 20.10.2014 has mentioned the plot no. of the project is not recorded as "Jungle-

			Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Gumla vide memo no. 874/M, dated 03.10.2023 certified that 05 other mining lease area (2.00 Acre, 1.00 Acre, 9.00 Acre, 11.50 Acre & 11.50 Acre) exists within 500 m radius from proposed project site and total area is 40.00 Acre (16.18 Ha).
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide letter no. 944, dated 18.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Gumla Forest Division vide memo no. 2502, dated 16.12.2014 certified that the distance of forest is 04 KM from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Gumla District.
7	Gram Sabha	:	BDO, Bharno (Gumla) vide letter no. 663 (ii), dated 10.10.2014 informed that Gram Sabha conducted on 07.10.2014.
8	Mine Plan Approval	:	i. Mine Plan approved by DMO, Gumla vide Letter No. 1112/M, dated 26.11.2016. ii. Mining Scheme approved by DMO, Gumla vide Letter No. 1149/M, dated 22.11.2021.
9	Production Report	:	Production figure issued by DMO, Gumla vide memo no. 859/M, dated 29.09.2023.
10	Consent to Estblish (CTE)	:	CTE issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-2030256 /2018/235, dated 07.03.2018.
11	Consent to Operate (CTO)	:	CTO issued by JSPCB vide Ref. no. : JSPCB/RO/RNC/CTO-4682114 /2019/71, dated 18.03.2019.
12	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Gumla vide letter no. EC/DEIAA/2016-17/0019/2017/15/EC, dated 25.03.2017.
13	Compliance report of previous EC	:	Compliance report certified by JSPCB, Regional Office Ranchi vide Ref. no. : 473, dated 30.09.2023.
14	Public Hearing	:	Public Hearing conducted on 22.08.2024.
15	Baseline Data Period	:	December, 2023 to February, 2024.

16	Qualified Person	:	Shri Tapan Kumar Chakravarty has confirmed through email 28.09.2024 that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast semi mechanized method	
2	Quarry Area	:	2.023 Ha / 5.0 Acre	Life of Mine – 14.25 or 14.0 years
3	Waste Generation	:	6536.0 cum or 16340.0 TPA	
4	Stripping Ratio	:	1: 0.05	
5	Working Days	:	300	
6	Benches: size & No	:	6m to 6m	
7	Elevation of Mine	:	660 AMSL to 683 AMSL	
8	Ground Level Elevation	:	660 AMSL	
9	Ultimate Working Depth	:	up to 655 AMSL	
10	Water Table	:	647 AMSL (13 mbgl)	
11	Topography of Mine	:	Area represents hillock of Granite/Gneiss	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	110 litre/day	

Production Details

Year	Production of stone (cum)	Production of stone (tons)	Bench RL in Meters
1st	26144.0	65360.0	683mRL - 673mRL
2nd	26144.0	65360.0	679mRL - 673mRL
3rd	26144.0	65360.0	679mRL - 667mRL
4th	26144.0	65360.0	673mRL - 667mRL
5th	26144.0	65360.0	673mRL - 667mRL
Total	**130720.0**	**326800.0**	

As per DEIAA EC letter the Production is 26144.0 cum/year or 65360.00 TPA.
As per the approved scheme of mining dated 22.11.2021 the maximum production is 26144.0 cum/year or 65360.00 TPA.

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	After life of mine (Ha)
Quarry	0.50	1.242	1.615 (0.347 ha area shall be backfilled and after backfilling entire area will be converted into water reservoir)
Road	0.007	0.007	0.003
Plantation	0.405 (Plantation)	0.405 (Plantation)	0.405 (Plantation)
Total	**0.912**	**1.654**	**2.023**
Balanced Area	1.111	0.369	--
Total Area	**2.023**	**2.023**	**2.023**

Public Hearing (Action Plan):

S. No.	Issues raised	Action Plan with Budgetary Allocation	Action Plan with Time Bound
1.	Issues raised for employment	Employment will be given as per the merit.	The Employment will be provided to the local people within 1 Year after getting Environmental Clearance.
2.	Issues raised for drinking water should be provided to the villagers.	Installation of tube well for irrigation will be done in village for which Total Rs. 2,00,000/- will be spent as capital cost and Rs. 30,000/- will be spent as recurring cost which has also been included in EMP cost. Two hand-pumps will be installed for clean drinking water in village for which Total Rs. 1,00,000/- will be spent as capital cost and Rs. 25,000/- will be spent as recurring cost which has also been included in EMP cost.	It will be done within 1 Year after getting Environmental Clearance.

3.	Arrangements should be made for prevention of pollution. Water Sprinkling)	Total Rs. 2,00,000/- will be spent as recurring cost for Pollution Control & Dust Suppression which has also been included in EMP cost.	Water Sprinkling will be carried out on regular basis from the first year of mining.
4.	Intensive Plantation should be done	Total Rs. 11,00,000/- will be spent as capital cost and Rs. 1,00,000/- will be spent as recurring cost for plantation which has also been included in EMP Cost.	It will be done within 1 Year after getting Environmental Clearance.
5.	Repairing of the roads should be done	Total Rs. 2,00,000/- will be spent as capital cost and Rs. 1,50,000/- will be spent as recurring cost for construction and maintenance of haul road which has also been included in EMP cost	This will be done within 1 Year after getting Environmental Clearance.
6	Education facilities also should be provided for the villagers in the project vicinity.	Total Rs. 50,000/- will be spent as capital cost and Rs. 20,000/- will be spent as recurring cost for Distribution of Books, Note books, pen/pencils etc. to the children.	This will be done within 1 Year after getting Environmental Clearance.

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.405 ha/1013 (Already done during previous year of mining)	1013
2	Along Approach Road	0.80 km	1600
3	No. of plants distributed with consultation local authorities /village Panchayat	-	100 + 500 (Additional as per public hearing suggestions)

- 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 Protection

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	11,00,000	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
Suggestions As per Public Hearing			
5	Fund for installation of two hand pumps in village for clean drinking water	1,00,000	25,000
6	Fund for installation of tube well for irrigation in village	2,00,000	30,000
7	Fund for Distribution of Books, Note books, pen/pencils etc.	50,000	20,000
TOTAL		**16,50,000**	**6,45,000**

Note: *2200 plants * 500 Rs (for each plants including hedges and fences) = 11.00 lakh
**** Salary of Labor for haul road maintenance 1 labor*300 =300 per day***
300* 300 = 90000/- ~ 1,50,000/- (including maintenance)
**** 2.5 lakh per kilometer (250000 * 0.80 km haul road = 2,00,000/-)***

Environment Monitoring Programme

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

4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

Total 6536.0 cum or 16340.0 TPA waste will be 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.

Water Quality Management

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

Air Quality Management

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

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

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

Severity/Impact Intensity

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

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone Mining operation

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

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

Preventive Measures:

Face Stability

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

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

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

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

Undertaking submitted affirming:

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

k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Karondajor Stone Deposit of Shri Sudhir Kumar Ohdar, Village : Karondajor, Thana : Bharno, Distt. : Gumla, Jharkhand (2.023 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).

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

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

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

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

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

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

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

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12. **Ramnathpur Stone Deposit of M/s Mandhan Minerals Corporation, Mouza : Ramnathpur, Thana : Malpahari, Distt.: Pakur, Jharkhand (2.260 Ha).**

(Proposal no.: SIA/JH/MIN/496288 /2024)

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

This is a new project which has been taken for appraisal on 28.09.2024.

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- 50245.50 cum/annum or 150736.50 TPA

Project and Location Details :

Sl	Parameter		Details	
1	Project Name	:	Ramnathpur Stone Deposit	
2	Lessee:	:	M/S Mandhan Minerals Corporation, (Partner – Sri Anil Tanwani)	
3	Lease Address	:	Mauja – Ramnathpur, Thana – Malpahari, District – Pakur, Jharkhand	
4	Lease Area	:	2.260 Ha	Acres- 5.585 Acres
5	Type of Land	:	Non- Forest (Raiyati Land)	
6	Project Cost	:	Rs. 70 Lakhs	
7	EMP Budget	:	Capital: Rs. 12.80 lakhs	Recurring: Rs. 5.70 Lakh / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 351150.40 cum	Tonnes: 1053451.20 tones
10	Mine Life	:	7 years	
11	Man power	:	41	
12	Water Requirement	:	10.30 KLD (Drinking: 0.41 KLD, Dust Suppression: 5.17 KLD, Plantation: 4.72 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	:	Torai Nadi, Approx. 9.40 km. in NW direction of mine site	
17	Nearest Habitation	:	Approx. 0.300 km	
18	Nearest Rail Station	:	Nagarnabi Railway station, approx. 4.63 km in East direction.	
19	Nearest Air Port	:	Deoghar Airport, approx. 114.68 km towards W direction	
20	Nearest Forest	:	Protected Forest, Approx. 1.25 km. in South direction of mine site. Protected Forest, Approx. 3.95 km. in West direction of mine site.	
21	Road & Highways	:	NH-133A, Approx. 5.29 km in North direction	

CO-ORDINATES

1	Latitude	From 24°35'17.72365"N	To 24°35'25.11676"N
2	Longitude	From 87°49'15.47893"E	To 87°49'21.99515"E

LAND DETAILS

Khata no.	Plot no.
22	407, 408 (P), 409 (P), 459 (P), 470, 471, 472, 473, 474, 475, 478 (P), 479, 482, 483 (P) & 487
32	485 & 486

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 365/M, dated 16.03.2024.
2	CO	:	The CO, Pakur vide letter no. 1308/Ra., dated 31.10.2023 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 habitation of 21 houses at a distance of 300 meters, pond at 411 meters and Nala at 475 meters of proposed project site.
3	DMO	:	DMO, Pakur vide memo no. 1297/M, dated 16.08.2024 certified that 04 other mining lease area (5.686 Acre, 4.81 Acre, 6.28 Acre & 3.66 Acre) exists within 500 meters radius from proposed project site and total area is 26.021 Acre or 10.53 Ha.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 353, dated 02.03.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide memo no. 288, dated 08.02.2023 certified that the distance of forest is 1431 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1298/M, dated 16.08.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 84, Page no. 150).

7	Gram Sabha	:	BDO, Pakur vide letter no. 2271/Vi., dated 28.12.2022 informed that Gram Sabha conducted on 16.12.2022.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1073/M, dated 16.07.2024.
9	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast mechanised method	
2	Quarry Area	:	2.260 ha	Life of Mine – 7 Years
3	Waste Generation	:	9158.00 cum of Gritty Soil and 13212.60 cum of Intercalated Waste	
4	Stripping Ratio	:	1: 0.08	
5	Working Days	:	300	
6	Benches: size & No	:	6m to 6m	
7	Elevation of Mine	:	52 AMSL to 62 AMSL	
8	Ground Level Elevation	:	52 AMSL	
9	Ultimate Working Depth	:	Up to 19 AMSL (33 mgbl)	
10	Water Table	:	Up to 12 AMSL (40 mbgl)	
11	Topography of Mine	:	The area represents a moderately sloping land with rock mass of Basalt.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	140 litre/day	

Production Details

Year	Removal of Gritty Soil		Intercalated Waste	Production of Stone		Bench AMSL
	in cum	in tons	in cum	in cum	in tons	
1st	2700.00	4050.00	2639.80	50156.20	150468.60	61 – 55
2nd	4480.00	6720.00	2643.70	50230.30	150690.90	55 – 49
3rd	1118.00	1677.00	2644.50	50245.50	150736.50	55 – 49
4th	860.00	1290.00	2643.80	50230.30	150690.90	49 – 43

5th	000.00	000.00	2640.80	50175.20	150525.60	43 – 37
Total	**9158.00**	**13737.00**	**13212.60**	**251037.50**	**753112.50**	

Land Use

Type of Land	Present Land Use (In Ha)	At the End of the Plan Period (In Ha)	At the End of Mine (In Ha.)	Conceptual Period (In Ha)			
				Back fill	Stone pitching wall	Water Body	Plantation
Quarry	--	1.622 (Including Backfilling 0.180 Ha. & stone pitching wall 0.007Ha.)	1.622 (Including Backfilling 0.286 Ha. & stone pitching wall 0.007Ha.)	0.180	0.007	0.791	0.644 (Dead bench)
Greenbelt within Safety Barrier	--	0.638 (Plantation)	0.638 (Plantation)	--	--	--	0.638
Road	0.013	--	--	--	--	--	--
Total Area in use	0.013	2.260	2.260	0.180	0.007	0.791	1.282
Balanced Unused Area	2.247	--	--	--	--	--	--
Total Applied Area	**2.260**	**2.260**	**2.260**	**2.260**			

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.638 ha	1600
2	Along Approach Road	:	330 m	660
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

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

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	 50,000 40,000 20,000 10,000
3	Plantation	11,80,000	1,00,000
4	Construction and maintenance of haul road	1,00,000	1,50,000
TOTAL		**12,80,000**	**5,70,000**

Note: *2360 plants *500 Rs (for each plants including hedges and fences)= Rs. 11.80 lakhs
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/- or 150000/- (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 9158.00 cum of Gritty Soil and 13212.60 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, 3rd, 4th & 5th year gritty soil and intercalated waste will be removed and this will be backfilled within the exhausted quarry at south-east part. In conceptual period removed intercalated waste will be backfill lower two bench of the exhausted quarry.

Water Quality Management

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

- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

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

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

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

Severity/Impact Intensity

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

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone Mining operation

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

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

Preventive Measures:

Face Stability

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

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

- Falls from the edge of a bench
- Dust generation during drilling

- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

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While 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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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:

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- 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 and detonators shall not be carried in the same container
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Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

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

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- Inadequate brakes (Possibly from lack of maintenance)
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- Untrained drivers
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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.
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j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
l. Personal protective equipments such as clothing, helmet, safety shoes, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Baseline data is yet to be generated.

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 27, 28, 29, 30.09.2024 & 01.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure II alongwith following specific condition :-

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II. The detailed EMP is to be prepared for the Habitation, Pond & Nala existing within an area of 500 meter radius of proposed project boundary. This EMP is to be included in EIA report.

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13. Sundarpahari Stone Deposit of M/s Maa Tara Stone Works (Prop. : Shri Chiranjit Prasad), Village : Sundarpahari, Thana : Maheshpur, Distt.: Pakur, Jharkhand (2.387 Ha).

(Proposal no.: SIA/JH/MIN/495942 /2024)

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

This is a new project which has been taken for appraisal on 28.09.2024.

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- 25621.50 cum/annum or 74302.35 TPA

Project and Location Details :

Sl	Parameter		Details	
1	Project Name	:	Sundarpahari Stone Deposit	
2	Lessee:	:	M/S Maa Tara Stone Works Prop.- Sh. Chiranjit Prasad	
3	Lease Address	:	Village – Sundarpahari, Thana- Maheshpur, District – Pakur, State- Jharkhand	
4	Lease Area	:	2.387 Ha	Acres- 5.90 Acres
5	Type of Land	:	Non- Forest (Raiyati Land)	

6	Project Cost	:	Rs. 80 Lakhs	
7	EMP Budget	:	Capital: Rs. 11.39 lakhs	Recurring: Rs. 5.70 Lakh / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 256151.35 cum	Tonnes: 742838.92 tons
10	Mine Life	:	10 years	
11	Man power	:	29	
12	Water Requirement	:	8.961~9.0 KLD (Drinking: 0.29 KLD, Dust Suppression: 4.515 KLD, Plantation: 4.156 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No	
16	Nearest Water Body	:	Tripita or Triaghana Nadi, Approx. 7.0 km. toward SW direction of mine site	
17	Nearest Habitation	:	Approx. 1 km	
18	Nearest Railway Station	:	Chatra Railway Station, approx. 10.5 km towards East direction.	
19	Nearest Air Port	:	Kazi Nazrul Islam Airport Durgapur, approx. 100.0 km towards SSW direction.	
20	Nearest Forest	:	Reserved Forest, Approx. 9.50 km. in SSW direction of mine site. Reserved Forest, Approx. 9.40 km. in SSW direction of mine site.	
21	Road & Highways	:	NH-14, Approx. 13.0 km. in SE direction. SH-7, Approx. 10.5 km in East direction.	

CO-ORDINATES

1	Latitude	From 24°22'14.9222" N	To 24°22'22.1043" N
2	Longitude	From 87°44'42.4140" E	To 87°44'49.5603" E

LAND DETAILS

Khata No.	Plot No.
09	290, 314, 315 & 316

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The LOI has been issued by District Mining Office, Pakur vide letter no. 1778/M, dated 14.10.2019.
2	CO	:	The CO, Maheshpur vide letter no. 515/Ra., dated 17.07.2019 has mentioned the plot no. of the project is not recorded as "Jungle-

			Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Pakur vide memo no. 1197/M, dated 31.07.2024 certified that other mining lease area exists within 500 meter radius from proposed project site and total area is 22.09 Acre or 8.94 Ha.
4	DFO Wild Life	:	DFO Wildlife Division, Hazaribagh vide letter no. 1432, dated 25.07.2019 certified that the proposed project site is out side Eco Sensitive Zone of Udhwa Lake Bird Sanctuary from proposed project site.
5	DFO Territorial	:	DFO, Pakur Forest Division vide letter no. 1090 dated 07.09.2019 certified that the distance of reserved / protected forest is more than 250 meter from the proposed project site.
6	DSR	:	This Project is mentioned in approved District Survey Report (DSR) of Pakur District (Sl. no. 19, Page no. 65).
7	Gram Sabha	:	BDO, Maheshpur vide letter no. 935/Vi., dated 15.07.2019 informed that Gram Sabha conducted on 08.07.2019.
8	Mine Plan Approval	:	Approved by DMO, Pakur vide Memo no. 583/DDM dated 31.12.2019.
9	Qualified Person	:	Dr. Anal Kumar Sinha has confirmed through email 30.09.2024 that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi mechanised method	
2	Quarry Area	:	2.387 ha	Life of Mine – 10 Years
3	Waste Generation	:	16345.74 Cum	
4	Stripping Ratio	:	1: 0.1	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	71 AMSL to 81 AMSL	
8	Ground Level Elevation	:	71 AMSL	
9	Ultimate Working Depth	:	Up to 65 AMSL (6 mgbl)	
10	Water Table	:	Up to 58 AMSL (13 mbgl)	
11	Topography of Mine	:	The major part of the region is covered with undulating hills	

12	Explosive Requirement	:	110 kg/day
13	Diesel/Fuel requirement	:	140 litre/day

Production Details

Year	Production of Stone in cum	Production of Stone in Tonnes	Generation of Waste (cum)	OB waste (cum)	Total waste (cum)	Bench AMSL
1st	25598.70	74236.23	1347.30	6448.00	7795.30	77 – 77
2nd	25612.66	74276.73	1348.04	Nil	1348.04	77 - 71
3rd	25621.50	74302.35	1348.50	651.0	1999.50	77 - 71
4th	25564.50	74137.05	1345.50	2511.00	3856.50	77 - 71
5th	25581.60	74186.64	1346.40	Nil	1346.40	71 - 65
Total	**127978.96**	**371139.00**	**6735.74**	**9610.0**	**16345.74**	

Land Use:

Pattern of Utilization	Existing (Ha)	Plan period(Ha)	Conceptual stage (Ha)
Quarry	Nil	1.387	1.803 (0.138 ha area shall be backfilled & after backfilling entire area will be converted into water reservoir)
Road	0.099	0.030	0.017
Dump	Nil	0.303	Nil (waste dump shall be removed & backfilled)
Safety Barrier Zone	Nil	0.567 (Plantation)	0.567 (Plantation)
Total Area	**0.099**	**2.287**	**2.387**
Unused Area	2.288	0.100	0.000
Total	**2.387**	**2.387**	**2.387**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.567 ha	1418
2	Along Approach Road	:	280 m	560
3	No. of plants distributed with consultation local authorities	:	--	100

	/village Panchayat			

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

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	-	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	-	 50,000 40,000 20,000 10,000
3	Plantation	10,39,000	1,00,000
4	Construction and maintenance of haul road	1,00,000	1,50,000
TOTAL		**11,39,000**	**5,70,000**

Note: *2078 plants *500 Rs (for each plants including hedges and fences)= Rs. 10.39 lakhs
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/- or 150000/- (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 16345.74 cum of total waste will be generated during the plan period.

Stone is exposed in some parts of the area and small soil cover is observed in this area. The small quantity of waste will be dumped in the Lease area with suitable precaution in the plan period and will be used for backfilling in plan and conceptual periods. Though there is no

huge soil. Stone will be sent to the crusher and used exclusively on Government and other Infrastructural Works. The stone may also be exported with all formalities.

Water Quality Management

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

Air Quality Management

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

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

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

L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

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

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone Mining operation

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

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

<u>Preventive Measures:</u>

Face Stability

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

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed

- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

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

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

Falls from the edge of a bench

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

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

Control Measures

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

Dust generation during drilling

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

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

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

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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

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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).

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14. Hathigarh Stone Deposit of M/s Pakur Stone Production (Prop. : Shri Uday Kumar Singh), Village : Hathigarh, Thana no. : 03, Thana : Littipara, Distt.: Pakur, Jharkhand (2.76 Ha).

(Proposal no.: SIA/JH/MIN/496745 /2024)

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

This is a new project which has been taken for appraisal on 28.09.2024.

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- 36,432 cum/annum or 1,02,010 TPA

Project and Location Details:

S. No.	Parameter		Details	
1	Project Name	:	Hathigarh Stone Mine with Crusher	
2	Lessee:	:	M/S Pakur Stone Production (Prop.- Sri Uday Kumar Singh)	
3	Lease Address	:	Mauza – Hathigarh, Anchal – Littipara, District – Pakur, State – Jharkhand	
4	Lease Area	:	2.76 Ha	Acres- 6.81 Acres
5	Type of Land	:	Non- Forest (Raiyati Land)	
6	Project Cost	:	Rs. 90 Lakhs	
7	EMP Budget	:	Capital: Rs. 13.85 Lakhs	Recurring: Rs. 5.70 Lakhs/year
8	New or Expansion	:	New	
9	Mineable Reserves	:	1026749 tons	366696 cum
10	Mine Life	:	10 years	
11	Man power	:	35	
12	Water Requirement	:	10.55 ~ 10.60 KLD, (Drinking: 0.35 KLD, Dust Suppression: 5.06 KLD, Plantation: 5.14 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	500 KVA	
15	Crusher	:	With Crusher	
16	Nearest Water Body	:	Torai Nadi, Approx. 4.80 km towards S direction	
17	Nearest Habitation	:	Approx. 599 meters	
18	Nearest Railway Station	:	Kotalpukur Railway station, approx. 11.77 km in East direction.	
19	Nearest Air Port	:	Deoghar Airport, approx. 108 km towards SW direction	
20	Nearest Forest	:	Protected Forest, Approx. 4.0 km. in N direction of mine site. Protected Forest, Approx. 1.50 km. in ENE direction of mine site. Protected Forest, Approx. 3.50 km. in ESE direction of mine site.	

21	Road & Highways	:	NH-133A, Approx. 310 m in East direction.

CO-ORDINATES

1	Latitude	:	From 24°43'48.67" N	To 24°43'58.92" N
2	Longitude	:	From 87°42'20.82" E	To 87°42'32.28" E

LAND DETAILS

Khata No.	Plot No.
94	640 (P), 641 & 642
84	900, 901, 902, 903, 904, 905 & 906
54	907
42	891 & 893
22	916 & 917

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The LOI has been issued by District Mining Office, Pakur vide letter no. 2239/M dated 31.12.2021.
2	CO	:	The CO, Littipada vide letter no. 365/Ra. dated 26.08.2019 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Pakur vide memo no. 1197/M, dated 31.07.2024 certified that other mining lease area exists within 500 meters radius and total area is 20.19 Acre or 8.17 Ha.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribagh vide letter no. 1897, dated 01.11.2021 certified that the proposed project site is out side of Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Territorial	:	DFO, Pakur Forest Division vide letter no. 817, dated 28.05.2021 certified that the distance of resereved / protected forest is more than 250 m from proposed project site.
6	DSR	:	This project is mentioned in approved District Survey report (DSR), Pakur (Sl. no. 12, Page no. 23).
7	Gram Sabha	:	BDO, Littipara vide Letter no 675/Vi., dated 29.06.2021 informed that Gram Sabha conducted on 16.06.2021

8	Mine Plan Approval	:	Approved by DMO, Pakur vide Memo no. 866/M dated 10.05.2022
9	Qualified Person	:	Md. Tauseef Warsi has confirmed vide letter dated 28.09.2024 that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast mechanized method	
2	Quarry Area	:	2.76 ha. or 6.81 Acre	Life of Mine – 10 Years
3	Waste Generation	:	2000 cum	
4	Stripping Ratio	:	1:0.01	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	88 AMSL to 89 AMSL	
8	Ground Level Elevation	:	85 AMSL	
9	Ultimate Working Depth	:	up to 70 AMSL (15M BGL)	
10	Water Table	:	59 AMSL (26 M BGL)	
11	Topography of Mine	:	Area represents an almost flat land with two hillocks	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	150 litre/day	

Production Details

Year	Generation of Waste/O.B in cum	Production of Stone in cum	Production of Stone in tons	Bench AMSL
1st	1020	36400	101920	88 - 82
2nd	980	36432	102010	88 - 82
3rd	00	36400	101920	88 - 82
4th	00	36400	101920	82 - 76
5th	00	36401	101923	82 - 76
Total	**2000**	**182033**	**509693**	

Land use pattern :

Pattern of Utilization	Existing (Ha)	Plan period (Ha)	Conceptual stage (Ha)
Quarry	0.00	1.28	1.80 ha area will be converted into water reservoir)
Haul Road	0.00	0.03	0.02
Proposed Crusher	0.00	0.11	Remove from lease area
Green belt in Safety Zone	0.00	0.94 (Plantation)	0.94 (Plantation)
Dump with Parapet wall & Garland Drain	0.00	0.09	Nil (Waste dump to be removed and backfilled)
Total area in use	**0.00**	**2.45**	**2.76**
Balance unused Area	2.76	0.31	0.00
Balance used Area	0.00	0.00	0.00
Total Applied Lease Area	**2.76**	**2.76**	**2.76**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.94 ha	2350
2	Along Approach Road	:	60 m	120
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

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

COST PROPOSED FOR EMP

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

2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	 50,000 40,000 20,000 10,000
3	Plantation	12,85,000	1,00,000
4	Construction and maintenance of haul road	1,00,000	1,50,000
TOTAL		**13,85,000**	**5,70,000**

Note: *2570 plants * 500 Rs (for each plants including hedges and fences)= 12.85 lakh
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/- or 150000/- (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 2000 cum waste will be generated during the Plan Period. During Plan period gritty soil removed will be dumped at western 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 is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.

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

Air Quality Management

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

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

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

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel

C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone Mining operation

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

7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

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

Preventive Measures:

Face Stability

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

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

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench

- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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

- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.

b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
l. Personal protective equipments such as clothing, helmet, safety shoes, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Baseline data is yet to be generated.

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 27, 28, 29, 30.09.2024 & 01.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure 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 MeriLiFE Portal (https://merilife.nic.in).

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Day 3 : September 29th, 2024 [Sunday]

Consideration of Proposals

1. **Shyamnagar Sand Ghat (Subarnarekha River) of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Shyamnagar, Block : Silli, Distt. : Ranchi, Jharkhand (5.00 Ha).**

   (Proposal No : SIA/JH/MIN/ 496813/2024)

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

   This is a new project which has been taken for appraisal on 29.09.2024.

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

   Application for Environmental Clearance (EC).

   EC Application for: Proposed Capacity- 360 cum /day or 72000 cum/annum

Project and Location Details:

S.No.	Parameter	Details	
1	Project Name	Shyamnagar Sand Ghat Shri Om Prakash Singh(Sand-In-Charge)	
2	Lessee:	M/s Jharkhand State Mineral Development Corporation Ltd. (A Govt. of Jharkhand Enterprises)	
3	Lessee Address	Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand)	
4	Lease Area	5.0 ha.	
5	Type of Land	Non-Forest Government Land (River Bed)	
6	Project Cost	Rs 77.84 Lakhs	
7	EMP Budget	Capital: Rs 26.54 Lakhs	Recurring: 3.3 lakhs / year
8	New or Expansion	New	
9	Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity	72000 cum per annum / 360 cum per day **(Dry Basis)**	
10	Mine Life/ Lease Period	Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.	
11	Man power	189	
12	River name	Subarnarekha river	
13	Mining depth	2.4m	
14	Water Requirement	Total water requirement is about 14.40 KLD= 8.50 KLD (Drinking Water & Domestic Uses, 189 persons @45 LPCD) + 1.98 KLD (Water sprinkling) + 3.92 KLD (plantation)	

15	Water Source	By Authorised hired tankers
16	DG Set / power	NA
17	Crusher	NA
18	Nearest Water Body	Subarnaraekha River (Project Site)
19	Nearest Habitation	Garhalmad, at 0.39 KM in W direction.
20	Nearest Rail Station	Torang Railway Station is about 3.26 Km in NE direction
21	Nearest Air Port	Birsa Munda Airport Ranchi is about 51.91 Km in W direction
22	Nearest Forest	Name of Places / Distance (Km) / Direction: Kalimati Reserve Forest — 8.14 — E Protected forest — 4.73 — SSW Protected Forest — 3.72 — SSE Protected Forest — 14.02 — SSE
23	Road Highways	Barenda Road is about 2.14 km in W direction. SH-1 is about 10.85 km in N direction.
24	Seismic zone	Zone II as per seismic zone map of India

CO-ORDINATES

Pillar No.	Latitude	Longitude	Pillar No.	Latitude	Longitude
1	23°15'13.14"N	85°49'42.57"E	9	23°14'58.83"N	85°50'0.67"E
2	23°15'15.01"N	85°49'43.69"E	10	23°15'0.92"N	85°49'58.09"E
3	23°15'13.12"N	85°49'46.17"E	11	23°15'2.76"N	85°49'55.84"E
4	23°15'10.78"N	85°49'49.23"E	12	23°15'4.54"N	85°49'53.53"E
5	23°15'8.36"N	85°49'52.41"E	13	23°15'5.25"N	85°49'51.65"E
6	23°15'5.10"N	85°49'56.69"E	14	23°15'6.22"N	85°49'50.41"E
7	23°15'2.84"N	85°49'59.62"E	15	23°15'8.93"N	85°49'47.75"E
8	23°15'0.86"N	85°50'2.23"E	16	23°15'11.07"N	85°49'45.12"E

LAND DETAILS

Khata no.	Plot no.
27	469 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Auction letter has been issued by Joint Secretary, Mines & Geology Deptt., Govt. of Jharkhand vide letter no. Kha.ni.-(Vividh)-117/2017-2090/M, dated 30.09.2022. According to provisions in Jharkhand State sand Mining Policy and its amendment. JSMDC Ltd. has been nominated as nodal agency

			for operating sand mines in category II.
2	CO	:	The CO, Silli (Ranchi) vide letter no. 131 (ii), dated 22.02.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Ranchi vide memo no. 1379/Khanan, dated 10.09.2024 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Ranchi vide letter no. 353, dated 18.04.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Ranchi Forest Division vide letter no. 956, dated 13.03.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved District Survey Report (DSR) of Ranchi District (Page no. 89, Sl. no. RSU04).
7	Gram Sabha	:	Gram Sabha conducted on 10.09.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Ranchi vide Memo No. 1389/M, dated 11.09.2024.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

WORKING DETAILS

1	Mining Method	:	Opencast Manual Method
2	Quarry Area	:	5.0 Ha
3	Waste Generation	:	No waste generation
4	Working Days	:	200 day
5	Benches: size & No	:	NA
6	Elevation of Mine	:	209 Amsl.
7	Ground Level Elevation	:	206.6 Amsl
8	Ultimate Working Depth	:	2.4 m
9	Water Table	:	NA
10	Topography of Mine	:	Area represents gently sloping land.
11	Explosive Requirement	:	No blasting required
12	Diesel/Fuel Requirement	:	Not required

PRODUCTION DETAILS

Year	Total Area (Ha)	Average Replenishment Rate (%)	Thickness (m)	Volume (cum) 60%	Volume MT (cum*1.61)
1st year	3.0	100	2.4	72,000	115920

LAND USE

Types of Land	Area in Hectares
Forest Land	Nil
Govt. waste land (River)	5.0
Residential area	Nil
Company	Nil

ENVIRONMENT MANAGEMENT

GREEN BELT DEVELOPMENT

Village	No of plants	Area consider for plantation (length of approach road) KM	Species of plant
Shyamnagar sand ghat Total area of 5.00 ha in River-. Subarnarekha	1308	0.98 KM Approach Road, 980/3=327 Plants 327×4=1308 plants (Two Row Plantation along The both side of the road) (Two row plantations along with the both side of road)	Mango, Jackfruit, Jamun, Babul, Gulmohar, Neem, Pipal, Arjun etc.

ENVIRONMENT MANAGEMENT COST

PROPOSED FOR ENVIRONMENT MANAGEMENT COST			
S. No.	Mitigative measures to protect Environment	Capital Cost (In Lakh)	Recurring cost (In Lakh)
1.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine)	20.0	1.5

2.	Green belt development on approach the road (for each plant including hedges and fences) @No. of plants 1308 x 500 Rs.	6.54	1.0
3.	Environment Monitoring (Air, Water, Noise& Soil Monitoring)	Nil	0.80
	TOTAL	26.54	3.3

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

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

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

Undertaking submitted affirming:

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

c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
l. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
m. Transportation from the river bed to the SH-4A will be done using the existing road.
n. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
o. Wet sand will not be transported.

SOLID WASTE MANAGEMENT

No solid waste is generated during the course of mining.

WATER QUALITY MANAGEMENT

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

AIR QUALITY MANAGEMENT

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

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

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

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

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

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

ROAD ACCIDENTS

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

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

DUST GENERATION

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

NOISE GENERATION

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

PREVENTIVE MEASURES

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

HEALTH HAZARDS

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

PREVENTIVE MEASURES

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

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

ACCIDENT AT SITE

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

PREVENTIVE MEASURES

Following mitigation measures would be taken to minimise risk of road accident-

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

TRANSPORTATION

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

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

supervision and control of management.

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

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 Shyamnagar Sand Ghat (Subarnarekha River) of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Shyamnagar, Block : Silli, Distt. : Ranchi, Jharkhand (5.00 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 Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in).

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

XXI. No labour camp shall be allowed in riverbed.

XXII. Provision shall be made for housing labour with all necessary infrastructure and facilities (outside mining Block and river-bed) such as fuel for cooking, toilets / mobile

toilets, safe drinking water, First-Aid facilities, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

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

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

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

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

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

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

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

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

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

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

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

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2. **Kothar Stone Mine of Shri Shyam Lal Mahto, Village : Kothar, Thana no. : 88, Distt.: Ramgarh, Jharkhand (0.68 Ha).**

(Proposal no.: SIA/JH/MIN/493044/2024)

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

This is a new project which has been taken for appraisal on 29.09.2024.

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

EC Application for: **Proposed Capacity: 6,324 Cum Per Annum or 17,075 Ton Per Annum**

Project and Location Details:

S. No	Parameter		Details	
1	Project Name	:	Kothar Stone Mine	
2	Lessee	:	Shri Shyam Lal Mahto	
3	Lessee Address	:	R/o- H.N.-103, Manjh Tola, Near Hanuman Mandir, Post-Kaitha, Thana- Ramgarh, District- Ramgarh, Jharkhand.829122	
4	Lease Area	:	Ha: 0.68 Ha	Acres: 1.68 Acres
5	Type of Land	:	Raiyati Land	
6	Project Cost	:	21.50 Lakhs	
7	EMP Budget	:	Capital: **13.66** Lakhs	Recurring: **2.5** Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	62,769 Cum	1,69,476 Tonnes
10	Mine Life	:	10.0 Years	
11	Man power	:	20 persons	
12	Water Requirement	:	Total water requirement is about 9.75 KLD= 0.75 (Drinking Water & Domestic Uses) + 5 KLD (Water sprinkling) + 4 KLD (plantation).	
13	Water Source	:	by Authorised hired water tankers	
14	DG Set / power	:	125 KVA (Temporary setup for Backup)	
15	Crusher	:	No	
16	Nearest Water Body	:	Chetar Pond is about 0.3 km in S direction. Bharechnagar Dam is about 10.7 km in NNW direction.	
17	Nearest Habitation	:	Kothar is about 1.06 km in NNW direction	
18	Nearest Rail Station	:	Barkakana Railway Station is about 9.4 Km in WNW direction.	
19	Nearest Airport	:	Birsa Munda Airport is about 39.15 Km in SW direction.	
20	Nearest Forest	:	Ramgarh P.F. is about 6.77 km in S direction. Burhibaghi P.F. is about 12.1 km in SSE direction. Sidhwar P.F. is about 11.9 km in WSW direction.	

			Harretola P.F. is about 6.24 km in WSW direction. Orla P.F. is about 14.3 km in NW direction. Harwe P.F. is about 10.67 km in NNE direction.
21	Road & Highways	:	NH-20 is about 2.44 km in W direction. NH-320 is about 12.5 km in S direction. SH-2 is about 3.9 km in WNW direction.

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	23°36'01.06376"N	85°33'25.48019"E	11	23°35'57.17368"N	85°33'25.31977"E
2	23°35'59.91583"N	85°33'26.40780"E	12	23°35'57.39536"N	85°33'24.73488"E
3	23°35'59.24346"N	85°33'25.98412"E	13	23°35'57.82013"N	85°33'23.60830"E
4	23°35'58.79954"N	85°33'25.67034"E	14	23°35'58.38184"N	85°33'22.58986"E
5	23°35'58.30062"N	85°33'25.51464"E	15	23°35'58.62804"N	85°33'22.79858"E
6	23°35'58.06007"N	85°33'25.37996"E	16	23°35'59.15299"N	85°33'23.37948"E
7	23°35'57.81422"N	85°33'25.37996"E	17	23°35'59.49096"N	85°33'23.64599"E
8	23°35'57.47847"N	85°33'25.59370"E	18	23°35'59.67010"N	85°33'23.52928"E
9	23°35'57.57486"N	85°33'25.72420"E	19	23°36'00.19714"N	85°33'24.15074"E
10	23°35'57.39814"N	85°33'25.59172"E	20	23°36'00.35766"N	85°33'24.69607"E

LAND DETAILS

Khata no.	Plot no.
19	1721
38	1728

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Ramgarh vide letter no. 1206/Khanan, dated 25.11.2023.
2	CO	:	The CO, Ramgarh vide letter no. 2520, dated 09.11.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.

3	DMO	:	DMO, Ramgarh vide memo no. 872/Khanan, dated 24.07.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribagh vide letter no. 2031, dated 18.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Hazaribag Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Ramgarh Forest Division vide letter no. 2208, dated 11.10.2023 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 Ramgarh District (Sl. no. 05, Page no. 50).
7	Gram Sabha	:	Gram Sabha conducted on 25.04.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Ramgarh vide Letter No. 943/Mining, dated 12.08.2024.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM & Semi-Mechanised	
2	Lease Area	:	1.68 ACRES / 0.68 HA	Life of Mine – 10.0 years
3	Waste Generation	:	5 years– 7955 CUM	
4	Stripping Ratio(t/m^3)	:	1:0.12	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Highest Elevation of lease Area	:	304 above MSL	
8	Lowest Elevation of lease Area		300 above MSL	
9	Ultimate Working Depth	:	276 above MSL	
10	Water Table	:	260 above MSL (40 BGL)	
11	Topography of Mine	:	Uneven land	
12	Explosive Requirement	:	Tentative 15 kg/per day	
13	Diesel/Fuel requirement		440 Litres per day	

Production Details

Year	Generation of Waste/O. B in cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	3335	6090	16443	Construction & Road

2nd	2660	6272	16934	Construction & Road
3rd	1960	6282	16961	Construction & Road
4th	00	6324	17075	Construction & Road
5th	00	6311	17040	Construction & Road
Total	**7955**	**31279**	**84453**	
Stripping Ration in (m3/t)- 1:0.12				

Land Use

LAND USE PATTERN			
	Existing	**First to Fifth Years**	**After Life of Mine**
Category	**Area in Hectares**	**Area in Hectares**	**Area in Hectares**
Quarry	0.00	0.24	0.43 ha area will be converting as water reservoir
Haul Road	0.00	0.01	0.00
Proposed Crusher	0.00	0.00	Crusher not proposed
Green belt in Safety Zone	0.00	0.25	0.25
Dump with Parapet wall & Garland drain	0.00	0.11	Top soil will be used for plantation and rest overburden shall use for haul road dressing and backfilling
Total area in use	0.00	0.61	0.68
Balance unused area	0.68	0.07	0
Balance used area	0.00	0.00	0
Total Applied Lease Area	**0.68**	**0.68**	**0.68**

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	400	2500	0.25	Gulmohar, Gular, Sagwan, Sakua Fruit Bearing Trees Mango, Jackfruit, Guava
	Haul Road	3 x 3	332	250m Approach Road 250/3=83 Plants 83 x 4 row=332 Plants		
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care &	---	---	---	---	

	Protection					
Total			**732**	**2500**	**0.25**	

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

Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST			
S.NO	**Mitigative measures to protect Environment**	**Capital Cost (n Lakh)**	**Recurring cost (In Lakh)**
01.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine)	10.0	1.0
02.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @No. of plants 732 x 300Rs.	2.19	1.0
03.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	Nil	0.50
TOTAL		**12.19**	**2.5**

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	**Monitoring Parameters**	**No. of Locations**	**Frequency of Monitoring**
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly

2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Undertaking submitted affirming:

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

Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the

removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

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

Air Quality Management

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

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

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

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

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

RISK ASSESSMENT

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

Hazard identification & Risk Analysis in Stone Mining operation

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

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

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

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

Preventive Measures:

Slope Failure

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

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

Blasting Operations

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

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

Handling of Explosives

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

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large

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

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

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 Kothar Stone Mine of Shri Shyam Lal Mahto, Village : Kothar, Thana no. : 88, Distt.: Ramgarh, Jharkhand (0.68 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).

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

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

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

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

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

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

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

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3. **Samlapur Stone Mine of M/s B.S. Stone Works (Prop. : Shri Abhishek Ranjan), Village : Samlapur, Thana no. : 80, Thana : Hiranpur, Distt.: Pakur, Jharkhand (2.23 Ha).**

(Proposal no.: SIA/JH/MIN/492525/2024)

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

This is a new project which has been taken for appraisal on 29.09.2024.

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

EC Application for: Proposed Capacity: 42,783 Cum Per Annum or 1,15,514 Ton Per Annum

Project and Location Details:

S. No	Parameter		Details	
1	Project Name	:	Samlapur Stone Mine - M/s B.S. Stone Works	
2	Proprietor	:	Shri Abhishek Ranjan	
3	Lessee Address	:	R/O- Annpurna Colony, Word no.-10, Post. - Pakur, District-Pakur, Jharkhand-816107	
4	Lease Area	:	Ha: 2.23 Ha	Acres: 5.50 Acres

5	Type of Land	:	Raiyati Land	
6	Project Cost	:	54 Lakhs	
7	EMP Budget	:	Capital: **33.58** Lakhs	Recurring: **7.5** Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	4,28,268 Cum	11,56,323 Tonnes
10	Mine Life	:	10.0 Years	
11	Man power	:	20 persons	
12	Water Requirement	:	Total water requirement is about 7.60 KLD= 0.60 (Drinking Water & Domestic Uses) + 3 KLD (Water sprinkling) + 4 KLD (plantation).	
13	Water Source	:	by Authorised hired water tankers	
14	DG Set / power	:	125 KVA (Temporary setup for Backup)	
15	Crusher	:	No	
16	Nearest Water Body	:	Bindadih Pond is about 1.42 km in ESE direction.	
17	Nearest Habitation	:	Samlapur is about 0.25 km in WSW direction	
18	Nearest Rail Station	:	Tilbhita Railway Station is about 13.99 Km in ENE direction.	
19	Nearest Airport	:	Sido Kanhu Airport is about 62.25 Km in SW direction.	
20	Nearest Forest	:	Kumarbhaja P.F. is about 10.91 km in WNW direction. Garopahari P.F. is about 5.09 km in SW direction. Bich Pahar P.F. is about 14.51 km in N direction. Dhangora Pahar P.F. is about 3.71 km in ESE direction. Houlton P.F. is about 13.5 km in W direction.	
21	Road & Highways	:	NH-133A is about 5.02 km in ENE direction. NH-333A is about 9.63 km in N direction. SH-18 is about 10.69 km in W direction.	

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24°37'44.813"N	87°42'45.263"E	13	24°37'40.535"N	87°42'48.718"E
2	24°37'44.160"N	87°42'46.120"E	14	24°37'40.791"N	87°42'46.895"E
3	24°37'43.764"N	87°42'46.805"E	15	24°37'41.097"N	87°42'44.712"E
4	24°37'44.590"N	87°42'47.438"E	16	24°37'40.969"N	87°42'43.946"E
5	24°37'45.381"N	87°42'48.015"E	17	24°37'40.158"N	87°42'42.916"E
6	24°37'45.036"N	87°42'49.621"E	18	24°37'40.541"N	87°42'42.062"E
7	24°37'44.631"N	87°42'51.351"E	19	24°37'41.225"N	87°42'42.369"E
8	24°37'43.547"N	87°42'50.903"E	20	24°37'40.908"N	87°42'43.111"E
9	24°37'42.304"N	87°42'50.324"E	21	24°37'41.941"N	87°42'43.625"E

10	24°37'40.894"N	87°42'49.605"E	22	24°37'43.145"N	87°42'44.143"E
11	24°37'40.723"N	87°42'49.916"E	23	24°37'44.059"N	87°42'44.672"E
12	24°37'40.374"N	87°42'49.863"E			

LAND DETAILS

Khata no.	Plot no.
02	284 & 285
07	283 (P)
10	281, 282 (P) & 288
15	287
16	286
18	290
21	289

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1145/M, dated 25.07.2024.
2	CO	:	The CO, Hiranpur vide letter no. 435/Ra., dated 01.09.2021 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 habitation of 10 houses at a distance of 250 meters of proposed project site, accordingly PAs has submitted EMP for the same.
3	DMO	:	DMO, Pakur vide memo no. 1231/M, dated 02.08.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribagh vide letter no. 2119, dated 02.12.2021 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide letter no. 1301, dated 25.08.2021 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1240/M, dated 05.08.2024 that this project is mentioned in approved DSR of

			Pakur District as a potential area (Sl. no. 99, Page no. 119).
7	Gram Sabha	:	BDO, Hiranpur vide letter no. 676/Vi., dated 23.09.2021 informed that Gram Sabha conducted on 15.09.2021.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1391/M, dated 30.08.2024.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM & Mechanised	
2	Lease Area	:	5.50 ACRES / 2.23 HA	Life of Mine – 10.0 years
3	Waste Generation	:	5 years– 26,591 CUM	
4	Stripping Ratio(t/m^3)	:	1:0.04	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Highest Elevation of lease Area	:	89 above MSL	
8	Lowest Elevation of lease Area		84 above MSL	
9	Ultimate Working Depth	:	54 above MSL	
10	Water Table	:	34 above MSL (50 BGL)	
11	Topography of Mine	:	Almost Flat Land With Hillocks	
12	Explosive Requirement	:	Tentative 96.78 kg/per day	
13	Diesel/Fuel requirement		452 Litres per day	

Production Details

Year	Generation of Waste/O. B in cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	12,090	41,988	1,13,368	Construction & Road
2nd	14,501	42,444	1,14,599	Construction & Road
3rd	00	42,783	1,15,514	Construction & Road
4th	00	42,526	1,14,820	Construction & Road
5th	00	39,768	1,07,374	Construction & Road
Total	**26,591**	**2,09,509**	**5,65,674**	
Stripping Ration in (m3/t)- 1:0.04				

Land Use

Category	Existing Area in Hectares	First to Fifth Years Area in Hectares	After Life of Mine Area in Hectares
Quarry	0.00	1.11	1.70 Ha area will be convert as water reservoir.
Haul Road	0.00	0.03	0.00
Proposed Crusher	0.00	0.00	Crusher not proposed
Green belt in Safety Zone	0.00	0.53	0.53
Dump with Parapet wall & Garland drain	0.00	0.21	First Year top soil will be used for plantation and rest over burden shall used for haul road dressing and backfilling
Total area in use	**0.00**	**1.88**	**2.23**
Balance unused area	2.87	0.35	0
Balance used area	0.00	0.00	0
Total Applied Lease Area	**2.23**	**2.23**	**2.23**

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	848	5300	0.53	Gulmohar, Gular, Shami, Sagwan, Sakua **<u>Fruit Bearing Trees</u>** Mango, Jackfruit, Guava
	Haul Road	3 x 3	868	650M Approach Road 650/3=Plants 217x4row=868Plant		
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			**1716**	**5300**	**0.53**	

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

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

Environment Management Budget

S.NO	Mitigative measures to protect Environment	Capital Cost (n Lakh)	Recurring cost (In Lakh)
01.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine)	25.0	4.0
02.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @No. of plants 1716 x 500Rs.	8.58	3.0
03.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	Nil	0.50
TOTAL		**33.58**	**7.5**

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

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

Undertaking submitted affirming:

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

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

Blasting Operations

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

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.

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

Handling of Explosives

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

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

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

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

Health Hazards

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

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

affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the 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.

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 Samlapur Stone Mine of M/s B.S. Stone Works (Prop. : Shri Abhishek Ranjan), Village : Samlapur, Thana no. : 80, Thana : Hiranpur, Distt.: Pakur, 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 Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in).

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

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

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

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

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

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

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

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4. **Araji Khaprajola Stone Mine of M/s New Mahadev Stone Works, Village : Araji Khaprajola, Thana no. : 91, Thana : Pakur, Distt.: Pakur, Jharkhand (1.906 Ha).**

(Proposal no.: SIA/JH/MIN /498267/2024)

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

This is a new project which has been taken for appraisal on 29.09.2024.

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

EC Application for: Proposed Capacity: 44,220 Cum Per Annum or 1,19,394 Ton Per Annum

Project and Location Details:

S. No	Parameter		Details	
1	Project Name	:	Araji Khaprajola Stone Mine - M/s New Mahadev Stone Works	
2	Partner's	:	Shri Kartik Kumar Bhagat, Sri Sobhraj Lalwani, Sri Ajay Kumar Gupta, Sri Shibjatan Hembram, Sri Rajesh Mandhyan, Sri Rakesh Hembrom.	
3	Lessee Address	:	R/O- Nabinagar, Post – Ramnagar, Thana- Pakur District-Pakur, Jharkhand-816107.	
4	Lease Area	:	Ha: 1.906 Ha	Acres: 4.71 Acres
5	Type of Land	:	Raiyati Land	
6	Project Cost	:	40.0 Lakhs	
7	EMP Budget	:	Capital: **31.54** Lakhs.	Recurring: **5.0** Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	2,20,485 Cum	5,95,309.5 Tonnes
10	Mine Life	:	5 Years	
11	Man power	:	22 persons	
12	Water Requirement	:	Total water requirement is about 7.66 KLD= 0.66 (Drinking Water & Domestic Uses) + 3 KLD (Water sprinkling) + 4 KLD (plantation).	
13	Water Source	:	by Authorised hired water tankers	
14	DG Set / power	:	125 KVA (Temporary setup for Backup)	
15	Crusher	:	No	
16	Nearest Water Body	:	Morol pukur Pond is about 3.76 km in ENE direction.	
17	Nearest Habitation	:	Khaprajolo is about 0.63 km in SW direction	
18	Nearest Rail Station	:	Nagarnabi Railway Station is about 2.58 Km in ESE direction.	
19	Nearest Airport	:	Deoghar Airport is about 116.24 Km in W direction.	

20	Nearest Forest	:	Ramnathpur P.F. is about 2.56 km in WSW direction. Dhanghara P.F. is about 8.84 km in WNW direction. Dharnipahar P.F. is about 9.93 km in WSW direction.
21	Road & Highways	:	NH 133A is about 4.14 km in N direction. SH - 7 is about 6.49 km in SSE direction.

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24°36'5.379"N	87°50'37.114"E	18	24°36'1.823"N	87°50'43.575"E
2	24°36'4.899"N	87°50'38.296"E	19	24°36'0.743"N	87°50'43.424"E
3	24°36'4.748"N	87°50'39.195"E	20	24°36'1.105"N	87°50'41.807"E
4	24°36'4.405"N	87°50'39.723"E	21	24°36'0.667"N	87°50'41.704"E
5	24°36'4.411"N	87°50'40.937"E	22	24°36'1.057"N	87°50'40.224"E
6	24°36'4.088"N	87°50'41.734"E	23	24°36'1.964"N	87°50'40.276"E
7	24°36'4.607"N	87°50'42.063"E	24	24°36'3.113"N	87°50'40.334"E
8	24°36'4.449"N	87°50'43.135"E	25	24°36'2.576"N	87°50'39.303"E
9	24°36'5.189"N	87°50'43.513"E	26	24°36'1.939"N	87°50'38.111"E
10	24°36'4.799"N	87°50'43.959"E	27	24°36'2.064"N	87°50'36.993"E
11	24°36'4.324"N	87°50'44.634"E	28	24°36'2.843"N	87°50'36.687"E
12	24°36'3.858"N	87°50'45.222"E	29	24°36'3.229"N	87°50'36.222"E
13	24°36'3.188"N	87°50'45.025"E	30	24°36'3.762"N	87°50'36.324"E
14	24°36'3.134"N	87°50'44.178"E	31	24°36'4.703"N	87°50'36.650"E
15	24°36'3.483"N	87°50'43.513"E	32	24°36'4.617"N	87°50'37.096"E
16	24°36'2.982"N	87°50'43.131"E	33	24°36'5.154"N	87°50'36.952"E
17	24°36'2.146"N	87°50'42.658"E			

LAND DETAILS

Khata no.	Plot no.
04	31, 32 & 33
02	37
01	39 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1305/M, dated 16.08.2024.

2	CO	:	The CO, Pakur vide letter no. 412/Ra., dated 24.03.2021 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Pakur vide memo no. 1365/M, dated 24.08.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribagh vide letter no. 1955, dated 14.11.2021 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide letter no. 1925, dated 10.12.2021 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1364/M, dated 24.08.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 86, Page no. 158).
7	Gram Sabha	:	BDO, Pakur vide letter no. 2041/Vi., dated 29.10.2021 informed that Gram Sabha conducted on 28.09.2021.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1579/M, dated 24.09.2024.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM & Mechanised	
2	Lease Area	:	4.71 ACRES / 1.906 HA	Life of Mine – 5 years
3	Waste Generation	:	5 years– 49,565 CUM	
4	Stripping Ratio(t/m^3)	:	1:0.08	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Highest Elevation of lease Area	:	40 above MSL	
8	Lowest Elevation of lease Area		37 above MSL	
9	Ultimate Working Depth	:	08 above MSL	
10	Water Table	:	14 above MSL (50 BGL)	
11	Topography of Mine	:	Almost Flat Land With Hillocks	

12	Explosive Requirement	:	Tentative 99.49 kg/per day
13	Diesel/Fuel requirement		492 Litres per day

Production Details

Year	Generation of Waste/O. B in cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	**20060**	**43435**	**117274.50**	Construction & Road
2nd	**00**	**43860**	**118422.00**	Construction & Road
3rd	**13500**	**44015**	**118840.50**	Construction & Road
4th	**9075**	**44025**	**118867.50**	Construction & Road
5th	**6930**	**44220**	**119394.00**	Construction & Road
Total	**49565**	**219555**	**592798.5**	
Maximum production proposed in- 49565Cum/592798.5Ton				
Stripping Ration in (m3/t)- 1:0.08				

Land Use

LAND USE PATTERN			
	Existing	**First to Fifth Years**	**After Life of Mine**
Category	**Area in Hectares**	**Area in Hectares**	**Area in Hectares**
Quarry	0.31	1.236	1.256 (0.193ha Backfilled and proposed for plantation,1.063 ha converted into water reservoir)
Haul Road	0.00	0.02	0.00
Proposed Crusher	0.00	0.00	0.00
Green belt in Safety Zone	0.00	0.65	0.65
Dump with Parapet wall & Garland drain	0.00	0.00	Top soil used for plantation in first year and rest OB will be used road dressing and Backfilling
Total area in use	0.00	1.906	1.906
Balance unused area	1.596	0.00	0.00
Balance used area	0.00	0.00	0.00
Total Applied Lease Area	**1.906**	**1.906**	**1.906**

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	1040	6500	0.65	Safety Zone Gulmohar, Gular, Sagwan, Sakua Along the Rd. fruit bearing trees Mango, Jackfruit, Guava,
	Haul Road	3 x 3	268	200M Approach Road 200/3 = 67Plants 67x4row = 268 Plant		
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			**1308**	**6500**	**0.65**	

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

Environment Management Budget

S.NO	Mitigative measures to protect Environment	Capital Cost (In Lakh)	Recurring cost (In Lakh)
01.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine)	25.0	2.5
02.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @No. of plants 1308 x 500Rs.	6.54	2.0
03.	Environment Monitoring (Air, Water, Noise	Nil	0.50

	& Soil Monitoring)		
TOTAL		**31.54**	**5.0**

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

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

Undertaking submitted affirming:

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

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

Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

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

Air Quality Management

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

i. Use of Sharp Drill Bits

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

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

- Controlled blasting would be practiced.
- Optimum quantity of explosives would be used.

- Blasting to be done during favourable weather conditions.

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

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

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

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

RISK ASSESSMENT

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

Hazard identification & Risk Analysis in Stone Mining operation

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

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

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

Preventive Measures:

Slope Failure

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

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

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
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- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
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- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
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The 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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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 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.

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 Araji Khaprajola Stone Mine of M/s New Mahadev Stone Works, Village : Araji Khaprajola, Thana no. : 91, Thana : Pakur, Distt.: Pakur, Jharkhand (1.906 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).

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

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety

zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

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

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

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

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

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

****

5. **Barhabad Stone Deposit of M/s K.R.S. Shakti Mining and Construction Pvt. Ltd., Village : Barhabad, Anchal : Pakur, Distt.: Pakur, Jharkhand (2.566 Ha).**

(Proposal no.: SIA/JH/MIN /498263/2024)

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

This is a new project which has been taken for appraisal on 29.09.2024.

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

EC Application for: Proposed Capacity: 31,587.50 Cum per Year/85,286.25 tonnes per Year or 105.29 Cum per day/284.29 Tonnes Per day.

Project and Location Details:

S. No	Parameter		Details
1	Project Name	:	Barhabad Stone Deposit (M/s K.R.S. Shakti Mining and Construction Pvt. Ltd)

2	Lessee/ Director	:	Shri Kanchan Yadav, Shri Ram Prakash & Shri Sanjay Kumar Yadav.	
3	Lessee Address	:	Tulsipur, Po- Ghanghari, District- Chatra, Jharkhand.	
4	Lease Area	:	Ha: 2.566 Ha	Acres: 6.34 Acres
5	Type of Land	:	Raiyati Land	
6	Project Cost	:	64 Lakhs	
7	EMP Budget	:	Capital: **30.49** Lakhs	Recurring: **4.5** Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	3,16,948.5 Cum	8,55,760.95Tonnes
10	Mine Life	:	10.0 Years	
11	Man power	:	22 persons	
12	Water Requirement	:	Total water requirement is about 13.77 KLD=0.77 KLD (Drinking & Domestic Uses) + 5.0 (Plantation) KLD + 8.0 KLD (Dust Suppression).	
13	Water Source	:	by Authorised hired water tankers	
14	DG Set / power	:	125 KVA (Temporary setup for Backup)	
15	Crusher	:	No	
16	Nearest Water Body	:	Barhabad Pond is about 0.75 km in S direction. Nallah nearby Barhabad is about 0.61 km in NNE direction.	
17	Nearest Habitation	:	Barhabad is about 0.59 km in ENE direction	
18	Nearest Rail Station	:	Malpahari Railway Station is about 5.25 Km in ESE direction.	
19	Nearest Airport	:	Deoghar Airport is about 109.67 Km in WSW direction.	
20	Nearest Forest	:	DHANGHARA P.F. — 2.55 — WNW DHARNIPAHAR P.F. — 3.88 — SW PIARSOLA P.F. — 4.04 — WSW POKHARIA P.F. — 5.55 — WSW DALDALI P.F. — 5.45 — WNW	
21	Road & Highways	:	NH-133A is about 4.31 km in NE direction. SH-18 is about 3.9 km in 18.21 direction.	

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24°36'37.140"N	87°46'57.511"E	**9**	24°36'45.210" N	87°46'57.489"E
2	24°36'37.416"N	87°46'55.993"E	**10**	24°36'46.109" N	87°46'58.249"E
3	24°36'39.734"N	87°46'55.834"E	**11**	24°36'45.306" N	**87°46'59.826"E**

4	24°36'41.410"N	87°46'55.979"E	**12**	24°36'44.461" N	87°47'1.652"E
5	24°36'42.973"N	87°46'56.372"E	**13**	24°36'43.193" N	87°47'0.778" E
6	24°36'44.086"N	87°46'56.809"E	**14**	24°36'42.174" N	87°46'59.879"E
7	24°36'44.377"N	87°46'55.402"E	**15**	24°36'40.729"N	87°46'59.153"E
8	24°36'46.027"N	87°46'56.024"E	**16**	24°36'38.699"N	87°46'58.285"E

LAND DETAILS

Khata no.	Plot no.
73	425
23	390
24	391 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1425/M, dated 05.09.2024.
2	CO	:	The CO, Pakur vide letter no. 257/Ra., dated 06.03.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Pakur vide memo no. 1557/M, dated 20.09.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 366, dated 22.02.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide letter no. 129, dated 25.01.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1558/M, dated 20.09.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 91, Page no. 150).
7	Gram Sabha	:	BDO, Pakur vide letter no. 1610/Vi., dated 19.07.2024 informed that Gram Sabha conducted on 19.07.2024.

8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1582/M, dated 24.09.2024.
9	Qualified Person	:	Shri Vidya Bhushan Mishra has confirmed vide letter dated 27.09.2024 that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM & Semi-Mechanised	
2	Lease Area	:	6.34 ACRES / 2.566 HA	Life of Mine – 10.0 years
3	Waste Generation	:	5 years– 41522.50	
4	Stripping Ratio(t/m^3)	:	1:0.20	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Highest Elevation of lease Area	:	66 above MSL	
8	Lowest Elevation of lease Area		62 above MSL	
9	Ultimate Working Depth	:	30 above MSL	
10	Water Table	:	20 above MSL	
11	Topography of Mine	:	almost flat land with hillocks	
12	Explosive Requirement	:	71 kg	
13	Diesel/Fuel requirement		120 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	31587.50	85286.25	15050.00	1662.50	16712.50
2nd	30723.00	82952.10	3780.00	1617.00	5397.00
3rd	30723.00	82952.10	14586.00	1617.00	16203.00
4th	30540.60	82459.62	**0.00**	1607.40	1607.40
5th	30449.40	82213.38	**0.00**	1602.60	1602.60
Total	**154023.50**	**415863.45**	**33416.00**	**8106.50**	**41522.50**

Land Use

Land Utilization	Existing Land use (Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)
Excavation	**0.0**	1.137	1.980 (0.209 ha area shall be Backfilled and used for plantation, 1.771ha converted into water reservoir)
Waste Dump	0.00	0.265	Nil (waste dump to be removed and backfilled)
Road	0.0	0.086	0.0
Infrastructure (Crusher)	0.0	0.0	0.0
Safety Zone Plantation	0.0	0.586	0.586
Total	0.00	2.074	2.566
Unused Area	2.566	**0.492**	0.00
Total Lease Area	**2.566**		

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	938	5860	0.586	Gulmohar, Gular, Sagwan, Sakua Fruit Bearing Trees Mango, Jackfruit, Guava
	Haul Road	3 x 3	1028	770M Approach Road 770/3=257Plants 100x4row=1028Plant		
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			**1966**	**5860**	**0.586**	

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

Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST			
S.NO.	**Mitigative measures to protect Environment**	**Capital Cost (in Lakh)**	**Recurring cost (In Lakh)**
01.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine)	20.66	2.0
02.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @ No. of plants 1966 x 500Rs.	9.83	2.0
03.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	Nil	0.50
TOTAL		**30.49**	**4.5**

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx In the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly

4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Undertaking submitted affirming:

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

Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

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

- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

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

Mitigation measures:

i. Use of Sharp Drill Bits

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

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

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

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

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

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

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

RISK ASSESSMENT

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

Hazard identification & Risk Analysis in Stone Mining operation

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

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

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

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

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

Preventive Measures:

Slope Failure

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

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

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

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

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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 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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- 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.
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- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
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The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

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

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

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

Transportation

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

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

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

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 Barhabad Stone Deposit of M/s K.R.S. Shakti Mining and Construction Pvt. Ltd., Village : Barhabad, Anchal : Pakur, Distt.: Pakur, Jharkhand (2.566 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).

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. **Barhabad Stone Deposit of M/s B.S. Stone Works (Prop. : Shri Abhishek Ranjan), Village : Barhabad, Anchal : Pakur, Distt.: Pakur, Jharkhand (2.428 Ha).**

(Proposal no.: SIA/JH/MIN /498233/2024)

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

This is a new project which has been taken for appraisal on 29.09.2024.

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

EC Application for: Proposed Capacity: 58970 Cum Per Year/159219.81 tonnes Per Year or 196.56 Cum Per Day/530.73 Tonnes Per day.

Project and Location Details:

S. No	Parameter		Details		
1	Project Name	:	Barhabad Stone Deposit (M/s B.S. Stone Works)		
2	Proprietor	:	Shri Abhishek Ranjan		
3	Lessee Address	:	Annapurna Colony, Po+ District- Pakur, Jharkhand		
4	Lease Area	:	Ha: 2.428 Ha	Acres: 6.00 Acres	
5	Type of Land	:	Raiyati Land		
6	Project Cost	:	64 Lakhs		
7	EMP Budget	:	Capital: **24.36** Lakhs	Recurring: **5.0** Lakhs / year	
8	New or Expansion	:	New		
9	Mineable Reserves	:	579844.85 Cum	1565581.1 Tonnes	
10	Mine Life	:	10.0 Years		
11	Man power	:	22 persons		
12	Water Requirement	:	Total water requirement is about 13.77 KLD=0.77 KLD (Drinking & Domestic Uses) + 5.0 (Plantation) KLD + 8.0 KLD (Dust Suppression).		
13	Water Source	:	by Authorised hired water tankers		
14	DG Set / power	:	125 KVA (Temporary setup for Backup)		
15	Crusher	:	No		
16	Nearest Water Body	:	Barhabad Pond is about 0.60 km in S direction. Nallah nearby Barhabad is about 1.50 km in NNE direction.		
17	Nearest Habitation	:	Barhabad is about 0.59 km in ENE direction		
18	Nearest Rail Station	:	Malpahari Railway Station is about 5.25 Km in ESE direction.		
19	Nearest Airport	:	Deoghar Airport is about 109.67 Km in WSW direction.		
20	Nearest Forest	:	DHANGHARA P.F.	2.55	WNW
			DHARNIPAHAR P.F.	3.88	SW
			PIARSOLA P.F.	4.04	WSW

			POKHARIA P.F.	5.55	WSW
			DALDALI P.F.	5.45	WNW
21	Road & Highways	:	NH-133A is about 4.31 km in NE direction. SH-18 is about 3.9 km in 18.21 direction.		

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24°36'41.771" N	87°46'59.600" E	**8**	24°36'36.734" N	87°47'1.425" E
2	24°36'40.735" N	87°47'2.033" E	**9**	24°36'35.643" N	87° 47'0.684" E
3	24°36'39.917" N	87°47'4.331" E	**10**	24°36'36.007" N	87°46'59.066" E
4	24°36'39.585" N	87°47'5.373" E	**11**	24°36'36.425" N	87°46'57.215" E
5	24°36'38.595" N	87°47'4.567" E	**12**	24°36'37.530" N	87°46'57.750" E
6	24"36'37.458" N	87°47'3.850" L	**13**	24°36'38.949" N	87°46'58.422" E
7	24°36'36.280" N	87°47'3.241" E	**14**	24°36'40.265" N	87°46' 9.020" E

LAND DETAILS

Khata no.	Plot no.
43	414 (P), 422 (P) & 426
64	424 & 427
45	423
4	396 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1539/M, dated 19.09.2024.
2	CO	:	The CO, Pakur vide letter no. 256/Ra., dated 06.07.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Pakur vide memo no. 1572/M, dated 23.09.2024 certified that 01 other mining lease area (6.34 Acre) exists within 500 meters radius from proposed project site and total area is 12.34 Acre or 4.99 Ha.

4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 367, dated 22.02.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide letter no. 128, dated 25.01.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1571/M, dated 23.09.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 91, Page no. 150).
7	Gram Sabha	:	BDO, Pakur vide letter no. 1603/Vi., dated 18.07.2024 informed that Gram Sabha conducted on 16.07.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1581/M, dated 24.09.2024.
9	Qualified Person	:	Shri Vidya Bhushan Mishra has confirmed vide letter dated 27.09.2024 that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM & Semi-Mechanised	
2	Lease Area	:	6.00 ACRES / 2.428 HA	Life of Mine – 10.0 years
3	Waste Generation	:	5 years– 54025.70 CUM	
4	Stripping Ratio(t/m^3)	:	1:0.02	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Highest Elevation of lease Area	:	68 above MSL	
8	Lowest Elevation of lease Area		63 above MSL	
9	Ultimate Working Depth	:	30 above MSL	
10	Water Table	:	20 above MSL (10 BGL)	
11	Topography of Mine	:	almost flat land with hillocks.	
12	Explosive Requirement	:	Tentative 132.66 kg	
13	Diesel/Fuel requirement		492 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	57100.70	154171.89	38786.00	3005.30	41791.30
2nd	57490.20	155223.54	0.00	3025.80	3025.80
3rd	57723.90	155854.53	0.00	3038.10	3038.10
4th	58269.20	157326.84	0.00	3066.80	3066.80
5th	58970.30	159219.81	0.00	3103.70	3103.70
Total	289554.30	781796.61	38786.00	15239.70	54025.70

Land Use

Land Utilization	Existing Land use (Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)
Excavation	**0.0**	**1.092**	1.966 (0.301ha area shall be Backfilled and used for plantation, 1.665ha converted in to water reservoir)
Waste Dump	0.00	0.565	Nil (waste dump to be removed and backfilled)
Road	0.0	0.004	0.0
Infrastructure (Crusher)	0.0	0.0	0.0
Safety Zone Plantation	0.0	0.462	0.462
Total	0.00	**2.123**	2.428
Unused Area	**2.428**	**0.305**	**0.00**
Total Lease Area	**2.428**		

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	740	4620	0.462	**Safety**

	Haul Road	3.0 x 3.0	572	430 m Approach Rd. Two row both side 430/3=143 143*4= 572Plants		**Zone** Gulmohar, Gular, Sagwan, Sakua **Along the Rd. fruit bearing trees** Mango, Jackfruit, Guava,
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			**1312**	**4620**	**0.46**	

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

Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST			
S.NO	Mitigative measures to protect Environment	Capital Cost (in Lakh)	Recurring cost (In Lakh)
01.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine)	20.66	2.5
02.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @ No. of plants 740 x 500Rs.	3.70	2.0
03.	Environment Monitoring (Air, Water, Noise	Nil	0.50

	& Soil Monitoring)		
TOTAL		**24.36**	**5.0**

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

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

Undertaking submitted affirming:

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

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

Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

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

Air Quality Management

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

i. Use of Sharp Drill Bits

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

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

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

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

v. Loading of Product on Truck – Water will be sprinkled on blasted stone mass before

they are loaded to trucks for transport.

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

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

RISK ASSESSMENT

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

Hazard identification & Risk Analysis in Stone Mining operation

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

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

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

Preventive Measures:

Slope Failure

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

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.

- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

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

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

Falls from the edge of a bench

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

Control Measures

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

Dust generation during drilling

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

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the

drill hole continuously and discharges the same in a dust collector specially provided for the purpose.

- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

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

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

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

Blasting Operations

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

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

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Barhabad Stone Deposit of M/s B.S. Stone Works (Prop. : Shri Abhishek Ranjan), Village : Barhabad, Anchal : Pakur, Distt.: Pakur, 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.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"Ek Ped Ma Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in).

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety

zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

****

7. **Pratappur Stone Mine of Shri Lutful Haque, Village : Pratappur, Thana no. : 104, Thana : Hiranpur, Distt. : Pakur, Jharkhand (2.826 Ha).**

(Proposal No : SIA/JH/MIN/ 497856/2024)

EC Application for: Proposed Capacity: 85,738 Cum/Annum/2,40,066 Ton/Annum

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 29.09.2024.

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 113th meeting held on 30.05.2024 to 03.06.2024 and SEIAA, Jharkhand has approved the ToRs in 113th meeting held on 07th & 08th June, 2024. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/3142/2024/111, dated 14.06.2024. The final EIA / EMP submitted by PP to SEAC on 25.09.2024.

Project and Location Details:

S. No	Parameter		Details	
1	Project Name	:	Pratappur Stone Mine	
2	Proprietor	:	Shri Lutfal Haque S/O-Abdul Rajjak	
3	Lessee Address	:	R/O-Gram – Aditya Nagar, P.O – Bhasai Paikar, Thana – Shamsherganj, District- Murshidabad, W.B	
4	Lease Area	:	Ha: 2.826 Ha	Acres: 6.98 Acres
5	Type of Land	:	Raiyati Land	
6	Project Cost	:	61.0 Lakhs	
7	EMP Budget	:	Capital: 27.1 Lakhs	Recurring: 9.27 Lakh / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	6,64,489 Cum	18,60,569 Ton
10	Mine Life	:	07 Years and 07 Months	
11	Man power	:	24 persons	
12	Water Requirement	:	Total water requirement is about 7.72 KLD=0.72 KLD (Drinking & Domestic Uses) + 4.0 (Plantation) KLD + 3.0 KLD (Dust Suppression).	
13	Water Source	:	By Authorised hired water tankers	
14	DG Set / power	:	125 KVA (Temporary setup for Backup)	
15	Crusher	:	Yes (Capacity-100ton/h) (Crusher)	
16	Nearest Water Body	:	Pratappur Village Pond is about 0.17 km in W direction.	
17	Nearest Habitation	:	Nearest Habitation is about 0.24 km in N direction	
18	Nearest Rail Station	:	Tabitha railway station is about 7.67 km in ESE direction.	
19	Nearest Airport	:	Deoghar airport, is about 111.63 km in WSW direction.	
20	Nearest Forest	:	Houlton P.F. is 9.85 Km in NW direction.	
21	Road & Highways	:	NH-133A is about 3.23 km in SW direction.	

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24° 41' 58 650" N	87° 46' 7.314" E	15	24° 41' 54.254" N	87° 46' 11.171" E
2	24° 41' 57 588" N	87° 46' 6.849" E	16	24° 41' 54.311" N	87° 46' 12.537" E
3	24° 41' 57.275" N	87° 46' 7.000" E	17	24 41 54.030" N	87° 46' 12.983" E
4	24° 41'56.665" N	87° 46' 6.467" E	18	24° 41' 52.953" N	87° 46' 13.200" E
5	24° 41' 55.945" N	87° 46' 6.297" E	19	24° 41' 53.000" N	87° 46' 14.530" E
6	24° 41' 54 644" N	87° 46' 6.419" E	20	24° 41' 54.290" N	87° 46' 14.679" E
7	24° 41' 52.999" N	87° 46' 6.432" E	21	24° 41' 55.036" N	87° 46' 13.836" E

8	24° 41' 52.606" N	87° 46' 7.607" E	22	24° 41' 56.584" N	87° 46' 13.940" E
9	24° 41' 52.316" N	87° 46' 7.511" E	23	24° 41 ' 58.813"N	87° 46' 13.318" E
10	24° 41' 51.706" N	87° 46' 9.073" E	24	24° 41'57.867" N	87° 46' 13.353" E
11	24° 41' 52.188" N	87° 46' 9.276" E	25	24° 41' 58.074" N	87° 46' 12.619" E
12	24° 41' 53.230" N	87° 46' 9.553" E	26	24° 41' 57 091" N	87° 46' 11.495" E
13	24° 41' 54.184" N	87° 46 10 112" E	27	24° 41' 57.404" N	87° 46' 10 261" E
14	24° 41' 54.277" N	87° 46' 10.901" E	28	24° 41' 57.927" N	87° 46' 8.943" E

LAND DETAILS

Khata no.	Plot no.
06	553, 554 (P), 555 & 556
07	557, 559, 560, 561, 562, 563, 564, 565, 558, 491, 492, 493, 494, 495, 496, 497, 498, 499, 489, 500 (P)
08	484, 485, 486, 487
09	552
10	490, 488, 600, 601, 602 & 603 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 2551/M, dated 01.12.2023.
2	CO	:	The CO, Hiranpur vide letter no. 108/Ra., dated 03.03.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Pakur vide memo no. 147/M, dated 29.01.2024 certified that 04 other mining lease area (6.55 Acre, 2.60 Acre, 5.81 & 6.03 Acre) exists within 500 m radius from proposed project site and total area is 27.97 Acre (11.32 Ha).
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1594, dated 28.08.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Pakur Forest Division vide letter no. 269, dated 06.02.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.

6	DSR	:	The DMO, Pakur has been certified vide memo no. 181/M, dated 01.02.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 40, Page no. 119).
7	Gram Sabha	:	BDO, Hiranpur vide letter no. 178/Vi., dated 28.01.2023 informed that Gram Sabha conducted on 25.01.2023.
8	Mine Plan Approval	:	Approved by Deputy Director Mines, Santhal Pargana Circle, Dumka vide Memo No. 22/DDM, dated 24.01.2024.
9	Public Hearing	:	Public Hearing conducted on 20.09.2024.
10	Baseline Data Period	:	March, 2024 to May, 2024.
11	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM & Mechanised	
2	Lease Area	:	2.826 ha/6.98Acre	Life of Mine – 7.7 years
3	Waste Generation	:	5 years–40016CUM	
4	Stripping Ratio	:	1:0.16	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m (05 No. of Benches)	
7	Highest Elevation of lease Area	:	54 AMSL	
8	Lowest Elevation of lease Area		53 AMSL	
9	Ultimate Pit Limit Depth (m) Plan Period Depth (m)	:	22 AMSL	
10	Water Table	:	12 AMSL (40BGL) (from Lowest elevation)	
11	Topography of Mine	:	Uneven land	
12	Explosive Requirement	:	Tentative 110.25 kg/per day	
13	Diesel/Fuel requirement		608 Litre per day	

Production Details

Year	Generation of Waste/O. B in cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	21756	85631	239767	**Construction & Road**
2nd	18260	83556	233957	**Construction & Road**
3rd	0	83526	233873	**Construction & Road**
4th	0	83574	234007	**Construction & Road**

5th	0	85738	240066	**Construction & Road**
Total	**40016**	**422025**	**1181670**	
Stripping Ration in (m3/t)- 1:0.16				

Land Use

Category	Area in Hectares	Area in Hectares	Area in Hectares
Quarry	0	1.73	2.20 ha area will be converted as water reservoir
Haul Road	0	0.02	0.00
Proposed Crusher	0	0.09	Remove from lease area
Green belt in Safety Zone	0	0.63	0.63
Dump with Parapet wall & Garland drain	0	0.03	Top soil used for Plantation, Haul Road Renovation & Backfilling
Total area in use	**0**	**2.50**	**2.83**
Balance unused area	2.83	0.33	0
Balance used area	0	0	0
Total Applied Lease Area	**2.83**	**2.83**	**2.83**

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.63 Ha	1008 trees @ 1600 trees per ha
2	Other Reclaimed Area	:	NIL	NIL
3	Haul /Approach Road	:	168 m	Road length-168 Mtr Two Row Planation= 168 m/3x3 Spacing =112 Plant one side 112 x 2= 224 Plants
Total				1232

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Plan Budget

S.No.	Description	Budget Provision (Rs.)	
		Capital	Recurring
WATER DEMAND			
1(a)	Fixed overhead water sprinkling system with solar pump for commuting transport vehicles for haul roads and greenbelts 5 KL tanker capacity for 7 KLD for 300 days cost Rs. 500/- per tanker	1,00,000	2,10,000
	A dedicated tanker of 5 KL for greenbelt management	10,00,000	50,000
1(b)	Discharge of hired waste water tanker for 0.55 KLD @5 KL tanker capacity 300 days, Rs.2000 per tanker	0	66,000
2	Preparation and maintenance of approach road (maximum road length 240 m, width 4.0 m) @ Rs.600/metre.	1,20,000	12,000
3	Monitoring (air, water, soil and noise)	0	1,00,000
4	Settling Tank (2) (LBH 12m*7m*4m) & Garland	3,50,000	42,000
5	Wire Fencing 885 m (Perimeter) x 600/- m	5,31,000	53,000
TREE PLANTING SCHEME			
Tree plantation in consultation with DFO and Gram Panchayat			
6	Green Belt Development Protection Zone 7.5 m along the road (including hedges and fencing and tree guards on approach road) 1232 plants x Rs 500 per plant.	6,16,000	1,00,000
SOLID WASTE MANAGEMENT			
7	2 dustbins	1,500	5,000
8	Transportation of waste for disposal		
OTHER			
9	Time Bound action Plan with Budgetary Allocation	Nil	2,90,000
	Total	**2718500**	**9,27,000**

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly

4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Time Bound action Plan with Budgetary Allocation

Sl. No.	Activities as per Public Hearing	Year of Implementation & Budgets					Total
		1st Year	2nd Year	3rd Year	4th Year	5th Year	
1	Maintenance and Repairment of road	40,000	40,000	40,000	40,000	40,000	2,00,000
2	Compensatory budget for an accident due to the fall of cow, bull, goat etc. in the mine	40,000	40,000	40,000	40,000	40,000	2,00,000
3	For water facility for the villagers (Repairing of non-functional hand pumps in the villages.)	50,000	50,000	50,000	50,000	50,000	2,50,000
4	Compensatory budget for Cracks appears in the walls of the school and the houses/Indira Niwas of the villagers	30,000	30,000	30,000	30,000	30,000	1,50,000
6	Health checkup	24*1250 = 30,000	24*1250= 30,000	24*1250 = 30,000	24*1250= 30,000	24*1250 = 30,000	1,50,000
7	Money should be given for food and drink during Sohrai and other festivals in the year.	50,000	50,000	50,000	50,000	50,000	2,50,000
8	Distribution of 250 blankets nearby villages	50,000	50,000	50,000	50,000	50,000	2,50,000
	Total	2,90,000	2,90,000	2,90,000	2,90,000	2,90,000	14,50,000

Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

a. Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.

b. Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.

c. Water pumped out from quarry would be collected in a settling sump to be located within

lease area. Desilted water will be allowed to flow into natural drainage.
d. Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
e. Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
f. Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.
Mitigation measures:

i. Use of Sharp Drill Bits

ii. Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

iii. Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

a. Controlled blasting would be practiced

b. Optimum quantity of explosives would be used.

c. Blasting to be done during favorable weather conditions.

iv. Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.
v. Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.
vi. Movement of Trucks on Road – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken

- Regular water sprinkling on Gaul road by using water Tankers.
- Regular repair of Haul road
- All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5

5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or

maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench.
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation .
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.
- The storage of the explosives and its transfer to and from the quarry area shall be strictly in
  accordance with the conditions listed in the permission granted by Explosives Department.
  Few conditions are listed below:
- Proper and safe storage of explosives in approved and Licensed Magazine

- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to 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 Pratappur Stone Mine of Shri Lutful Haque, Village : Pratappur, Thana no. : 104, Thana : Hiranpur, Distt. : Pakur, Jharkhand (2.826 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).

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

****

8. **Suraidih Stone Mine of M/s Samid Stone Works (Prop. : Mr. Samid Ansari), Village : Suraidih, Thana no. : 66, Thana : Hiranpur, Distt.: Pakur, Jharkhand (2.21 Ha).**

(Proposal no.: SIA/JH/MIN /493054 /2024)

Name of the consultant : Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 29.09.2024.

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: 28,466 Cum/Annum/76,858 Ton/Annum

Project and Location Details:

S. No	Parameter		Details	
1	Project Name	:	Suraidih Stone Mine (M/S Samid Stone Works)	
2	Proprietor	:	Sri Samid Ansari	
3	Lessee Address	:	R/O- Rampur, Post –Pakur Thana - Pakur, District- Pakur, Jharkhand	
4	Lease Area	:	2.21 Ha	5.45 Acres
5	Type of Land	:	Raiyati Land	
6	Project Cost	:	37.0 Lakhs	
7	EMP Budget	:	Capital: 25.22Lakhs	Recurring: 6.46 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	1,98,976 Cum	5,37,235 Tonnes
10	Mine Life	:	07 Years	
11	Man power	:	18 persons	
12	Water Requirement	:	Total water requirement is about 7.54 KLD = 0.54 KLD (Drinking & Domestic Uses) + 4.0 (Plantation) KLD + 3.0 KLD (Dust Suppression).	
13	Water Source	:	By Authorised hired water tankers.	
14	DG Set / power	:	125 KVA (Temporary setup for Backup)	
15	Crusher	:	No	
16	Nearest Water Body	:	Torai Nadi is about 2.0 km in SSW direction. Kanli Nadi is about 8.85 km in NNE direction.	
17	Nearest Habitation	:	Suraidih Village is about 0.17 km in ESE direction	
18	Nearest Rail Station	:	Kotalpukur Railway station is about 9.73 km in ENE direction. Tilbhita Railway station is about 10.49 km in ESE direction.	
19	Nearest Airport	:	Deoghar Airport is about 108.34 km in WSW direction.	
20	Nearest Forest	:	**Forest Name** / **Distance (Km)** / **Direction** Talbaria P. F. / 9.65 / SW	

			Dhangora P.F.	7.87	S
21	Nearest State Highway/ National highway	:	NH-133A is about 0.78 km in SSW direction.		

CO-ORDINATES:

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24°41'57.018"N	87°44'19.342"E	13	24°41'46.795"N	87°44'29.196"E
2	24°41'56.730"N	87°44'19.998"E	14	24°41'47.275"N	87°44'28.014"E
3	24°41'56.327"N	87°44'19.890"E	15	24°41'48.226"N	87°44'27.465"E
4	24°41'55.510"N	87°44'20.993"E	16	24°41'50.162"N	87°44'25.050"E
5	24°41'54.493"N	87°44'22.230"E	17	24°41'50.417"N	87°44'25.135"E
6	24°41'53.449"N	87°44'23.748"E	18	24°41'51.729"N	87°44'23.045"E
7	24°41'52.075"N	87°44'25.746"E	19	24°41'52.106"N	87°44'21.264"E
8	24°41'51.044"N	87°44'26.971"E	20	24°41'53.545"N	87°44'21.735"E
9	24°41'49.753"N	87°44'28.504"E	21	24°41'54.162"N	87°44'20.064"E
10	24°41'49.177"N	87°44'29.188"E	22	24°41'54.541"N	87°44'17.795"E
11	24°41'48.332"N	87°44'29.737"E	23	24°41'55.744"N	87°44'18.694"E
12	24°41'47.320"N	87°44'29.472"E			

LAND DETAILS

Khata no.	Plot no.
04	140 (P)
06	73 (P)
09	426 (P) & 427 (P)
29	74 (P) & 75 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1140/M, dated 24.07.2024.
2	CO	:	The CO, Hiranpur vide letter no. 386/Ra., dated 24.07.2023 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 habitation of 15 houses at a distance of 400 meters of proposed project site.
3	DMO	:	DMO, Pakur vide memo no. 1230/M, dated 02.08.2024 certified that 02 other mining area (6.43 Acre & 6.94 Acre) exists within 500 meters radius from proposed project site and total area is 18.82

			Acre or 7.62 Ha.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1812, dated 12.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide letter no. 1103, dated 14.08.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1198/M, dated 31.07.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 42, Page no. 119).
7	Gram Sabha	:	BDO, Hiranpur vide letter no. 718/Vi., dated 15.07.2023 informed that Gram Sabha conducted on 08.07.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1327/M, dated 17.08.2024.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM & Mechanised	
2	Lease Area	:	5.45 Acre/2.21 ha.	Life of Mine – 7 years
3	Waste Generation	:	5 years– 51,465 CUM	
4	Stripping Ratio	:	1:0.1	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m (04 No. of Benches)	
7	Highest Elevation of lease Area	:	86 AMSL	
8	Lowest Elevation of lease Area		83 AMSL	
9	Ultimate Pit Limit Depth (m)	:	60 AMSL	
10	Water Table	:	35mBGL	
11	Topography of Mine	:	Almost flat land with hillocks	
12	Explosive Requirement	:	Tentative 63.78 kg/per day	
13	Diesel/Fuel requirement		452 Litre per day	

Production Details

Year	Production of Stone in Cum	Production of Stone in Tonnes	Generation of Waste/O. B in cum	Grade/Uses
1st	28319	76461	23710	Construction & Road
2nd	28441	76791	21430	Construction & Road
3rd	28466	76858	00	Construction & Road

4th	28379	76623	00	Construction & Road
5th	28180	76086	6325	Construction & Road
Total	**141785.00**	**382820.00**	**51465.00**	
Maximum production proposed in- 28,466 Cum/76,868 Ton				
Stripping Ration in (t/m3)- 1:0.1				

Land Use Pattern

LAND USE PATTERN			
	Existing	First to Fifth Years	After Life of Mine
Category	**Area in Hectares**	**Area in Hectares**	**Area in Hectares**
Quarry	0.00	1.01	1.50 ha area will be convert as water reservoir
Haul Road	0.00	0.02	0.00
Proposed Crusher	0.00	0.00	0.00
Green belt in Safety Zone	0.00	0.71	0.71
Dump with Parapet wall & Garland drain	0.00	0.15	Top soil will be used for plantation and rest overburden shall use for haul road dressing and backfilling
Total area in use	0.00	**1.89**	**2.21**
Balance unused area	2.21	0.32	0
Balance used area	0.00	0.00	0
Total Applied Lease Area	**2.21**	**2.21**	**2.21**

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	1136	7100	0.71	Gulmohar, Gular, Shami, Sagwan, Sakua <u>Fruit Bearing</u> <u>Trees-</u> Mango, Jackfruit,
	Haul Road	3.0 x 3.0	300	200Meter Approach Rd. 300/3=100Plants 100*4=400 Plants		
2nd	Care &Protection	---	---	---	---	
3rd	Care &Protection	---	---	---	---	

4th	Care &Protection	---	---	---	---	Guava
5th	Care &Protection	---	---	---	---	
Total			**1536**	**7100**	**0.71**	

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Plan Budget

S .NO.	Particulars	Budget Provisions (Rs)	
		Capital	Recurring
Water Demand			
1(a)	Fixed Overhead water sprinkling system with solar pump for outgoing and incoming transportation vehicles for haul road and greenbelt.	1,00,000	2,10,000
	Cost for 300 days for 7 KLD @5 KL tanker capacity, Rupees 500/- per tanker		
	& One dedicated tanker of 5 KL for Greenbelt Management	10,00,000	-
1(b)	Discharge of hired wastewater tanker 300 days for 0.44 KLD @5 KL tanker capacity, Rupees 2000/per tanker	0	52,800
2	Prepare & Maintenance of approach road (Max. Road length 300 m, Width 4.0 m) @ 500Rs. /Meter.	1,50,000	15,000
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	20,000
5	Wire Fence 993 m (perimeter) x 300 /– meter	2,97,900	29,800
Plantation Scheme			
Plantation in consultation with DFO & Gram Panchayat			
6	Green belt development safety zone 7.5mtr and along the road (for each plants including hedges and fences and tree guard at approach roads) 1536 No. of plants x 500 Rs.	7,68,000	2,00,000
Solid Waste Management			
7	Bins 2 Nos.	1,500	4,000
8	Transport of Waste for disposal	5,000	
9	Vehicle Maintenance +PUC Certification	Nil	15,000
Total EMP Cost		**25,22,400**	**6,46,600**

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx In the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.

k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

a. Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.

b. Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.

c. Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.

d. Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.

e. Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.

f. Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

i. Use of Sharp Drill Bits

ii. Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

iii. Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

a. Controlled blasting would be practiced

b. Optimum quantity of explosives would be used.

c. Blasting to be done during favorable weather conditions.

iv. Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

v. Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

vi. Movement of Trucks on Road – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken

- Regular water sprinkling on Gaul road by using water Tankers.
- Regular repair of Haul road
- All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench.
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.

- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to 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.

Baseline data yet to be generated.

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 27, 28, 29, 30.09.2024 & 01.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure 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 MeriLiFE Portal (https://merilife.nic.in).

II. The detailed EMP is to be prepared for the Habitation existing within an area of 500 meter radius of proposed project boundary. This EMP is to be included in EIA report.

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9. **Suraidih Stone Mine of Mr. Muktar Momin, Village : Suraidih, Thana no. : 66, Thana : Hiranpur, Distt.: Pakur, Jharkhand (2.603 Ha).**

(Proposal no.: SIA/JH/MIN /498236 /2024)

Name of the consultant : Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 29.09.2024.

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: 30,720 Cum/Annum/82,944 Ton/Annum

Project and Location Details:

S. No	Parameter		Details	
1	Project Name	:	Suraidih Stone Mine	
2	Proprietor	:	Mr. Muktar Momin.	
3	Lessee Address	:	R/O- Gram- Rampur District- Pakur, Jharkhand.	
4	Lease Area	:	2.603 Ha	6.43 Acres
5	Type of Land	:	Raiyati Land	
6	Project Cost	:	31.0 Lakhs	
7	EMP Budget	:	Capital: 23.15Lakhs	Recurring: 7.0 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	3,00095 Cum	8,10,256.5 Tonnes
10	Mine Life	:	10 Years	
11	Man power	:	18 persons.	
12	Water Requirement	:	Total water requirement is about 7.54 KLD = 0.54 KLD (Drinking & Domestic Uses) + 4.0 (Plantation) KLD + 3.0 KLD (Dust Suppression).	
13	Water Source	:	The drinking water will be available from nearby village by tractor tank manually by labors at the site.	
14	DG Set / power	:	125 KVA (Temporary setup for Backup)	
15	Crusher	:	No	
16	Nearest Water Body	:	Pond near Suraidih village is about 0.33 km in ENE direction.	
17	Nearest Habitation	:	Suraidih Village is about 0.17 km in N direction	
18	Nearest Rail Station	:	Kotalpukur Railway station is about 9.51 km in ENE direction. Tilbhita Railway station is about 10.7 km in ESE direction.	
19	Nearest Airport	:	Deoghar Airport is about 108.44 km in WSW direction.	
20	Nearest Forest	:	**Forest Name** / **Distance (Km)** / **Direction** Protected Forest / 0.86 / N Protected Forest / 1.45 / NW	

21	Nearest State Highway/ National highway	:	NH-133A is about 0.68 km in WSW direction. SH – 18 is about 12.78 km in W direction.

CO-ORDINATES:

S.No.	Latitude	Longitude	S.No.	Latitude	Longitude
1	24°41'38.564"N	87°44'35.599"E	13	24°41'32.899"N	87°44'36.250"E
2	24°41'38.311"N	87°44'36.977"E	14	24°41'33.287"N	87°44'35.013"E
3	24°41'38.032"N	87°44'38.495"E	15	24°41'33.866"N	87°44'35.295"E
4	24°41'38.736"N	87°44'38.844"E	16	24°41'34.104"N	87°44'33.887"E
5	24°41'38.308"N	87°44'40.183"E	17	24°41'34.349"N	87°44'32.443"E
6	24°41'37.941"N	87°44'41.178"E	18	24°41'33.300"N	87°44'32.139"E
7	24°41'37.423"N	87°44'41.848"E	19	24°41'34.565"N	87°44'30.908"E
8	24°41'36.862"N	87°44'40.958"E	20	24°41'36.021"N	87°44'31.265"E
9	24°41'36.303"N	87°44'39.880"E	21	24°41'36.689"N	87°44'31.727"E
10	24°41'35.486"N	87°44'38.717"E	22	24°41'36.580"N	87°44'33.558"E
11	24°41'35.606"N	87°44'38.178"E	23	24°41'36.507"N	87°44'35.129"E
12	24°41'34.296"N	87°44'37.065"E	24	24°41'37.783"N	87°44'35.396"E

LAND DETAILS

Khata no.	Plot no.
10	483 (P) & 484 (P)
17	477 (P), 481, 482 (P) & 485

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1429/M, dated 05.08.2024.
2	CO	:	The CO, Hiranpur vide letter no. 581/Ra., dated 14.11.2023 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 habitation of 13 houses within 500 meters of proposed project site.
3	DMO	:	DMO, Pakur vide memo no. 1541/M, dated 19.09.2024 certified that 04 other mining lease area (18.13 Acre, 5.45 Acre, 6.52 Acre & 5.43 Acre) exists within 500 meters radius from proposed project site and total area is 41.96 Acre or 16.98 Ha.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1893, dated 29.09.2023 certified that the proposed

			project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide letter no. 1252, dated 29.09.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1540/M, dated 19.09.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 42, Page no. 119).
7	Gram Sabha	:	BDO, Hiranpur vide letter no. 208/Vi., dated 20.02.2024 informed that Gram Sabha conducted on 06.02.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1580/M, dated 24.09.2024.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM & Mechanised	
2	Lease Area	:	6.43 Acre/2.603 ha.	Life of Mine – 10 years
3	Waste Generation	:	5 years– 33,300 CUM	
4	Stripping Ratio	:	1:0.08	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m (05 No. of Benches)	
7	Highest Elevation of lease Area	:	64 AMSL	
8	Lowest Elevation of lease Area		56 AMSL	
9	Ultimate Pit Limit Depth (m)	:	34 AMSL	
10	Water Table	:	16 AMSL (40BGL) (from Lowest elevation)	
11	Topography of Mine	:	Undulated Topography	
12	Explosive Requirement	:	Tentative 69.09 kg/per day	
13	Diesel/Fuel requirement		420 Litre per day	

Production Details

Year	Production of Stone in Cum	Production of Stone in Tonnes	Generation of Waste/O. B in cum	Grade/Uses
1st	28980.00	78246.00	16020	Construction & Road
2nd	29970.00	80919.00	00	Construction & Road
3rd	30000.00	81000.00	17280	Construction & Road
4th	30000.00	81000.00	00	Construction & Road
5th	30720.00	82944.00	00	Construction & Road
Total	149670.00	404109.00	33,300	

Maximum production proposed in- 30,720 Cum/82,944 Ton
Stripping Ration in (m3/t)- 1:0.08

Land Use Pattern

LAND USE PATTERN			
	Existing	First to Fifth Years	After Life of Mine
Category	**Area in Hectares**	**Area in Hectares**	**Area in Hectares**
Quarry	0.00	1.275	1.963 (0.248ha Backfilled and proposed for plantation, 1.715ha converted into water reservoir)
Haul Road	0.00	0.029	0.00
Proposed Crusher	0.00	0.00	0.00
Green belt in Safety Zone	0.00	0.64	0.64
Dump with Parapet wall & Garland drain	0.00	0.256	Top soil will be used for plantation in first year and rest OB will be used for road dressing and Backfilling
Total area in use	**0.00**	**2.200**	**2.603**
Balance unused area	1.596	0.403	0.00
Balance used area	0.00	0.00	0
Total Applied Lease Area	**2.603**	**2.603**	**2.603**

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	1024	6400	0.64	**Safety Zone** Gulmohar, Gular, Sagwan, Sakua **Along the Rd. fruit bearing trees** Mango, Jackfruit, Guava,
	Haul Road	3.0 x 3.0	268	200Meter Approach Rd. Two row both side 200/3=67*4=268Plants		
2nd	Care &Protection	---	---	---	---	
3rd	Care &Protection	---	---	---	---	
4th	Care &Protection	---	---	---	---	
5th	Care &Protection	---	---	---	---	
Total			**1292**	**6400**	**0.64**	

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

S.NO.	Particulars	Budget Provisions (Rs)	
		Capital	Recurring
Water Demand			
1(a)	Fixed Overhead water sprinkling system with solar pump for outgoing and incoming transportation vehicles for haul road and green belt Cost for 300 days for 7 KLD @5 KL tanker capacity, Rupees 500/- per tanker	1,00,000	2,10,000
	& One dedicated tanker of 5 KL for Greenbelt Management	10,00,000	50,000
1(b)	Discharge of waste water 300 days for 0.44 KLD @5 KL tanker capacity, Rupees 2000/per tanker	0	52,800
2	Prepare & Maintenance of approach road (Max. Road length 200 m, Width 4.0 m) @ 500Rs. /Meter.	1,00,000	10,000
3	Monitoring (Air, Water, Soil & Noise)	Nil	1,00,000
4	Settling tank 2 in no's (LBH 12 m* 7 m* 4 m) & Garland drains	2,00,000	30,000
5	Wire Fence 878 m x 300 /– meter	2,63,400	26,340
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) 1292 No. of plants x 500 Rs.	6,46,000	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		**23,15,900**	**7,08,140**

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.

k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

a. Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.

b. Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.

c. Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.

d. Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.

e. Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.

f. Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

i. Use of Sharp Drill Bits

ii. Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

iii. Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

a. Controlled blasting would be practiced

b. Optimum quantity of explosives would be used.

c. Blasting to be done during favorable weather conditions.

iv. Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

v. Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

vi. Movement of Trucks on Road – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken

- Regular water sprinkling on Gaul road by using water Tankers.
- Regular repair of Haul road
- All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)

- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench.
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.
Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to 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.

Baseline data yet to be generated.

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 27, 28, 29, 30.09.2024 & 01.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure 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 MeriLiFE Portal (https://merilife.nic.in).

II. The detailed EMP is to be prepared for the Habitation existing within an area of 500 meter radius of proposed project boundary. This EMP is to be included in EIA report.

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10. **Dhowadangal Stone Mine of Mr. Iyasin Shekh, Village : Dhowadangal, Thana no. : 05, Thana : Maheshpur, Distt.: Pakur, Jharkhand (1.65 Ha).**

(Proposal no.: SIA/JH/MIN /498113 /2024)

Name of the consultant : Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 29.09.2024.

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: 25,056 Cum/Annum/67651.20 Ton/Annum

Project and Location Details:

S. No	Parameter		Details	
1	Project Name	:	Dhowadangal Stone Mine	
2	Proprietor	:	Sri Iyasin Shekh	
3	Lessee Address	:	R/O- Gram- Singadda, Thana- Malpahari (Op), District- Pakur, Jharkhand.	
4	Lease Area	:	1.65 Ha	4.086 Acres
5	Type of Land	:	Raiyati Land	
6	Project Cost	:	30 Lakhs	
7	EMP Budget	:	Capital: 24.06 Lakhs	Recurring: 5.78 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	2,45,494 Cum	6,62,833.80 Ton
10	Mine Life	:	10 Years	
11	Man power	:	17 persons	
12	Water Requirement	:	Total water requirement is about 7.51 KLD=0.51 KLD (Drinking & Domestic Uses) + 4.0 (Plantation) KLD + 3.0 KLD (Dust Suppression).	
13	Water Source	:	By Authorised hired water tankers	
14	DG Set / power	:	125 KVA (Temporary setup for Backup)	
15	Crusher	:	Not Proposed	
16	Nearest Water Body	:	Sahargaon Village Pond is about 0.92 km in WSW direction.	
17	Nearest Habitation	:	Dhowadangal Village is about 0.96 km in N direction	
18	Nearest Rail Station	:	Nagarnabi Railway station is about 14.55 km in E direction.	
19	Nearest Airport	:	Deoghar Airport is about 104.3 km in W direction.	
20	Nearest Forest	:	Forest Name / Distance (Km) / Direction	
			Kumharbil PF / 1.73 / WNW	
			Dharni Pahar PF / 2.51 / ENE	

			Piarsola PF	4.31	NNE
			Kalajhor PF	5.41	NW
			Belpahari PF	4.79	SSW
			Bastadih PF	1.78	NNE
			Parra PF	4.3	S
21	Nearest State Highway/ National highway	:	NH-133A is about 12.19 km in ENE direction. SH – 18 is about 13.74 km in WNW direction.		

CO-ORDINATES:

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24°34'22.168"N	87°43'21.747"E	11	24°34'21.018"N	87°43'17.312"E
2	24°34'21.280"N	87°43'21.486"E	12	24°34'21.275"N	87°43'16.400"E
3	24°34'19.985"N	87°43'21.376"E	13	24°34'21.362"N	87°43'15.492"E
4	24°34'19.863"N	87°43'20.402"E	14	24°34'22.359"N	87°43'15.590"E
5	24°34'19.215"N	87°43'19.791"E	15	24°34'22.755"N	87°43'16.483"E
6	24°34'18.995"N	87°43'19.145"E	16	24°34'22.880"N	87°43'18.493"E
7	24°34'18.506"N	87°43'17.613"E	17	24°34'22.944"N	87°43'17.272"E
8	24°34'18.962"N	87°43'17.074"E	18	24°34'23.066"N	87°43'19.602"E
9	24°34'19.324"N	87°43'16.435"E	19	24°34'23.197"N	87°43'21.310"E
10	24°34'20.174"N	87°43'16.899"E	20	24°34'22.560"N	87°43'21.326"E

LAND DETAILS

Khata no.	Plot no.
04	798, 799, 846 (P), 847 & 851
24	842 (P) & 800

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1432/M, dated 05.09.2024.
2	CO	:	The CO, Maheshpur vide letter no. 709/Ra., dated 07.07.2023 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 habitation of 25-26 houses at a distance of 310 meters of proposed project site.
3	DMO	:	DMO, Pakur vide memo no. 1542/M, dated 19.09.2024 certified that 02 other mining lease area (6.50 Acre & 7.40 Acre) exists within 500 meters radius from proposed project site and total area is 17.986 Acre or 7.28 Ha.

4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 537, dated 18.04.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide memo no. 563, dated 03.04.2023 certified that the distance of notified forest is 1274.61 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1543/M, dated 19.09.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 93, Page no. 130).
7	Gram Sabha	:	BDO, Maheshpur vide letter no. 65/Vi., dated 06.01.2023 informed that Gram Sabha conducted on 03.01.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1583/M, dated 24.09.2024.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM & Mechanised	
2	Lease Area	:	1.65 ha/4.086 Acre	Life of Mine – 10 years
3	Waste Generation	:	5 years– 36504.00 CUM	
4	Stripping Ratio	:	1:0.11	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m (05 No. of Benches)	
7	Highest Elevation of lease Area	:	126 AMSL	
8	Lowest Elevation of lease Area		123 AMSL	
9	Ultimate Pit Limit Depth (m)	:	95 AMSL (24M)	
10	Water Table	:	78 AMSL (45BGL) (from Lowest elevation)	
11	Topography of Mine	:	Almost flat with hillocks	
12	Explosive Requirement	:	56.55Kg/Day	
13	Diesel/Fuel requirement		420 Litre per day	

Production Details

Year	Generation of Waste/O. B in cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	12816.00	23328.00	62985.60	Construction & Road
2nd	13536.00	24048.00	64929.60	Construction & Road

3rd	00	24984.00	67456.80	Construction & Road
4th	10152.00	24984.00	67456.80	Construction & Road
5th	00	25056.00	67651.20	Construction & Road
Total	36504.00	122400.00	330480.00	
Stripping Ration in (m3/t)- 1:0.11				

Land Use Pattern

LAND USE PATTERN			
	Existing	**First to Fifth Years**	**After Life of Mine**
Category	**Area in Hectares**	**Area in Hectares**	**Area in Hectares**
Quarry	0.200	0.857	1.225 (0.26ha Backfilled and proposed for plantation, 0.965ha converted into water reservoir)
Haul Road	0.00	0.030	0.00
Proposed Crusher	0.00	0.00	0.00
Green belt in Safety Barrier	0.00	0.425	0.425
Dump with Parapet wall & Garland drain	0.00	0.230	Top soil will be used for plantation in first year and rest OB will be used road dressing and Backfilling
Total area in use	0.200	1.542	1.650
Balance unused area	1.450	0.108	0.00
Balance used area	0.00	0.00	0.00
Total Applied Lease Area	**1.65**	**1.65**	**1.65**

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	688	4300	0.43	**Safety Zone Gulmohar,**
	Haul Road	2.0 x 2.0	668	500Meter Approach Rd. Two row both side		

				500/3=167x4=668Plants		Gular, Sagwan, Sakua Along the Rd. fruit bearing trees Mango, Jackfruit, Guava,
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			**1356**	**4300**	**0.43**	

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

S .NO.	Particulars	Budget Provisions (Rs)	
		Capital	Recurring
Water Demand			
1(a)	Fixed Overhead water sprinkling system with solar pump for outgoing and incoming transportation vehicles for haul road and green belt Cost for 300 days for 7 KLD @5 KL tanker capacity, Rupees 500/- per tanker	1,00,000	2,10,000
	& One dedicated tanker of 5 KL for Greenbelt Management	10,00,000	50,000
1(c)	Discharge of waste water 300 days for 0.41 KLD @5 KL tanker capacity, Rupees 2000/per tanker	0	49,200
2	Prepare & Maintenance of approach road (Max. Road length 500 m, Width 4.0 m) @ 500Rs. /Meter.	2,50,000	25,000
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 572 m x 300 /– meter	1,71,600	17,160
Plantation Scheme			
Plantation in consultation with DFO & Gram Panchayat and conversion to Grazing land as far as possible.			
6	Green belt development safety zone 7.5mtr and along the road (for each plants including hedges and fences) 1356 No. of plants x 500 Rs.	6,78,000	67,800
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	**24,06,100**	**5,78,160**

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx In the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.

e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on 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.

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench.
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.

- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.

- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks/ tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.

  Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Baseline data yet to be generated.

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 27, 28, 29, 30.09.2024 & 01.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure 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 MeriLiFE Portal (https://merilife.nic.in).

II. The Safety zone in the plates of the mine plan submitted was not clearly demarcated. Hence, the PAs are required to get the mine plan revised and accordingly incorporate the data in EIA and also to submit a copy of revised mine plan alongwith the final EIA report.

III. The detailed EMP is to be prepared for the Habitation existing within an area of 500 meter radius of proposed project boundary. This EMP is to be included in EIA report

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11. Expansion of Residential Complex "Diamond City" of M/s Eastern Estate Construction & Developers Pvt. Ltd., Village : Oyana, Thana no. : 46, Thana : Pithoria, Distt. : Ranchi, Jharkhand.

(Proposal no.: SIA/JH/INFRA2/494350/2024)

Name of the consultant : M/s Oceao-Enviro Management Solutions (India) Pvt. Ltd, Ghaziabad

The project was granted Environmental Clearance under violation category vide letter no. EC/SEIAA/2021-22/2574/2021/410, dated 01.02.2023.

The present proposal is for expansion which include additional land and an additional built up area to the extent of 50% beyond the built up area with changes in the earlier approved building plan on the basis of which EC was granted.

The Committee is of the view that the proposal should be considered after a site visit by the Committee.

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12. **Expansion in Cement production capacity from 0.528 Million TPA to 4.6 Million TPA (Expansion in existing Cement Mill from 0.528 to 0.60 Million TPA an additional Cement Mill of 4.0 Million TPA) by M/s UltraTech Cement Ltd. (Unit : Patratu Cement Works) at Patratu Industrial Area, Villages : Katia & Solia, Tehsil : Patratu, Distt. : Ramgarh, Jharkhand. (Proposal No : SIA/JH/IND1/ 496283/2024) (EIA / EMP)**

Name of the consultant : J.M. Environet Pvt. Ltd., Haryana.

This is an expansion project which has been taken for appraisal on 29.09.2024.

Project Category : B-1 - 3 (b) Cement Plants as per EIA Notification, 2006.

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 113th meeting held on 30.05.2024 to 03.06.2024 and SEIAA, Jharkhand has approved the ToRs in 113th meeting held on 07th & 08th June, 2024. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/3147/2024/104, date 09.06.2024. The final EIA / EMP submitted by PP to SEAC on 19.09.2024.

This proposal is for Expansion in Cement Production Capacity from 0.528 Million TPA to 4.6 Million TPA (Expansion in existing Cement Mill from 0.528 to 0.60 Million TPA and additional Cement Mill of 4.0 Million TPA) at Patratu Industrial Area, Villages: Katia & Solia, Tehsil: Patratu, District: Ramgarh (Jharkhand) by M/s. UltraTech Cement Ltd. (Unit: Patratu Cement Works).

Earlier, the existing Cement plant was operating by M/s. Burnpur Cement Ltd. The company had obtained NOC from Jharkhand State Pollution Control Board vide ref. no. JA/2655/W/217 dated 25th Jan., 2007 for Clinker - 800 TPD & Cement (OPC, PSC & PPC) - 800 TPD.

Thereafter, Environmental Clearance was obtained from MoEFCC, New Delhi vide letter no. J-11011/45/2009-IA. II (I) dated 30th Dec., 2010 for Cement Plant (0.528 Million TPA) at Patratu Industrial Area, District: Ramgarh (Jharkhand) by M/s. Burnpur Cement Ltd.

Thereafter, In accordance with the SARFAESI Actions under Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002 read with Security Interest (Enforcement) Rules, 2002, UltraTech has taken control over the assets of Burnpur Cement Limited located at Patratu Industrial Area, Villages - Katia & Solia, District - Ramgarh, Jharkhand on November 29, 2023 ("Transfer Date") and now Burnpur Cement Limited is now a wholly owned unit of UltraTech Cement Limited.

Transfer EC from Burnpur Cement Ltd. to UltraTech Cement Ltd. has been obtained from SEIAA, Jharkhand on 28th May, 2024.

Project Proposal

S. No.	Particulars	Unit	Existing Capacity	Additional Capacity		Total capacity after Expansion
				Existing Line - I (By Optimization)	New Line - II	
1.	Cement (OPC,	Million	0.528	0.072	4.0	4.6

S. No.	Particulars	Unit	Existing Capacity	Additional Capacity		Total capacity after Expansion
				Existing Line - I (By Optimization)	New Line - II	
	PPC and PCC)	TPA				
2.	D.G. Sets	KVA	250	Nil	2 x 750	1750

Salient Features of the Project

S. No.	PARTICULARS	DETAILS
1.	Nature of the Project	Expansion Project
2.	Size of the Project	✓ Cement (OPC/PPC /PCC) {0.528 to 4.6 Million TPA} ✓ D.G. Set (250 to 1750 KVA)
3.	Category of the Project	As per EIA Notification dated 14th Sept., 2006 & as amended thereof; this project (Standalone Grinding Unit) falls under Category - "B", under S. No. 3 (Material Production), Project Activity '3 (b)' Cement Plants.
4.	Location Details	
	Khasra Nos	Khasra List and Khasra map along with the complete land documents of 31.56 ha (78 Acre) submitted.
	Villages	Katia & Solia
	Tehsil	Patratu
	District	Ramgarh
	State	Jharkhand
	Latitude	Plant: 23°37'12.62" to 23°37'09.02" Administrative Building: 23°37'01.33" to 23°37'07.57"
	Longitude	Plant: 85°16'17.31" to 85°16'42.21" Administrative Building: 85°16'22.45" to 85°16'29.61"
	Toposheet No.	Core Zone: (F45B6)73E/6 Buffer Zone: (F45B6)73E/6 & (F45B2)73E/2
5.	Area Details	
i	Total Plant Area	Total plant area is 31.56 ha; expansion will be done within existing plant premises.
ii	Greenbelt / Plantation Area (ha)	Total Greenbelt area will be 10.45 ha, (Existing - 8.09 ha has already been done i.e. 33% of the existing plant area as per EC and Additional - 2.40 ha will be developed i.e. 33% of the additional area of 7.28 ha.
6.	Environmental Setting Details (with approximate aerial distance from the nearest plant boundary and direction from the centre)	
1.	Nearest Village	o Solia (0.6 km in SW direction) o Katia (0.75 km in NNW direction)
2.	Nearest Town	Patratu (5.0 km in NE direction)

S. No.	PARTICULARS	DETAILS
3.	Nearest City	Ranchi (25.0 km in South direction)
5.	Nearest National Highway / State HIghway	SH - 2 (0.8 km in SE direction)
6.	Nearest Railway station	○ Patratu Railway Station (5.5 km in NE direction) ○ Tokishud Railway Station (7.0 km in NW direction) ○ Bhurkhunda Railway Stations (9.5 km in ENE direction)
7.	Nearest Airport	Birsa Munda Airport, Ranchi (35.0 km in South direction)
8.	National Parks, Wildlife Sanctuaries, Biosphere Reserves within 10 km radius	No National Park, Wildlife Sanctuary, Biosphere Reserve falls within the 10 km radius area of the plant site.
9.	Reserve / Protected Forest within 10 km radius	Following Protected Forest falls within 10 km radius study area ▪ Koto PF (1.0 km in NW direction) ▪ Protected Forest (3.0 km in North direction) ▪ Protected Forest (4.0 km in East direction) ▪ Protected Forest (4.0 km in ESE direction) ▪ Protected Forest (4.o km in West direction) ▪ Lem PF (5.0 km in SE direction) ▪ Jarad PF (5.0 km in SE direction) ▪ Ghaghra PF (5.5 km in East direction) ▪ Bicha PF (6.2 km in SE direction) ▪ Protected Forest (6.5 km in NNE direction) ▪ Tokishud PF (6.5 km in North direction) ▪ Sankul PF (6.5 km in NNE direction) ▪ Protected Forest (7.0 km in ENE direction) ▪ Hariharpur PF (7.0 km in ESE direction) ▪ Rarha PF (7.0 km in SSE direction)
10.	Water Bodies (within 10 km radius)	• Naikari Nadi (0.8 km in East direction) ▪ Patratu Lake (1.o km in SE direction) ▪ Damodar River (7.0 km in North direction) ▪ Chiruwa Nala (7.0 km in SW direction)
11.	Archaeologically Important Site	None within 10 km radius study area
12.	Seismic Zone	Zone II [as per IS 1893 (Part-I): 2002]
13.	Cost Details	
	Total Cost of the Expansion Project	Rs. 500 Crores
	Cost for Environment Management Plan	Capital Cost: Rs. 50.0 Crores Recurring Cost: Rs. 5.0 Crore / annum
14.	Basic Requirements of the Project	

S. No.	PARTICULARS	DETAILS			
	Water Requirement (KLD)	Existing	Additional	Total	Source
		100	200	300	Ground Water/Rainwater Harvesting
	Power Requirement (MW)	3.6	20	23.6	Damodar Valley Company Ltd., D.G. Sets for Emergency Back-up
	Manpower Requirement (No. of persons)				
	Construction Phase				Preference is being/will be given to local people as per their eligibility, qualification & skills.
	Regular	-	10	10	
	Contractual	-	500	500	
	Operation Phase				
	Regular	83	15	98	
	Contractual	109	70	179	
	Total	**192**	**595**	**787**	

Land Details:

Plot No. A-8P, 9, 10, I 1, B-38, 39, 40, C-7P, B,9,10,11,XP, Block-D & Block-E, **Part in the Patratu Industrial Area, Consisting of Revenue Survey Nos,** 24P,25P,26,27,28P,29,30P,31,32P,33P,35P, 49P, 50, 51P ,52P ,71P, 2332P, 2333, 2334, 2335P, 2336P, 2337, 2339, 2340, 2341P, 2343P, 2344, 2345, 2346, 2347, 2348P, 2349, 2350P, 2351P, 2352P, 2353P, 2354, 2355, 2356, 2357, 2358, 2359P, 2360, 2361, 2362, 2363, 2364, 2365, 2366P, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374P, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2385P, 2386P, 2387, 2388, 2389, 2390, 2391, 2392P, 2481P, 2482P, 2485P, 2486P, 2487, 2488, 2489, 2490, 2491, 2492, 2493P, 2394P, 2240P, 35P, 36P

Scope of Proposed Expansion Project

S. No.	Unit	Major facilities and associated activities proposed-
Expansion by Process optimization		
1.	Existing Line - I	– Cement Mill (Ball Mill) – Storage Facilities for Raw Materials and Products (Covered Sheds, Silos) – Packing Plant – Truck Tipplers – Truck Parking Area – Hot Air Generator
2.	Process Optimisation in Line - I	– Increase in mill grinding media filling from 22% to 24% by adding more grinding media into mill which improves its grinding efficiency and reduced retention time of raw material to product. – Increase in mill air velocity by optimizing mill vent fan so the

S. No.	Unit	Major facilities and associated activities proposed-
Expansion by Process optimization		
		fine grounded material leaves mill faster and further fresh feed is pushed into mill.
New Installation		
3.	New Line - II	– Cement Mill (RP + Ball Mill / VRM) – Storage Facilities for Raw Materials and Products (Covered Sheds, Silos) – Packing Plant – Truck Tipplers – Truck Parking Area – Hot Air Generator – Cement Bulk Loading – Bulk Reception Unit (BRU) or Fly ash / Slag / Gypsum
4.	Other Associated facilities	- Weigh Bridge - Diesel Generator with storage of fuel - STP (15 KLD) - RMC Plant for construction activity

PRODUCT WISE RAW MATERIAL CONSUMPTION

S. No.	Name of Raw Material	Quantity (Million TPA) 100 % Basis			Source	Distance & Mode of Transportation
		OPC	PPC	PCC		
1.	Clinker	4.37	2.76	1.84	Hirmi Cement Works, Rawan Cement Works, Kukurdih Cement Works and other UTCL Units	**450 km by Rail then 13 km by Road**
2.	Gypsum	0.23	0.23	0.23	Chemical - Paradip Port Mineral - Mines in Rajasthan	**600 km Rail then 13 km by Road**

S. No.	Name of Raw Material	Quantity (Million TPA) 100 % Basis			Source	Distance & Mode of Transportation
		OPC	PPC	PCC		
3.	Fly ash	-	1.61	1.15	Koderma Thermal Power Plant, Patratu Thermal Power Station, IPL Power Plant & other nearby sources	**135 km by Road**
4.	Slag	-	-	1.38	Steel Plants in Jharkhand - Bokaro Steel Plant, Tata Steel	**120 km by Road**
Total		4.6	4.6	4.6		

Cement production will be done 4.6 Million TPA only either from various options as OPC, PPC, PCC.

Raw Material Requirement - OPC (10%)

S. No.	Name of Raw Material	Quantity (Million TPA)			Source	Distance & Mode of Transportation
		Existing	Additional	Total		
1.	Clinker	0.050	0.387	0.437	Hirmi Cement Works, Rawan Cement Works, Kukurdih Cement Works and other UTCL Units	**450 km by Rail then 13 km by Road**
2.	**Gypsum**	**0.00264**	**0.020**	**0.023**	**Chemical - Paradip Port** **Mineral - Mines in Rajasthan**	**600 km Rail then 13 km by Road**

RAW MATERIAL CONSUMPTION - PPC (20%)

S. No.	Name of Raw Material	Quantity (Million TPA)			Source	Distance & Mode of Transportation
		Existing	Additional	Total		
1.	Clinker	0.0634	0.4486	0.552	Hirmi Cement Works, Rawan Cement Works, Kukurdih Cement Works and other UTCL Units	**450 km by Rail then 13 km by Road**

2.	Gypsum	0.005	0.0364	0.414	Chemical - Paradip Port Mineral - Mines in Rajasthan	**600 km Rail then 13 km by Road**
3.	**Fly ash**	**0.036**	**0.286**	**0.322**	**Koderma Thermal Power Plant, Patratu Thermal Power Station, IPL Power Plant & other nearby sources**	**135 km by Road**

RAW MATERIAL CONSUMPTION - COMPOSITE CEMENT (70%)

S. No.	Name of Raw Material	Quantity (Million TPA)			Source	Distance & Mode of Transportation
		Existing	Additional	Total		
1.	Clinker	0.118	0.912	1.030	Hirmi Cement Works, Rawan Cement Works, Kukurdih Cement Works and other UTCL Units	**450 km by Rail then 13 km by Road**
2.	Gypsum	0.0184	0.1426	0.161	Chemical - Paradip Port Mineral - Mines in Rajasthan	**600 km Rail then 13 km by Road**
3.	Fly ash	0.1145	0.8837	0.9982	Koderma Thermal Power Plant, Patratu Thermal Power Station, IPL Power Plant & other nearby sources	**135 km by Road**
4.	**Slag**	**0.1182**	**0.9058**	**1.024**	**Steel Plants in Jharkhand - Bokaro Steel Plant, Tata Steel**	**120 km by Road**

TOTAL RAW MATERIAL REQUIREMENT

S. No.	Name of Raw Material	Total raw material requirement considering OPC - 10%, PPC - 20% and PCC - 70% (MTPA)	Source	Distance & Mode of Transportation

1.	Clinker	2.019	Hirmi Cement Works, Rawan Cement Works, Kukurdih Cement Works and other UTCL Units	450 km by Rail then 13 km by Road
2.	Gypsum	0.598	Chemical - Paradip Port Mineral - Mines in Rajasthan	600 km Rail then 13 km by Road
3.	Fly ash	1.32	Koderma Thermal Power Plant, Patratu Thermal Power Station, IPL Power Plant & other nearby sources	135 km by Road
4.	Slag	1.38	Steel Plants in Jharkhand - Bokaro Steel Plant, Tata Steel	120 km by Road
Product will be manufactured in any of the combination (OPC, PPC and PCC) considering the maximum capacity as per the market demand.				

RAW MATERIAL CONSUMPTION MAXIMUM

S. No.	Name of Raw Material	Quantity (Million TPA)			Source	Distance & Mode of Transportation
		Existing	Additional	Total		
1.	Clinker	0.312	3.8	4.112	Hirmi Cement Works, Rawan Cement Works, Kukurdih Cement Works and other UTCL Units	**450 km by Rail then 13 km by Road**
2.	Gypsum	0.021	0.2	0.221	Chemical - Paradip Port Mineral - Mines in Rajasthan	**600 km Rail then 13 km by Road**
3.	Fly ash	0.063	1.4	1.463	Koderma Thermal Power Plant, Patratu Thermal Power Station, IPL Power Plant & other nearby sources	**135 km by Road**
4.	Slag	0.132	1.0	1.132	Steel Plants in Jharkhand - Bokaro Steel Plant, Tata	**120 km by**

S. No.	Name of Raw Material	Quantity (Million TPA)			Source	Distance & Mode of Transportation
		Existing	Additional	Total		
					Steel	Road
Product will be manufactured in any of the combination (OPC, PPC and PCC) considering the maximum capacity as per the market demand						

Fuel Requirement

S. No.	Name	Quantity (Million TPA)			Source	Distance & Mode of Transportation
		Existing	Additional	Total		
1.	Coal (Imported/ Indigenous)	0.012	0.1	0.112	Mines in Jharkhand -CCI and CIL mines	300 km by Rail then 13 km by Road
** Coal will be used in HAG (Hot Air Generator) and Hot air will be used for slag drying as we are proposing manufacturing of Portland composite cement (PCC).*						

Resources optimization/recycling and reuse envisaged in the project, if any, should be briefly outlined

- The proposed Grinding Unit is being/will be utilize waste generated from other industries mainly Fly Ash from Thermal Power Plant and Blast Furnace Slag from Steel Plant for manufacturing Cement. These waste products comprise of 35-65% of Raw materials this will minimize the clinker usages and ultimately will lead to sustainability.
- Dust collected from various pollution control equipment's like Bag house and Bag filters is being/ will be recycled into the process.
- Currently there is no STP, soak pits are utilized. 15 KLD STP of MBBR technology will be installed for treatment of waste water generated from Administrative Building/ Plant.
- Sludge from STP (~ 15 kg/month) will be used as manure in greenbelt development/ plantation.
- Domestic waste water (11 KLD) generated from the plant & the colony will be treated in STP (15 KLD capacity) and treated water will be re-used for greenbelt development.

- Water used for cooling is being / will be partially absorbed in the process and partially subjected to evaporation & recycling; hence, no wastewater is being/ will be discharged from the plant premises.
- Water conservation measures implemented are like Permanent water sprinklers, use of air cooling in place of water cooling in process fans, Installation of screw compressors in place of conventional compressors.
- Roof top rainwater harvesting by recharge tube wells. Surface rainwater runoff available from roads, cemented area and open land inside the colony area shall be used for recharging through existing dug cum borewells/ dry tube wells.

Availability of water and its source, energy /power requirement and source should be given.

a) Water Requirement and Source

The total fresh water requirement for the existing plant is 100 KLD and additional requirement for proposed expansion will be 200 KLD; thus, total water requirement after proposed expansion project will be 300 KLD.
Source: Ground Water and Rainwater harvested in pond

Status of Approval:

- The CGWA NOC has been obtained for abstraction of 300 KLD ground water vide Letter dated 18/07/2024 valid up to 05/11/2026.

Break- up of Total Water Requirement

Purpose	Requirement (KLD)			Source
	Existing	Additional	Total after Expansion	
Cement Plant	40	100	140	Ground Water / Rainwater harvested
Dust Suppression	30	50	80	
Drinking & Domestic	10	20	30	
Green Belt Development / Plantation	20	30	50	
TOTAL	**100**	**200**	**300**	

Land Use Planning (Break-up along with green belt etc.)
Total plant area is 31.56ha (Part - A 28.32 ha is for Plant Area & Part - B 3.0 ha is for Administrative Building). Present land use of the plant site is industrial. Total project

area is 31.56ha (24.28 ha existing and 7.28ha additional), out of the total project area; 33% i.e., 10.45 ha area will be covered under greenbelt development & plantation.

However, at present Greenbelt / plantation have been done over an area of about 8.09 ha (33% of exiting plant area of 24.28 ha) and in additional area of 2.40 ha out of the total proposed plant area of 31.56ha greenbelt & plantation will be done.

Plant Area Break-up

S. No.	Particulars	Existing	Proposed	Total	% Area
1	Plant and Machineries (Existing)	2.53	-	2.53	8.08
2	Plant and Machineries (Proposed)	-	4.88	4.68	14.94
3	Greenbelt Area (33 % of total plant area)	8.09	2.40	10.45	33.37
4	Open Area	13.66		13.66	43.61
Total		**24.28**	**7.28**	**31.56**	**100.00**

Baseline Environmental Studies

Period	Winter Season (Dec., 2023 to Feb., 2024)	Additional Study (if any)
AAQ parameters at 8 locations (min and max)	$PM_{2.5}$ - 22.6 to 50.8 µg/m^3 PM_{10} - 47.5 to 86.7 µg/m^3 SO_2 - 5.5 to 15.6 µg/m^3 NO_x - 10.6 to 28.5 µg/m^3 CO - BDL To 0.85 mg/m^3	-
Incremental GLC level for plant only	PM_{10}. 2.15 µg/m3 (120 m within the Plant Site in SE Direction) $PM_{2.5}$ - 0.93 µg/m3 (150 m within the Plant Site in SE Direction)	-
Ground water quality at 08 locations	pH - 7.4 to 7.74 Total Hardness - 177.88 to 350.97 mg/l Chlorides - 48.5 to 94.97 mg/l Fluoride - 0.14 to 1.11 mg/l Heavy Metals - Iron as Fe: 0.1 to 0.8 mg/l	-

<table>
<tr><td>Surface water quality at 04 location</td><td>pH - 7.43 to 7.76 mg/l
DO - 7 to 7.2 mg/l
BOD - BDL to 2 mg/l
COD - BDL to 8.0 mg/l</td><td>-</td></tr>
<tr><td>Noise levels Leq (Day and Night) at 08 locations</td><td>50.2 to 53.3 Leq dB (A) for day time and 40.7 to 42.9 Leq dB (A) for the night time.</td><td>-</td></tr>
<tr><td>Traffic assessment study findings</td><td>

Traffic study has been conducted at SH - 2 (which is ~ 0.8 km towards SE direction
Transportation of raw material & finished product:

Clinker* - 100% by Road
Fly ash/ Pond Ash- 100% by Road
Gypsum - 100% by Road
Slag - 100 % by Road
Cement - 100 % by Road

Clinker, Gypsum & Coal is transported ~ 450 km by railways to the nearest railway siding (Barakhunda Railway Siding is 9.5 km n ENE direction), from where it is transported ~ 13 km by road to the plant site.

Existing PCU is 230.50 PCU/hr on SH - 2 road and existing level of service (LOS) is B.
<table>
<tr><th>Road</th><th>V (Volume in PCU/hr.)</th><th>C (Capacity in PCU/hr.)</th><th>Existing V/C Ratio</th><th>LOS</th></tr>
<tr><td>SH - 2</td><td>230.50</td><td>625</td><td>0.37</td><td>B</td></tr>
</table>
* Note - Capacity as per IRC: 64-1990 Guideline for capacity of roads.

PCU load for SH - 2 after proposed project will be 355.12 (Existing) +124.62 (Additional) PCU/hr and level of service (LOS) will be C.

<table>
<tr><th>Road</th><th>V (Volume in PCU/hr.)</th><th>C (Capacity in PCU/hr.)</th><th>Existing V/C Ratio</th><th>LOS</th></tr>
<tr><td>SH -2</td><td>124.62 + 230.50 = 355.12</td><td>625</td><td>0.56</td><td>C</td></tr>
</table>
</td><td>-</td></tr>
</table>

	** Note - Capacity as per IRC: 64-1990 Guideline for capacity of roads.* ***Conclusion:*** The level of service is "C" after including the additional traffic due to the proposed project for SH -2.	
Wildlife Conservation Plan for Schedule - I species -		
Flora and fauna	Wildlife Conservation for Schedule - I species has been made and submitted to DFO, Ramgarh vide letter No. UTCL/Env./PACW/2024-25/11, dated 14.08.2024. Details of the same given below - Twenty-four faunal species was listed which are Asiatic Elephant (Elephas maximus), Sloth Bear (Melursus ursinus), Jackal (Canis aureus), Jungle Cat (Felis chaus), Common Fox (Vulpes bengalensis), Asiatic Wild Dog or Dhole (Cuon alpinus), Indian Grey Mongoose (Herpestes edwardsii), Striped Hyena (Hyaena hyaena), and Small Indian Civet (Viverricula indica), White-eyed Buzzard (Butastur teesa), Lesser AdjutantStork (Leptoptilos javanicus), Common Pochard (Aythya ferina), Cotton Teal (Nettapus coromandelianus), Fulvous Whistling Duck (Dendrocygna bicolor), Tufted Pochard (Aythya fuligula), Brahminy Kite (Haliastur indus), Crested Serpent Eagle (Spilornis cheela), Western Marsh Harrier (Circus aeruginosus), Osprey (Pandion haliaetus), Common Greenshank (Tringa nebularia), Peafowl (Pavo cristatus), River Tern (Sterna aurantia), Indian Rat Snake (Ptyas mucosus), and Python (Pythonmolurus). The budget allocated for Wildlife Conservation Plan is 24 Lakhs.	-

The details of Solid waste hazardous generation along with its mode of treatment/ disposal is furnished as below:

Plant Unit	Section	Type of Waste	Waste	Approx. Quantity	Treatment / Disposal
Grinding Unit	APCE	SW	Dust	450 TPD	Dust collected from various APCEs is being / will be totally recycled into the process.
STP	-	SW	STP Sludge	~15 kg/month	Used as manure for greenbelt development/ plantation.
Plant Maintenance	Different sections	HW	Used / Spent Oil (5.1)	28 TPA	Is being / will be Sold to the CPCB/ SPCB authorized recyclers.
			Waste or Residues containing oil (5.2)	2 TPA	

Plant Unit	Section	Type of Waste	Waste	Approx. Quantity	Treatment / Disposal
			Lead Acid batteries	3 TPA	
			Empty barrels (Cat 33.1)	1 TPA	
			Contaminated cotton rags & other cleaning material	0.5 TPA	
MSW	Plant Canteen & Rest room	Dry / Wet	Bottles, paper, cans, textile, etc.	5 TPA	Is being / will be sold to authorized recyclers. Is being / will be disposed after segregating into bio-degradable and non-degradable waste. Bio-degradable waste is being / will be composted & utilized for greenbelt development/plantation and non-degradable wastes is being / will be disposed of suitably. Concept of waste minimization 3R's (Recycle, Reduce & Recover) scheme will be adopted.
			Kitchen and canteen/ Green waste		
Plant	Plant & Office	E - waste	Discarded electrical equipment, cables, CFL / LED Lights	0.5 TPA	Sold to registered vendors as per E - waste Management Rules, 2020

Public consultation

Details of advertisement given	""Prabhat Khabar" and "Hindustan Times" on 26th June.,2024. "
Date of Public Consultation	26th July, 2024 (Friday) at 11:30 AM
Venue	M/s. Ultratech Cement Limited (Unit: Patratu Cement Work - Premises), Tehsil: Patratu, District: Ramgarh (Jharkhand).

Presiding Officer	➢ Ms. Kumari Geetanjali (Additional Collector) ➢ Mr. Jitendra Prasad Singh (Regional Officer) ➢ Kumar Manibhushan (Environmental engineer)
Major issues raised	Environment & Pollution, Socio-economic Development, Water Pollution, Education, etc.

Action plan as per MoEF&CC O.M. dated 30th Sept., 2020

The company has allocated Rs 1.1 Crores for implementation of the commitments made during Public Hearing as per MoEFCC OM dated 30th Sept., 2020 & OM dated 20th Oct., 2020. The detailed Socio-economic Development plant is given below

Socio- Economic Development Plan - Patratu Cement Plant

Concerns raised during the Public Hearing	Physical activity to be done	Location / Area	1st Year Budget in Lakhs	2nd Year Budget in Lakhs	3rd Year Budget in Lakhs	4th Year Budget in Lakhs	5th Year Budget in Lakhs	Total Cost
Employment	Setting up of skill development training center (Providing short duration training programs for unemployed youth in the field of domestic electrician, plumber, motor mechanic etc.)	Girbatta, Solia, Katia, Hesla, Palani	**3**	**7**				10
	Absorbing competent persons after training as per requirement basis under skilled/semi-skilled / un-skilled/professionals.	Girbatta, Solia, Katia, Hesla, Palani	1	2	2.5	2.5	3	11
Infrastructure Related	Installation of solar power system in schools, Govt building and Village Panchayat Bhawan, Provide solar street light in nearby villages.	Girbatta, Solia, Katia, Hesla, Palani	3	3	3	3	3	15

Socio- Economic Development Plan - Patratu Cement Plant								
Concerns raised during the Public Hearing	**Physical activity to be done**	**Location / Area**	**1st Year**	**2nd Year**	**3rd Year**	**4th Year**	**5th Year**	**Total Cost**
			Budget in Lakhs	**Budget in Lakhs**	**Budget in Lakhs**	**Budget in Lakhs**	**Budget in Lakhs**	
	Rural infrastructure development for repairing/ restoring the village pathway/ roads	Girbatta, Solia, Katia, Hesla, Palani	3	5	7			15
Education Related	Upgradations of Classrooms in Schools of nearby Villages, installation of smart classes and computers in the Government schools to promote Digital education etc.	Girbatta, Solia, Katia, Hesla, Palani	5	5	5	4.5		19.5
	Strengthening of school by providing quality study materials and stationery to the children.	Girbatta, Solia, Katia, Hesla, Palani	1.5	1.5	1.5	1.5	1.5	7.5
Health Related	Preventive health checkup/ camps programme (Gyne, Eye, Ortho etc) for women & Children health checkup.	Girbatta, Solia, Katia, Hesla, Palani	1.5	1.5	1.5	1.5	1	7
Water Related	Installation of RO Plants to provide safe drinking water at community places.	Girbatta, Solia, Katia, Hesla, Palani	2	2	2		2	8
	Restoration and cleaning of rivers by implementing	Girbatta, Solia, Katia,	3	3	3	3	3	15

Socio- Economic Development Plan - Patratu Cement Plant								
Concerns raised during the Public Hearing	**Physical activity to be done**	**Location / Area**	**Ist Year** Budget in Lakhs	**2nd Year** Budget in Lakhs	**3rd Year** Budget in Lakhs	**4th Year** Budget in Lakhs	**5th Year** Budget in Lakhs	**Total Cost**
	Restoration actions like replant native vegetation, stabilize riverbanks and improve ecological functions.	Hesla, Palani						
Agriculture Related	Distribution of good quality seeds to farmers, encouragement for organic farming, linkage of farmers to the source to get Organic materials and fertilizers.	Girbatta, Solia, Katia, Hesla, Palani	1	1	1			3
Total			**21**	**24**	**26.5**	**16**	**13.5**	101
***NOTE**: Nature of the activities & village can be interchanged from village to village may vary based on the outcome of need base analysis during the execution phase in coordination with local Gram Panchayat within the overall budget proposed here for Socio- Economic Development Plan.*								

Budgetary provision for environment management protection

The capital cost of the proposed expansion project is Rs. 500 Crores and the capital cost for Environmental Protection Measures is proposed as Rs. 50 Crores. The annual recurring cost towards the environmental protection measures is proposed as Rs. 5.0 Crores/ annum. The details of cost for environmental protection measures are as follows:

S. No.	Particulars	Capital cost (in Crores)	Recurring cost (in Crores / annum)
1.	Air pollution control systems	40	3.7
2.	Sewage Treatment Plan water	0.5	0.15
3.	Noise pollution control	5	0.05
4.	Environment monitoring and Environment Cell	1.5	0.25

S. No.	Particulars	Capital cost (in Crores)	Recurring cost (in Crores / annum)
5.	Occupational Health (Initial & Periodical Medical Check-ups)	0.25	0.1
6.	Greenbelt and Plantation	0.75	0.25
7.	Others (Housekeeping and Vacuum Sweeping Machine, Environmental Awareness Program)	2	0.5
8.	Cost PH Issues adressal	1.1	-
Total		**51.1**	**5**

Greenbelt Development

Total project area is 31.56ha (24.28 ha existing and 7.28ha additional), out of the total project area; 33% i.e., 10.45 ha area will be covered under greenbelt development & plantation.

However, at present Greenbelt / plantation have been done over an area of about 8.09 ha (33% of exiting plant area of 24.28 ha) and in additional area of 2.40 ha out of the total proposed plant area of 31.56ha greenbelt & plantation will be done. The total existing saplings available in the project area is 8.09 ha with approx. 12135 samplings / ha. Now, Company has planned to proposed greenbelt development / plantation in the additional area of 2.40 ha with 1855 Sapling / ha and gap filling in the existing plantation considering the survival rate of 80%.

Certified Compliance Report from Regional Office

The status of compliance of EC was obtained IRO, Ranchi Vide File No. 103-332/ROR -2024, dated 10th September, 2024.

As per the Certified Compliance Report of existing Environment Clearance Letter No. J-11011/45/2009-IA-II (I) dated 30th September, 2010 and Extension of Validity of EC letter no. - EC/SEIAA/2017 -18/2068/2017/261 Ranchi dated 05th Nov, 2018; all the general and specific conditions are compiled and agreed to comply.

Existing Clearances / Consents & Implementation Status

S. No.	Particulars	Granted Capacity	Implementation Status
A.	**Environment Clearance (EC)**		
1.	○ EC from MoEFCC, New Delhi *vide* Letter No. J-11011/45/2009-IA. II (I) dated 30th Dec., 2010 ○ Extension of Validity of EC from SEIAA,	Clinker - 0.528 Million TPA Cement - 0.528 Million TPA (OPC, PSC, PCC &	Clinker - 0.264 Million TPA *(Currently not in operation)*

S. No.	Particulars	Granted Capacity	Implementation Status
	Jharkhand *vide letter* no.-EC/SEIAA/2017-18/2068/2017/261 Ranchi dated 05th Nov. 2018 o Corrigendum in Extension of Validity of Environment Clearance form SEIAA, Jharkhand *vide letter* no.-EC/SEIAA/2017-18/2068/2017/186 Ranchi dated 30th April, 2019	PPC)	Cement - 0.528 (OPC, PSC, PCC & PPC) Partially implemented
B.	**Consent to Establish (CTE) / NOC**		
1.	NOC from Jharkhand State Pollution Control Board (JSPCB) vide ref. no. JA/2655/W/217 dated 25th Jan., 2007	Clinker: 800 TPD, OPC: 80 TPD, PSC: 400 TPD, PPC: 320 TPD	Implemented
2.	CTE for Cement (OPC, PSC, PCC & PPC) Production Capacity JSPCB vide letter No. JSPCB/HO/RNC/CTE-4963863/2020/223 dated 02nd June, 2020	Cement (OPC, PSC, PCC & PPC) - 800 TPD	
C.	**No Increase in Pollution Load**		
1.	No increase in the Pollution Load certificate by change in product mix by inclusion of PCC along with the production of OPC, PPC & PSC dated 16th March, 2020	Cement (OPC, PSC, PCC & PPC)- 800 TPD	Implemented
D.	**Consent to Operate (CTO)**		
1.	Consent to Operate (CTO) Vide JSPCB Consent Ref No. D-441(C) dated 20th March, 2015	Cement - OPC: 80 TPD, PSC: 400 TPD, PPC: 320 TPD	Implemented
2.	Consent to Operate (CTO) Vide JSPCB Consent Ref No. D-2325(C) dated 02nd Sept, 2015	Cement - OPC: 80 TPD, PSC: 400 TPD, PPC: 320 TPD and Clinker: 800 TPD	Implemented
3.	Consent to Operate (CTO) Vide JSPCB Consent Ref No. JSPCB/HO/RNC/CTO-526047/2016/153 dated 27th June, 2016. Valid up to 31st March, 2017.	Cement - OPC: 80 TPD, PSC: 400 TPD, PPC: 320 TPD and Clinker: 800 TPD	Implemented
4.	Consent to Operate (CTO) Vide JSPCB Consent Ref No. JSPCB/HO/RNC/CTO-1271759/2018/770 dated 25th April, 2018. Valid up to 31st March, 2019.	Cement (OPC, PSC & PPC) - 800 TPD	Implemented
5.	Consent to Operate (CTO) Vide JSPCB Consent Ref No. JSPCB/HO/RNC/CTO-4370288/2019/974 dated 10th May, 2019. Valid up to 31st	Cement (OPC, PSC, PCC & PPC)- 800 TPD	Implemented

S. No.	Particulars	Granted Capacity	Implementation Status
	March, 2020.		
6.	Consent to Operate (CTO) Vide JSPCB Consent *vide* Ref No. JSPCB/HO/RNC/CTO-8168156/ 2020 /1077, dated 4th July, 2020 valid upto 30th June, 2021.	Cement (OPC, PSC, PCC & PPC)- 800 TPD (in expansion)	Implemented
7.	Consent to Operate (CTO) Vide JSPCB Consent Ref No. JSPCB/HO/RNC/CTO-7726490/ 2020/ 907 dated 10th June, 2020. Valid up to 31st March, 2024.	Cement (OPC, PSC & PPC) - 800 TPD	Implemented
8.	Consent to Operate (CTO) from JSPCB vide their letter no. JSPCB/HO/RNC/CTO-10366082 /2022 /222 dated 27th Feb., 2022 valid upto 31st March, 2024.	Cement (OPC, PSC, PCC & PPC)- 1600 TPD (after expansion)	Implemented
9.	Consent to Operate (CTO) from JSPCB vide their letter no. JSPCB/HO/RNC/CTO-17945908/2024 /885 dated 18th May, 2024 valid upto 31st March, 2025.	Cement (OPC, PSC, PCC & PPC)- 1600 TPD (unexpended part)	Implemented

STATUTORY CLEARANCES:

1	Land docs	:	Ownership Land.
2	CO	:	The CO, Patratu vide letter no. 1730, dated 04.09.2018 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatiyan & Register II.
3	DFO Wild Life	:	DFO, Wildlife Hazaribagh vide letter no. 906, dated 17.05.2024 certified that the proposed project site is outside Eco Sensitive Zone of Hazaribag Wildlife Sanctuary.
4	DFO Forest Distance	:	DFO, Ramgarh Forest Division vide letter no. 1006, dated 29.05.2024 certified that the distance of demarcated forest is 900 meters from project site.
5	Transfer of Environmental Clearance (EC)	:	Transfer of Environmental Clearance (EC) granted by SEIAA vide letter no. 74, dated 27.05.2024.
6	Public Hearing	:	JSPCB vide ref. no. PH/02/2024/B-1871, dated 21.08.2024 informed that Public Hearing conducted on 26.07.2024.
7	Compliance Report	:	Compliance report certified by Regional Office, MoEF&CC, Govt. of India vide file no. 103-332/ROR-2024, dated 10.09.2024.

8	CGWA	:	No Objection Certificate for Ground Water Abstraction issued by CGWA vide NOC No. CGWA/NOC/IND/EXP/2024/61, dated 18.07.2024 valid up to 05.11.2026.
9	Baseline Study Period	:	December, 2023 to February, 2024.

Based on the presentation made and information provided, the Committee decided that the proposal for Expansion in Cement production capacity from 0.528 Million TPA to 4.6 Million TPA (Expansion in existing Cement Mill from 0.528 to 0.60 Million TPA an additional Cement Mill of 4.0 Million TPA) by M/s UltraTech Cement Ltd. (Unit : Patratu Cement Works) at Patratu Industrial Area, Villages : Katia & Solia, Tehsil : Patratu, Distt. : Ramgarh, Jharkhand is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – III alongwith following specific conditions :

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"Ek Ped Ma Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in).

II. Wildlife Conservation Plan has been submitted to DFO, Ramgarh vide letter no. UTCL/ENV/PACW/2024-25/11, dated 14.08.2024. The PAs are required to get the Wildlife Conservation Plan approved within six months of the grant of EC and the copy of the same to be submitted to SEIAA / SEAC.

III. The ground water quality and surface water quality is to be done for all the location given in EIA report and same to be submitted alongwith the first EC compliance report.

IV. Ground water to be drawn for use in the project only after obtaining permission from the Competent Authority.

V. 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.

VI. All raw material to be stored only under covered shed.

VII. Trees should be developed & maintained not less than 33% of project area.

VIII. Developers/Company to conduct and submit carbon footprint study report including mitigation measures as a part of EC compliance.

****

Day 4 : September 30th, 2024 [Monday]

Consideration of Proposals

1. **Proposed Langatu, Sikri, Pandaria, Barkagaon & Sirma Sand Deposit Project on Barkagaon River Bed of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Langatu, Sikri, Pandaria, Barkagaon & Sirma, Block : Barkagaon, Distt. : Hazariabagh, Jharkhand (3.48 Ha).**

   (Proposal No : SIA/JH/MIN/ 483029/2024)

   Name of the consultant : Rian Enviro Private Limited, Patna, Bihar.

   This is a new project which has been taken for appraisal on 30.09.2024.

   Project Sector: 1(a) Mining of Minerals, Category: B2.

   Application for Environmental Clearance (EC).

   EC Application for: Proposed Capacity- 56400 cum/annum or 93060 TPA (dry basis).

   Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Langatu, Sikri, Pandaria, Barkagaon & Sirma Sand Deposit	
2	Lessee:	:	M/s Jharkhand State Mineral Development Corporation Ltd. (A Govt. of Jharkhand Enterprises)	
3	Lessee Address	:	Khanij Nigam Bhawan, Nepal House Area, Doranda, Ranchi – 834002 (Jharkhand)	
4	Lease Area	:	3.48 Ha	Acres– 8.59
5	Type of Land	:	Non-Forest Government Land (River Bed)	
6	Project Cost	:	66.32 Lakhs	
7	EMP Budget	:	Capital: Rs 3.58 Lakhs	Recurring: Rs. 5.45 Lakhs/ year
8	New or Expansion	:	New	
9	Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity	:	cum.: 31320 cum (Dry basis)	Tonnes: 52930 tonnes (dry basis)
10	Mine Life / Lease Period	:	**Lease Period i.e 15/08/2025 as per provisions of Jharkhand State Sand Mining Policy 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.**	
11	Man power	:	92	
12	Water	:	12 KLD=0.92 KLD (Drinking & Domestic Uses) + 1.08 (Plantation)	

	Requirement		KLD + 10 KLD (Dust Suppression).
13	Water Source	:	By authorised hired tankers
14	DG Set / power	:	NA
15	Crusher	:	NA
16	Nearest Water Body	:	Mining lease allocated on the inactive channel of the Barkagaon River.
17	Nearest Habitation	:	Sikri, approx. 0.44 km towards WSW.
18	Nearest Rail Station	:	Bes Railway Station Approx. 13.23 Km towards NE.
19	Nearest Air Port	:	Birsa Munda Airport, Ranchi, approx. 60.76 km towards SSE.
20	Nearest Forest	:	--
21	Road & Highways	:	Hazaribagh Tandwa Tangar Road, approx. 7 km. towards NE.

CO-ORDINATES

1	Latitude		From 23 50',57.913" N	To 23" 51',32.618" N
2	Longitude		From 85" 11' 51.574" E	To 85" 12'36.105" E

LAND DETAILS

Village	Plot no.
Langatu	2788, 2947, 3808
Sikri	1496
Pandaria	183
Barkagaon	3982, 3683,
Sirma	01

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Auction letter has been issued by Joint Secretary, Mines & Geology Deptt., Govt. of Jharkhand vide letter no. Kha.ni.-(Vividh)-117/2017-2090/M, dated 30.09.2022. According to provisions in Jharkhand State sand Mining Policy and its amendment. JSMDC Ltd. has been nominated as nodal agency for operating sand mines in category II.
2	CO	:	The CO, Barkagoan vide letter no. 422, dated 15.04.2023 has mentioned the plot no. of the project is not recorded as "Jungle-

			Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Hazaribag vide letter no. 788/Khanan, dated 20.06.2024 certified that no other balughat exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribagh vide letter no. 960, dated 25.05.2024 certified that the proposed project site is outside Eco Sensitive Zone of Hazaribag Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Hazaribag West Division vide letter no. 2231, dated 25.04.2023 and letter no. 3525, dated 19.06.2024 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Hazaribag district (Page No. – 105 & 106, Sl. No. – 01 to 06)
7	Gram Sabha	:	Gram Sabha conducted on 03.05.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Hazaribag vide Letter No. 679/Mining, dated 30.05.2024.
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 Manual Method	
2	Quarry Area	:	3.48 Ha	Mine Life / Lease Period – 15/08/2025 as per provisions of Jharkhand State Sand Mining Policy 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.
3	Waste Generation	:	00 cum	
4	Stripping Ratio	:	1:0	
5	Working Days	:	200 days per year	
6	Topography of Mine	:	Area represents gently sloping land.	
7	Explosive Requirement	:	None. No blasting required	
8	Diesel/Fuel requirement	:	Not required for mining.	

Production Details

Year	Production of Sand(cum)	Production of Sand(tonnes) On dry basis	Bench RL in Meters
1st	31320	52930	NA

The development plan submitted along with the mining plan relates to mining operation during the first year.

Land Use

EXISTING LAND USE PATTERN	
Type of Land	**Area in Hectares**
Forest Land	0.00
Govt. waste land (River)	3.48
Residential area	0.00
Company land	0.00
Private Land	0.00
Total	**3.48**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		1.392 Ha	00
2	Along Approach Road		1.80 km	360

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard

d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
k. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
l. Transportation from the river bed to the stockyard will be done using the existing road.
m. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
n. Wet sand will not be transported.

Solid Waste Management

No solid waste is generated during the course of mining.

ENVIRONMENT MANAGEMENT COST

Sl. No	Description	Capital Cost (lakh)	Recurring Cost (lakh)
1	Pollution Control & Dust Suppression	Nil	2.5
2	Pollution Monitoring i) Air pollution ii) Water pollution iii) Soil Quality iv) Noise Pollution	--	1.0
3	Plantation and salary for one gardener (part time basis).	1.08	0.75
4	Haul road Maintenance Cost	2.5	1.20
TOTAL		4.03	5.45

Schedule of Monitoring

S.No.	Description of Parameters	Schedule of Monitoring
1	Air Quality	24 hourly samples twice a week in each season except monsoon
2	Water Quality (Surface & Groundwater)	Once a season for 4 seasons in a year
3	Soil Quality	Once in a year in project area
4	Noise Level	Twice a year for first two years & then once a year
5	Socio-economic Condition	Once in 3 years
6	Plantation Monitoring	Once in a season

GREEN BELT

Year	No. of Trees	Capital Cost (Lakh)	Recurring Cost (Lakhs)
1st year	360	360*300=1.08	0.75
2nd year	Maintenance	-	0.75
3rd year	Maintenance	-	0.75
4th year	Maintenance	-	0.75
5th year	Maintenance	-	0.75
Total	360	1.08	3.75

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Sewage from rest shelter would be treated in Septic Tank soak pit.
- There is no other source for generation or discharge of trade effluent.

Air Quality Management

Sand will be mined manually. No mining equipment would be needed. However, diesel operated tippers/tractors would be used for transportation of sand from mine to stockyard.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all transport vehicles would be repaired & maintained regularly.

Loading of Product on tippers – Water will be sprinkled on blasted Sand mass before they are loaded to trucks for transport.

Movement of tippers on Road – Movement of tippers on road generate dust. For mitigation of this pollution following measures will be taken

- Regular water sprinkling on Haul Road by using water tankers.
- Regular repair of Haul Road
- All Trucks carrying Sand outside lease area will have PUC certificate.
- Transport tippers/traders moving on public road will be covered with tarpaulin.

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DICUSSED BELOW:

Road accidents

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

- Ensure speed limit for the haulage vehicle for 40 KMPH.
- Regular maintenance of haulage road
- Appropriate navigational signs informing sensitive area like school and habitation
- Regular maintenance of the vehicles.

Dust generation

No drilling involved

- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

Noise Generation

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 – 90 (A) measured at distance of 3m from the source.

Preventive measures

- Transportation activities would be confined during day time only.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise.
- Regular repair and maintenance of tippers/tractors.
- Plantation on both sides of haulage road.
- Tippers having PUC certified will be allowed to be used for sand transportation.

Health Hazards

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

Preventive Measures

Following mitigation measures would be taken to minimize this impact on health

- Regular water sprinkling on haulage roads
- Tree plantation on both sides of haulage road
- Tippers / Tractors carrying sand would be covered
- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

Accident at Site

This is a project with only source of accident at site would be movement of tippers /tractors within mine site for transportation of sand.

Preventive measures

Following mitigation measures would be taken to minimise risk of road accident-

- Separate alignment for movement of loaded vehicles coming out of mine site
- Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
- Regular maintenance and repair of haulage vehicles employed for sand transportation
- No overtaking of transportation vehicles within mine site
- Proper maintenance of haulage roads

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.

- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

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 Proposed Langatu, Sikri, Pandaria, Barkagaon & Sirma Sand Deposit Project on Barkagaon River Bed of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Langatu, Sikri, Pandaria, Barkagaon & Sirma, Block : Barkagaon, Distt. : Hazariabagh, Jharkhand (3.48 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).

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. The Environmental Clearance granted for lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.

IV. Replenishment study shall be conducted during pre-monsoon and post monsoon every year and study report have to be submitted to SEIAA / SEAC, Jharkhand. The production shall be restricted to 60% of the replenished quantity or the proposed quantity in the mine plan, which ever is less.

V. Suitable plant species of not less than 2 M height to be planted in area equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

VI. Dedicated water tanker to be provided for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VII. Pre-employment Occupational health checkup for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to submitted along with 6 monthly compliance.

VIII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted within 6 monthly compliance report with Geo-Tagged photographs.

IX. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted within 6 monthly compliance report.

X. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

XI. Project Authority will ensure that personal protective equipments such as protective clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel's.

XII. River Sand Mining shall not be done in rainy Season (mid June to mid October of each calendar year).

XIII. Dept. of Mines & Geology, Govt. of Jharkhand shall keep a strict vigil in the compliance of relevant provisions of applicable Jharkhand Minerals (Prevention of illegal mining, Transportation and Storage) Rule 2017 and its amendment especially scientific execution of mining plan (as approved by they themselves) and report violations if any is found as well as action taken for the same.

XIV. Project Proponent shall submit (to the SEIAA, Jharkhand, Regional Office of MoEF&CC at Ranchi, Jharkhand State Pollution Control Board) six monthly compliance report with evidence of the conditions within a fortnight after the end of every six month till validity period of Environmental Clearance.

XV. The project proponent before starting any activity / preparation of ground, on the leased area shall demarcate his lease hold by RCC pillars erected at the cost of lease holder after certification of the mining officer. On each pillar Geo-Coordinate and fore bearing / back bearing shall be written with permanent paint mark as described in the mining plan. All the pillars should remain intact at same geo-coordinate. Establishment / labeling of Benchmark at each pillars or ground control points.

XVI. Extraction of sand beyond annual production capacity is not permitted.

XVII. The Project Proponent should undertake the sand mining limited to 03 meter (three meter) depth by exclusively manual method.

XVIII. The stacking area of mined-out sand which shall be situated near the mining site within a fenced area from all sides to avoid being spread in the nearby areas by high winds and the height of stacking should not exceed 2 meter. Transportation shall be confined to day time only that is from sunrise to sunset, to avoid inconvenience to local population in any manner.

XIX. Mining activity shall not be done for mine lease where mining can cause danger to site of flood protection works, places of cultural, religious, historical and archaeological importance.

XX. Project Proponent shall submit the annual replenishment report certified by an authorized agency.

XXI. No labour camp shall be allowed in riverbed.

XXII. Provision shall be made for housing labour with all necessary infrastructure and facilities (outside mining Block and river-bed) such as fuel for cooking, toilets / mobile

toilets, safe drinking water, First-Aid facilities, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

XXIII. Labour & Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers shall be undertaken periodically to observe any adverse health impact due to exposure to dust and take corrective measures, if needed.

XXIV. The Project Proponent shall make arrangements for safe drinking water, first aid facility along with anti-venom injection, in case of emergency for the workers.

XXV. Sand and gravel may be extracted across the entire active channel during the dry season.

XXVI. Abandoned stream channels on the terrace and inactive floodplains be preferred rather than active channels and their deltas and flood plains. The stream should not be diverted to form the inactive channel.

XXVII. Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.

XXVIII. Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.

XXIX. Sand and gravel shall not be extracted up to a distance of 1 kilo meter (1 km.) from major bridges and highways on both sides, of five times (5x) of the span (x) of a bridge / public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.

XXX. Sand and gravel could be extracted from the downstream of the sand bar at river bends.

XXXI. Mining depth should be restricted to 3 meters and distance from the band should be $1/4^{th}$ of river width and should not be less than 7.5 meters.

XXXII. A buffer distance / unmined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed / prescribed by the regulatory authority shall be maintained.

XXXIII. River bed sand mining shall be restricted within the central $3/4^{th}$ width of the river/rivulet of 7.5 meters (inward) from river banks but up to 10% of the width of the river, as the case may be. Regulating authority while regulating the zone of river bed mining shall ensure that the objective to minimize the effects of riverbank erosion and consequential channel migration are achieved to the extent possible. In general, the area for removal of minerals shall not exceed 60% of the mine lease area, and any deviation of relaxation in this regard shall be adequately supported by the scientific report.

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2. **Proposed Bairisal Sand Deposit Project on Barakar River Bed of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Bairisal, Block : Barhi, Distt. : Hazariabagh, Jharkhand (4.70 Ha).**

(Proposal No : SIA/JH/MIN/ 483020/2024)

Name of the consultant : Rian Enviro Private Limited, Patna, Bihar.

This is a new project which has been taken for appraisal on 30.09.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 56400 cum/annum or 93060 TPA (dry basis).

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Bairisal Sand Deposit	
2	Lessee:	:	M/s Jharkhand State Mineral Development Corporation Ltd. (A Govt. of Jharkhand Enterprises)	
3	Lessee Address	:	Khanij Nigam Bhawan, Nepal House Area,Doranda, Ranchi – 834002 (Jharkhand)	
4	Lease Area	:	4.70 Ha	Acres– 11.614
5	Type of Land	:	Non-Forest Government Land (River Bed)	
6	Project Cost	:	112.52 Lakhs	
7	EMP Budget	:	Capital: Rs 4.01 Lakhs	Recurring: Rs. 4.9 Lakhs/ year
8	New or Expansion	:	New	
9	Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity	:	cum.: 56,400 cum (Dry basis)	Tonnes: 93,060 tonnes (dry basis)
10	Mine Life / Lease Period	:	**Lease Period i.e 15/08/2025 as per provisions of Jharkhand State Sand Mining Policy 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.**	
11	Man power	:	158	
12	Water Requirement	:	16.84 KLD=1.58 KLD (Drinking & Domestic Uses) + 0.26 (Plantation) KLD + 15 KLD (Dust Suppression).	
13	Water Source	:	By authorised hired tankers	
14	DG Set / power	:	NA	
15	Crusher	:	NA	
16	Nearest Water Body	:	Mining lease allocated on the inactive channel of the Barakar River.	
17	Nearest	:	Bairisal, approx. 0.49 km towards East.	

	Habitation		
18	Nearest Rail Station	:	Sarmantr Railway Station, Approx. 2.26 Km towards NE.
19	Nearest Air Port	:	Gaya International Airport, Approx. 84.36 km towards NW. Birsa Munda Airport, Ranchi, Approx. 115 km towards SSW.
20	Nearest Forest	:	Purhara Protected Forest , Approx. 1.99 Km towards West. Hathgada Protected Forest, Approx. 2.03 Km towards West.
21	Road & Highways	:	Urwan Kanko Jainagar Road, Approx. 1.49 km. towards North.

CO-ORDINATES

1	Latitude	From 23 50'57.913" N	To 23 51',32.618" N
2	Longitude	From 85" 11'51.574" E	To 85" 12'36.105" E

LAND DETAILS

Village	Khata no.	Plot no.
Bairisal	27	137, 227, 228

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Auction letter has been issued by Joint Secretary, Mines & Geology Deptt., Govt. of Jharkhand vide letter no. Kha.ni.-(Vividh)-117/2017-2090/M, dated 30.09.2022. According to provisions in Jharkhand State sand Mining Policy and its amendment. JSMDC Ltd. has been nominated as nodal agency for operating sand mines in category II.
2	CO	:	The CO, Barhi, Hazaribag vide letter no. 343, dated 24.04.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Hazaribag vide letter no. 789/Khanan, dated 20.06.2024 certified that no other balughat exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribagh vide letter no. 963, dated 25.05.2024 certified that the proposed project site is outside Eco Sensitive Zone of Hazaribag Wildlife Sanctuary.

5	DFO Forest Distance	:	Division Forest Officer, Hazaribag West Division vide letter no. 2231, dated 25.04.2023 and memo no. 3531, dated 19.06.2024 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Hazaribag district (Page No. – 106, Sl. No. – 02)
7	Gram Sabha	:	BDO, Barhi, Hazaribag vide letter no. 864, dated 06.06.2024 informed that Gram Sabha conducted on 06.06.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Hazaribag vide Letter No. 685/Mining, dated 30.05.2024.
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 Manual Method	
2	Quarry Area	:	4.70 Ha	Mine Life / Lease Period – 15/08/2025 as per provisions of Jharkhand State Sand Mining Policy 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.
3	Waste Generation	:	00 cum	
4	Stripping Ratio	:	1:0	
5	Working Days	:	200 days per year	
6	Topography of Mine	:	Area represents gently sloping land.	
7	Explosive Requirement	:	None. No blasting required	
8	Diesel/Fuel requirement	:	Not required for mining.	

Production Details

Year	Production of Sand(cum)	Production of Sand(tonnes) On dry basis	Bench RL in Meters
1st	56400	93060	NA

The development plan submitted along with the mining plan relates to mining operation during the first year.

Land Use

EXISTING LAND USE PATTERN	
Type of Land	**Area in Hectares**
Forest Land	0.00
Govt. waste land (River)	4.70
Residential area	0.00
Company land	0.00
Private Land	0.00
Total	**4.70**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		1.88 Ha	00
2	Along Approach Road		0.44 km	88

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.

i. If any tree felling than necessary permission shall be taken from the competent authority.

j. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

k. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

l. Transportation from the river bed to the stockyard will be done using the existing road.

m. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.

n. Wet sand will not be transported.

Solid Waste Management

No solid waste is generated during the course of mining.

ENVIRONMENT MANAGEMENT COST

Sl. No	Description	Capital Cost (lakh)	Recurring Cost (lakh)
1	Pollution Control & Dust Suppression	Nil	2.5
2	Pollution Monitoring i) Air pollution ii) Water pollution iii) Soil Quality iv) Noise Pollution	--	1.0
3	Plantation and salary for one gardener (part time basis).	0.26	0.20
4	Haul road Maintenance Cost	3.75	1.20
TOTAL		4.01	4.9

Schedule of Monitoring

S.No.	Description of Parameters	Schedule of Monitoring
1	Air Quality	24 hourly samples twice a week in each season except monsoon
2	Water Quality (Surface & Groundwater)	Once a season for 4 seasons in a year
3	Soil Quality	Once in a year in project area
4	Noise Level	Twice a year for first two years & then once a year
5	Socio-economic Condition	Once in 3 years

6	Plantation Monitoring	Once in a season

GREEN BELT

Year	No. of Trees	Capital Cost (Lakh)	Recurring Cost (Lakhs)
1st year	88	88*300=0.26	0.20
2nd year	Maintenance	-	0.20
3rd year	Maintenance	-	0.20
4th year	Maintenance	-	0.20
5th year	Maintenance	-	0.20
Total	88	0.26	1.0

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Sewage from rest shelter would be treated in Septic Tank soak pit.
- There is no other source for generation or discharge of trade effluent.

Air Quality Management

Sand will be mined manually. No mining equipment would be needed. However, diesel operated tippers/tractors would be used for transportation of sand from mine to stockyard.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all transport vehicles would be repaired & maintained regularly.

Loading of Product on tippers – Water will be sprinkled on blasted Sand mass before they are loaded to trucks for transport.

Movement of tippers on Road – Movement of tippers on road generate dust. For mitigation of this pollution following measures will be taken

- Regular water sprinkling on Haul Road by using water tankers.
- Regular repair of Haul Road
- All Trucks carrying Sand outside lease area will have PUC certificate.
- Transport tippers/traders moving on public road will be covered with tarpaulin.

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DICUSSED BELOW:

Road accidents

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

- Ensure speed limit for the haulage vehicle for 40 KMPH.
- Regular maintenance of haulage road
- Appropriate navigational signs informing sensitive area like school and habitation
- Regular maintenance of the vehicles.

Dust generation

No drilling involved

- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

Noise Generation

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 – 90 (A) measured at distance of 3m from the source.

Preventive measures

- Transportation activities would be confined during day time only.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise.
- Regular repair and maintenance of tippers/tractors.
- Plantation on both sides of haulage road.
- Tippers having PUC certified will be allowed to be used for sand transportation.

Health Hazards

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

Preventive Measures

Following mitigation measures would be taken to minimize this impact on health

- Regular water sprinkling on haulage roads
- Tree plantation on both sides of haulage road
- Tippers / Tractors carrying sand would be covered
- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

Accident at Site

This is a project with only source of accident at site would be movement of tippers /tractors within mine site for transportation of sand.

Preventive measures

Following mitigation measures would be taken to minimise risk of road accident-

- Separate alignment for movement of loaded vehicles coming out of mine site
- Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
- Regular maintenance and repair of haulage vehicles employed for sand transportation
- No overtaking of transportation vehicles within mine site

- Proper maintenance of haulage roads

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

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 Proposed Bairisal Sand Deposit Project on Barakar River Bed of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Bairisal, Block : Barhi, Distt. : Hazariabagh, Jharkhand (4.70 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).

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. The Environmental Clearance granted for lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.

IV. Replenishment study shall be conducted during pre-monsoon and post monsoon every year and study report have to be submitted to SEIAA / SEAC, Jharkhand. The production shall be restricted to 60% of the replenished quantity or the proposed quantity in the mine plan, which ever is less.

V. Suitable plant species of not less than 2 M height to be planted in area equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

VI. Dedicated water tanker to be provided for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VII. Pre-employment Occupational health checkup for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to submitted along with 6 monthly compliance.

VIII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted within 6 monthly compliance report with Geo-Tagged photographs.

IX. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted within 6 monthly compliance report.

X. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

XI. Project Authority will ensure that personal protective equipments such as protective clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel's.

XII. River Sand Mining shall not be done in rainy Season (mid June to mid October of each calendar year).

XIII. Dept. of Mines & Geology, Govt. of Jharkhand shall keep a strict vigil in the compliance of relevant provisions of applicable Jharkhand Minerals (Prevention of illegal mining, Transportation and Storage) Rule 2017 and its amendment especially scientific execution of mining plan (as approved by they themselves) and report violations if any is found as well as action taken for the same.

XIV. Project Proponent shall submit (to the SEIAA, Jharkhand, Regional Office of MoEF&CC at Ranchi, Jharkhand State Pollution Control Board) six monthly compliance report with evidence of the conditions within a fortnight after the end of every six month till validity period of Environmental Clearance.

XV. The project proponent before starting any activity / preparation of ground, on the leased area shall demarcate his lease hold by RCC pillars erected at the cost of lease holder after certification of the mining officer. On each pillar Geo-Coordinate and fore bearing / back bearing shall be written with permanent paint mark as described in the

mining plan. All the pillars should remain intact at same geo-coordinate. Establishment / labeling of Benchmark at each pillars or ground control points.

XVI. Extraction of sand beyond annual production capacity is not permitted.

XVII. The Project Proponent should undertake the sand mining limited to 03 meter (three meter) depth by exclusively manual method.

XVIII. The stacking area of mined-out sand which shall be situated near the mining site within a fenced area from all sides to avoid being spread in the nearby areas by high winds and the height of stacking should not exceed 2 meter. Transportation shall be confined to day time only that is from sunrise to sunset, to avoid inconvenience to local population in any manner.

XIX. Mining activity shall not be done for mine lease where mining can cause danger to site of flood protection works, places of cultural, religious, historical and archaeological importance.

XX. Project Proponent shall submit the annual replenishment report certified by an authorized agency.

XXI. No labour camp shall be allowed in riverbed.

XXII. Provision shall be made for housing labour with all necessary infrastructure and facilities (outside mining Block and river-bed) such as fuel for cooking, toilets / mobile toilets, safe drinking water, First-Aid facilities, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

XXIII. Labour & Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers shall be undertaken periodically to observe any adverse health impact due to exposure to dust and take corrective measures, if needed.

XXIV. The Project Proponent shall make arrangements for safe drinking water, first aid facility along with anti-venom injection, in case of emergency for the workers.

XXV. Sand and gravel may be extracted across the entire active channel during the dry season.

XXVI. Abandoned stream channels on the terrace and inactive floodplains be preferred rather than active channels and their deltas and flood plains. The stream should not be diverted to form the inactive channel.

XXVII. Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.

XXVIII. Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.

XXIX. Sand and gravel shall not be extracted up to a distance of 1 kilo meter (1 km.) from major bridges and highways on both sides, of five times (5x) of the span (x) of a bridge / public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.

XXX. Sand and gravel could be extracted from the downstream of the sand bar at river bends.

XXXI. Mining depth should be restricted to 3 meters and distance from the band should be 1/4th of river width and should not be less than 7.5 meters.

XXXII. A buffer distance / unmined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed / prescribed by the regulatory authority shall be maintained.

XXXIII. River bed sand mining shall be restricted within the central 3/4th width of the river/rivulet of 7.5 meters (inward) from river banks but up to 10% of the width of the river, as the case may be. Regulating authority while regulating the zone of river bed mining shall ensure that the objective to minimize the effects of riverbank erosion and consequential channel migration are achieved to the extent possible. In general, the area for removal of minerals shall not exceed 60% of the mine lease area, and any deviation of relaxation in this regard shall be adequately supported by the scientific report.

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3. **Proposed Gosain Balia & Harli Sand Deposit Project on Badmahi River Bed of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Gosain Balia & Harli, Block : Barkagaon, Distt. : Hazariabagh, Jharkhand (1.00 Ha).**

(Proposal No : SIA/JH/MIN/ 483008/2024)

Name of the consultant : Rian Enviro Private Limited, Patna, Bihar.

This is a new project which has been taken for appraisal on 30.09.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 12000 cum/annum or 19560 TPA (dry basis).

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Gosain Balia & Harli Sand Deposit	
2	Lessee:	:	M/s Jharkhand State Mineral Development Corporation Ltd. (A Govt. of Jharkhand Enterprises)	
3	Lessee Address	:	Khanij Nigam Bhawan, Nepal House Area,Doranda, Ranchi – 834002 (Jharkhand)	
4	Lease Area	:	1.00 Ha	Acres– 2.47
5	Type of Land	:	Non-Forest Government Land (River Bed)	

6	Project Cost	:	31.32 Lakhs	
7	EMP Budget	:	Capital: Rs 4.03 Lakhs	Recurring: Rs. 5.2 Lakhs/ year
8	New or Expansion	:	New	
9	Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity	:	cum.: 12,000 cum (dry basis)	Tonnes: 19,560 tonnes (dry basis)
10	Mine Life / Lease Period	:	**Lease Period i.e 15/08/2025 as per provisions of Jharkhand State Sand Mining Policy 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.**	
11	Man power	:	42	
12	Water Requirement	:	14.2 KLD=0.42 KLD (Drinking & Domestic Uses) + 0.78 (Plantation) KLD + 13 KLD (Dust Suppression).	
13	Water Source	:	By authorised hired tankers	
14	DG Set / power	:	NA	
15	Crusher	:	NA	
16	Nearest Water Body	:	Mining lease allocated on the inactive channel of the Badmahi River.	
17	Nearest Habitation	:	Harli, Approx. 0.79 km towards North.	
18	Nearest Rail Station	:	Bes Railway Station, Approx. 10.67 Km towards NNE.	
19	Nearest Air Port	:	Birsa Munda Airport Ranchi, Approx. 55.96 km towards South.	
20	Nearest Forest	:	Barkagaon RF, Approx. 4.49 Km towards WSW.	
21	Road & Highways	:	Badam Road, Approx. 0.55 km. towards North.	

CO-ORDINATES

1	Latitude		From 24 20'13.9774" N	To 24" 20',39.3461" N
2	Longitude		From 85'32' 26.4214" E	To 85" 32',38.0099" E

LAND DETAILS

Village	Khata no.	Plot no.
Gosain Balia	108	01
Harli	186	1985, 2248

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Auction letter has been issued by Joint Secretary, Mines & Geology Deptt., Govt. of Jharkhand vide letter no. Kha.ni.-(Vividh)-117/2017-2090/M, dated 30.09.2022. According to provisions in Jharkhand State sand Mining Policy and its amendment. JSMDC Ltd. has been nominated as nodal agency for operating sand mines in category II.
2	CO	:	The CO, Barkagoan, Hazaribag vide letter no. 440, dated 25.05.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Hazaribag vide letter no. 786/Khanan, dated 20.06.2024 certified that no other balughat exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribagh vide letter no. 958, dated 25.05.2024 certified that the proposed project site is outside Eco Sensitive Zone of Hazaribag Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Hazaribag West Division vide letter no. 2231, dated 25.04.2023 and memo no. 3524, dated 19.06.2024 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Hazaribag district (Page No. – 107, Sl. No. – 18)
7	Gram Sabha	:	BDO, Barkagoan vide letter no. 991, dated 12.06.2024 informed that Gram Sabha conducted on 07.05.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Hazaribag vide Letter No. 681/Mining, dated 30.05.2024.
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 Manual Method	
2	Quarry Area	:	1.00 Ha	Mine Life / Lease Period – 15/08/2025 as per provisions of Jharkhand State Sand Mining Policy 2017 and extendable

				based on amendments in Jharkhand State Sand Mining Policy.
3	Waste Generation	:	00 cum	
4	Stripping Ratio	:	1:0	
5	Working Days	:	200 days per year	
6	Topography of Mine	:	Area represents gently sloping land.	
7	Explosive Requirement	:	None. No blasting required	
8	Diesel/Fuel requirement	:	Not required for mining.	

Production Details

Year	Production of Sand(cum)	Production of Sand(tonnes) On dry basis	Bench RL in Meters
1st	12000	19560	NA

The development plan submitted along with the mining plan relates to mining operation during the first year.

Land Use

EXISTING LAND USE PATTERN	
Type of Land	**Area in Hectares**
Forest Land	0.00
Govt. waste land (River)	1.00
Residential area	0.00
Company land	0.00
Private Land	0.00
Total	**1.00**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.40 Ha	00
2	Along Approach Road		1.30 km	260

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development,

Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
k. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
l. Transportation from the river bed to the stockyard will be done using the existing road.
m. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
n. Wet sand will not be transported.

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No solid waste is generated during the course of mining.

ENVIRONMENT MANAGEMENT COST

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5th year	Maintenance	-	0.5
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- Appropriate navigational signs informing sensitive area like school and habitation
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No drilling involved

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- Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
- Regular maintenance and repair of haulage vehicles employed for sand transportation
- No overtaking of transportation vehicles within mine site
- Proper maintenance of haulage roads

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- Only trained drivers will be hired.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Proposed Gosain Balia & Harli Sand Deposit Project on Badmahi River Bed of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Gosain Balia & Harli, Block : Barkagaon, Distt. : Hazariabagh, Jharkhand (1.00 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

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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. The Environmental Clearance granted for lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.

IV. Replenishment study shall be conducted during pre-monsoon and post monsoon every year and study report have to be submitted to SEIAA / SEAC, Jharkhand. The production shall be restricted to 60% of the replenished quantity or the proposed quantity in the mine plan, which ever is less.

V. Suitable plant species of not less than 2 M height to be planted in area equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

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XII. River Sand Mining shall not be done in rainy Season (mid June to mid October of each calendar year).

XIII. Dept. of Mines & Geology, Govt. of Jharkhand shall keep a strict vigil in the compliance of relevant provisions of applicable Jharkhand Minerals (Prevention of illegal mining, Transportation and Storage) Rule 2017 and its amendment especially scientific execution of mining plan (as approved by they themselves) and report violations if any is found as well as action taken for the same.

XIV. Project Proponent shall submit (to the SEIAA, Jharkhand, Regional Office of MoEF&CC at Ranchi, Jharkhand State Pollution Control Board) six monthly compliance report with evidence of the conditions within a fortnight after the end of every six month till validity period of Environmental Clearance.

XV. The project proponent before starting any activity / preparation of ground, on the leased area shall demarcate his lease hold by RCC pillars erected at the cost of lease holder after certification of the mining officer. On each pillar Geo-Coordinate and fore bearing / back bearing shall be written with permanent paint mark as described in the mining plan. All the pillars should remain intact at same geo-coordinate. Establishment / labeling of Benchmark at each pillars or ground control points.

XVI. Extraction of sand beyond annual production capacity is not permitted.

XVII. The Project Proponent should undertake the sand mining limited to 03 meter (three meter) depth by exclusively manual method.

XVIII. The stacking area of mined-out sand which shall be situated near the mining site within a fenced area from all sides to avoid being spread in the nearby areas by high winds and the height of stacking should not exceed 2 meter. Transportation shall be confined to day time only that is from sunrise to sunset, to avoid inconvenience to local population in any manner.

XIX. Mining activity shall not be done for mine lease where mining can cause danger to site of flood protection works, places of cultural, religious, historical and archaeological importance.

XX. Project Proponent shall submit the annual replenishment report certified by an authorized agency.

XXI. No labour camp shall be allowed in riverbed.

XXII. Provision shall be made for housing labour with all necessary infrastructure and facilities (outside mining Block and river-bed) such as fuel for cooking, toilets / mobile toilets, safe drinking water, First-Aid facilities, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

XXIII. Labour & Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers shall be undertaken periodically to observe any adverse health impact due to exposure to dust and take corrective measures, if needed.

XXIV. The Project Proponent shall make arrangements for safe drinking water, first aid facility along with anti-venom injection, in case of emergency for the workers.

XXV. Sand and gravel may be extracted across the entire active channel during the dry season.

XXVI. Abandoned stream channels on the terrace and inactive floodplains be preferred rather than active channels and their deltas and flood plains. The stream should not be diverted to form the inactive channel.

XXVII. Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.

XXVIII. Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.

XXIX. Sand and gravel shall not be extracted up to a distance of 1 kilo meter (1 km.) from major bridges and highways on both sides, of five times (5x) of the span (x) of a bridge / public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.

XXX. Sand and gravel could be extracted from the downstream of the sand bar at river bends.

XXXI. Mining depth should be restricted to 3 meters and distance from the band should be $1/4^{th}$ of river width and should not be less than 7.5 meters.

XXXII. A buffer distance / unmined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed / prescribed by the regulatory authority shall be maintained.

XXXIII. River bed sand mining shall be restricted within the central $3/4^{th}$ width of the river/rivulet of 7.5 meters (inward) from river banks but up to 10% of the width of the river, as the case may be. Regulating authority while regulating the zone of river bed mining shall ensure that the objective to minimize the effects of riverbank erosion and consequential channel migration are achieved to the extent possible. In general, the area for removal of minerals shall not exceed 60% of the mine lease area, and any deviation of relaxation in this regard shall be adequately supported by the scientific report.

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4. **Proposed Chobdar Balia & Harli Sand Deposit Project on Badmahi River Bed of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Chobdar Balia & Harli, Block : Barkagaon, Distt. : Hazariabagh, Jharkhand (0.79 Ha).**

(Proposal No : SIA/JH/MIN/ 486532/2024)

Name of the consultant : Rian Enviro Private Limited, Patna, Bihar.

This is a new project which has been taken for appraisal on 30.09.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 9,480 cum/annum or 15,452 TPA (dry basis).

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Chobdar Balia & Harli Sand Deposit	
2	Lessee:	:	M/s Jharkhand State Mineral Development Corporation Ltd. (A Govt. of Jharkhand Enterprises)	
3	Lessee Address	:	Khanij Nigam Bhawan, Nepal House Area, Doranda, Ranchi – 834002 (Jharkhand)	
4	Lease Area	:	0.79 Ha	Acres– 1.95
5	Type of Land	:	Non-Forest Government Land (River Bed)	
6	Project Cost	:	26.42 Lakhs	
7	EMP Budget	:	Capital: Rs 1.14 Lakhs	Recurring: Rs. 4.9 Lakhs/ year
8	New or Expansion	:	New	
9	Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity	:	cum.: 9,480 cum (dry basis)	Tonnes: 15,452 tonnes (dry basis)
10	Mine Life / Lease Period	:	**Lease Period i.e 15/08/2025 as per provisions of Jharkhand State Sand Mining Policy 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.**	
11	Man power	:	35	
12	Water Requirement	:	3.74 KLD=0.35 KLD (Drinking & Domestic Uses) + 0.39 (Plantation) KLD + 3 KLD (Dust Suppression).	
13	Water Source	:	By authorised hired tankers	
14	DG Set / power	:	NA	
15	Crusher	:	NA	
16	Nearest Water	:	Mining lease allocated on the inactive channel of the Badmahi	

	Body		River.
17	Nearest Habitation	:	Kumhardiha, Approx. 0.52 km towards WSW.
18	Nearest Rail Station	:	Bes Railway Station, Approx. 11.35 Km towards NNE.
19	Nearest Air Port	:	Birsa Munda Airport Ranchi, Approx. 55.96 km towards South.
20	Nearest Forest	:	Forest, Approx. 4.13 Km towards WSW.
21	Road & Highways	:	Badam Road, Approx. 0.55 km. towards North.

CO-ORDINATES

1	Latitude		From 23° 49'05.3341" N	To 23°49'07.4845" N
2	Longitude		From 85°15' 45.9581" E	To 85°15'55.2509" E

LAND DETAILS

Village	Khata no.	Plot no.
Chobdar Balia	95	01
Harli	186	1985, 2248

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Auction letter has been issued by Joint Secretary, Mines & Geology Deptt., Govt. of Jharkhand vide letter no. Kha.ni.-(Vividh)-117/2017-2090/M, dated 30.09.2022. According to provisions in Jharkhand State sand Mining Policy and its amendment. JSMDC Ltd. has been nominated as nodal agency for operating sand mines in category II.
2	CO	:	The CO, Barkagoan, Hazaribag vide letter no. 440, dated 25.05.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Hazaribag vide letter no. 790/Khanan, dated 20.06.2024 certified that 01 other balughat (4.14 Ha.) exists within 500 m radius from proposed project site and total area is 4.93 Ha.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribagh vide letter no. 752, dated 12.04.2023 certified that the proposed project site is outside Eco Sensitive Zone of Hazaribag Wildlife Sanctuary.

5	DFO Forest Distance	:	Division Forest Officer, Hazaribag West Division vide letter no. 2231, dated 25.04.2023 and memo no. 3527, dated 19.06.2024 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Hazaribag district (Page No. –108, Sl. No. – 19 & 20)
7	Gram Sabha	:	BDO, Barkagoan vide letter no. 991, dated 12.06.2024 informed that Gram Sabha conducted on 07.05.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Hazaribag vide Letter No. 816/Mining, dated 24.06.2024.
9	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Manual Method	
2	Quarry Area	:	0.79 Ha	Mine Life / Lease Period – 15/08/2025 as per provisions of Jharkhand State Sand Mining Policy 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.
3	Waste Generation	:	00 cum	
4	Stripping Ratio	:	1:0	
5	Working Days	:	200 days per year	
6	Topography of Mine	:	Area represents gently sloping land.	
7	Explosive Requirement	:	None. No blasting required	
8	Diesel/Fuel requirement	:	Not required for mining.	

Production Details

Year	Production of Sand(cum)	Production of Sand(tonnes) On dry basis	Bench RL in Meters
1st	9480	15452	NA

The development plan submitted along with the mining plan relates to mining operation during the first year.

Land Use

EXISTING LAND USE PATTERN	
Type of Land	**Area in Hectares**
Forest Land	0.00
Govt. waste land (River)	0.79
Residential area	0.00
Company land	0.00
Private Land	0.00
Total	**0.79**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.31 Ha	00
2	Along Approach Road		0.65 km	130

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.

h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
k. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
l. Transportation from the river bed to the stockyard will be done using the existing road.
m. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
n. Wet sand will not be transported.

Solid Waste Management

No solid waste is generated during the course of mining.

ENVIRONMENT MANAGEMENT COST

Sl. No	Description	Capital Cost (lakh)	Recurring Cost (lakh)
1	Pollution Control & Dust Suppression	Nil	2.5
2	Pollution Monitoring i) Air pollution ii) Water pollution iii) Soil Quality iv) Noise Pollution	--	1.0
3	Plantation and salary for one gardener (part time basis).	0.39	0.20
4	Haul road Maintenance Cost	0.75	1.20
TOTAL		1.14	4.9

Schedule of Monitoring

S.No.	Description of Parameters	Schedule of Monitoring
1	Air Quality	24 hourly samples twice a week in each season except monsoon
2	Water Quality (Surface & Groundwater)	Once a season for 4 seasons in a year
3	Soil Quality	Once in a year in project area

4	Noise Level	Twice a year for first two years & then once a year
5	Socio-economic Condition	Once in 3 years
6	Plantation Monitoring	Once in a season

GREEN BELT

Year	No. of Trees	Capital Cost (Lakh)	Recurring Cost (Lakhs)
1st year	130	130*300=0.39	0.2
2nd year	Maintenance	-	0.2
3rd year	Maintenance	-	0.2
4th year	Maintenance	-	0.2
5th year	Maintenance	-	0.2
Total	130	0.39	1.0

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Sewage from rest shelter would be treated in Septic Tank soak pit.
- There is no other source for generation or discharge of trade effluent.

Air Quality Management

Sand will be mined manually. No mining equipment would be needed. However, diesel operated tippers/tractors would be used for transportation of sand from mine to stockyard.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all transport vehicles would be repaired & maintained regularly.

Loading of Product on tippers – Water will be sprinkled on blasted Sand mass before they are loaded to trucks for transport.

Movement of tippers on Road – Movement of tippers on road generate dust. For mitigation of this pollution following measures will be taken

- Regular water sprinkling on Haul Road by using water tankers.
- Regular repair of Haul Road
- All Trucks carrying Sand outside lease area will have PUC certificate.
- Transport tippers/traders moving on public road will be covered with tarpaulin.

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DICUSSED BELOW:

Road accidents

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

- Ensure speed limit for the haulage vehicle for 40 KMPH.
- Regular maintenance of haulage road
- Appropriate navigational signs informing sensitive area like school and habitation
- Regular maintenance of the vehicles.

Dust generation

No drilling involved

- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

Noise Generation

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 – 90 (A) measured at distance of 3m from the source.

Preventive measures

- Transportation activities would be confined during day time only.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise.
- Regular repair and maintenance of tippers/tractors.
- Plantation on both sides of haulage road.
- Tippers having PUC certified will be allowed to be used for sand transportation.

Health Hazards

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

Preventive Measures

Following mitigation measures would be taken to minimize this impact on health

- Regular water sprinkling on haulage roads
- Tree plantation on both sides of haulage road
- Tippers / Tractors carrying sand would be covered
- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

Accident at Site

This is a project with only source of accident at site would be movement of tippers /tractors within mine site for transportation of sand.

Preventive measures

Following mitigation measures would be taken to minimise risk of road accident-

- Separate alignment for movement of loaded vehicles coming out of mine site
- Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
- Regular maintenance and repair of haulage vehicles employed for sand transportation
- No overtaking of transportation vehicles within mine site
- Proper maintenance of haulage roads

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

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 Proposed Chobdar Balia & Harli Sand Deposit Project on Badmahi River Bed of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Chobdar Balia & Harli, Block : Barkagaon, Distt. : Hazariabagh, Jharkhand (0.79 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).

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. The Environmental Clearance granted for lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.

IV. Replenishment study shall be conducted during pre-monsoon and post monsoon every year and study report have to be submitted to SEIAA / SEAC, Jharkhand. The production shall be restricted to 60% of the replenished quantity or the proposed quantity in the mine plan, which ever is less.

V. Suitable plant species of not less than 2 M height to be planted in area equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

VI. Dedicated water tanker to be provided for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VII. Pre-employment Occupational health checkup for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to submitted along with 6 monthly compliance.

VIII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted within 6 monthly compliance report with Geo-Tagged photographs.

IX. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted within 6 monthly compliance report.

X. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

XI. Project Authority will ensure that personal protective equipments such as protective clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel's.

XII. River Sand Mining shall not be done in rainy Season (mid June to mid October of each calendar year).

XIII. Dept. of Mines & Geology, Govt. of Jharkhand shall keep a strict vigil in the compliance of relevant provisions of applicable Jharkhand Minerals (Prevention of illegal mining, Transportation and Storage) Rule 2017 and its amendment especially scientific execution of mining plan (as approved by they themselves) and report violations if any is found as well as action taken for the same.

XIV. Project Proponent shall submit (to the SEIAA, Jharkhand, Regional Office of MoEF&CC at Ranchi, Jharkhand State Pollution Control Board) six monthly compliance report

with evidence of the conditions within a fortnight after the end of every six month till validity period of Environmental Clearance.

XV. The project proponent before starting any activity / preparation of ground, on the leased area shall demarcate his lease hold by RCC pillars erected at the cost of lease holder after certification of the mining officer. On each pillar Geo-Coordinate and fore bearing / back bearing shall be written with permanent paint mark as described in the mining plan. All the pillars should remain intact at same geo-coordinate. Establishment / labeling of Benchmark at each pillars or ground control points.

XVI. Extraction of sand beyond annual production capacity is not permitted.

XVII. The Project Proponent should undertake the sand mining limited to 03 meter (three meter) depth by exclusively manual method.

XVIII. The stacking area of mined-out sand which shall be situated near the mining site within a fenced area from all sides to avoid being spread in the nearby areas by high winds and the height of stacking should not exceed 2 meter. Transportation shall be confined to day time only that is from sunrise to sunset, to avoid inconvenience to local population in any manner.

XIX. Mining activity shall not be done for mine lease where mining can cause danger to site of flood protection works, places of cultural, religious, historical and archaeological importance.

XX. Project Proponent shall submit the annual replenishment report certified by an authorized agency.

XXI. No labour camp shall be allowed in riverbed.

XXII. Provision shall be made for housing labour with all necessary infrastructure and facilities (outside mining Block and river-bed) such as fuel for cooking, toilets / mobile toilets, safe drinking water, First-Aid facilities, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

XXIII. Labour & Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers shall be undertaken periodically to observe any adverse health impact due to exposure to dust and take corrective measures, if needed.

XXIV. The Project Proponent shall make arrangements for safe drinking water, first aid facility along with anti-venom injection, in case of emergency for the workers.

XXV. Sand and gravel may be extracted across the entire active channel during the dry season.

XXVI. Abandoned stream channels on the terrace and inactive floodplains be preferred rather than active channels and their deltas and flood plains. The stream should not be diverted to form the inactive channel.

XXVII. Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.

XXVIII. Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.

XXIX. Sand and gravel shall not be extracted up to a distance of 1 kilo meter (1 km.) from major bridges and highways on both sides, of five times (5x) of the span (x) of a bridge / public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.

XXX. Sand and gravel could be extracted from the downstream of the sand bar at river bends.

XXXI. Mining depth should be restricted to 3 meters and distance from the band should be $1/4^{th}$ of river width and should not be less than 7.5 meters.

XXXII. A buffer distance / unmined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed / prescribed by the regulatory authority shall be maintained.

XXXIII. River bed sand mining shall be restricted within the central $3/4^{th}$ width of the river/rivulet of 7.5 meters (inward) from river banks but up to 10% of the width of the river, as the case may be. Regulating authority while regulating the zone of river bed mining shall ensure that the objective to minimize the effects of riverbank erosion and consequential channel migration are achieved to the extent possible. In general, the area for removal of minerals shall not exceed 60% of the mine lease area, and any deviation of relaxation in this regard shall be adequately supported by the scientific report.

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5. **Piparwar UG (Phase I) (0.87 MTPA) Piparwar area of M/s Central Coalfields Ltd., Village : Benti, Mangardaha, Kichto, Thena & Bijain, Tehsil : Tandwa, Distt. : Chatra, Jharkhand (464.69 Ha).**

(Proposal No : SIA/JH/CMIN/ 494389/2024)

Name of the consultant: CMPDI, Kanke Road, Ranchi

This is a greenfield underground coal mine project which has been taken for appraisal on 30.09.2024.

Application for: EC for underground Coal Mining: 0.87 MTPA in an area of 464.69 Ha

Project Sector: 1(a) Mining of Minerals (Coal) as per EIA Notification, 2006, Category: B1. Application for Environmental Clearance (EC) after ToR.

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 113^{th} meeting held on 30.05.2024 to 03.06.2024 and SEIAA, Jharkhand has approved the **extension**

of validity of ToR in 113th meeting held on 07th & 08th June, 2024. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/3146/2024/110, dated 14.06.2024. The final EIA / EMP submitted by PP to SEAC on 19.09.2024.

Piparwar UG (Phase-I) is a greenfield underground coal mining project which has been planned to work within and beneath the leasehold of Piparwar OCP. Project is located in NK Coalfields under administration of Piparwar area of Central Coalfields Limited. This project falls within revenue villages Benti, Mangardaha, Kichto, Thena & Bijain of Tandwa CD Block, Chatra Dist. of Jharkhand.

An application in Form-I was submitted to MoEF&CC as per EIA Notification, 2006 on 12.03.2020 for obtaining ToR. EAC had appraised the project on 17th April 2020 and MoEF&CC recommended terms of reference (ToR) for Piparwar UG (Phase-I) 0.87 MTPA & 464.69 HA. on 08.06.2020 vide letter no: IA-J-11015/10/2020-IA-II (M).

The ToR of Piparwar UG (Phase-I) was issued vide no: IA-J-11015/10/2010-IA-II(M) Dated: 08.06.2020. As per the ToR letter, validity of ToR was for 3 years. Further, the ToR validity of proposal was extended upto 31.03.24 in line with MoEF&CC S.O. 221 (E) Dated: 18.01.2021. MoEF&CC S.O. 751(E) dated 17.02.2020 states that the validity of ToR for new project will be valid upto 4 years. After revalidation of the ToR by SEIAA, the validity of ToR is upto March 31, 2025.

PROJECT AND LOCATION DETAILS:

Sl	Parameter		Details	
1	Project Name	:	Piparwar UG (Phase-I)	
2	Project Proponent	:	Shri Sanjay Kumar, Project Officer, Piparwar UG (Phase-I),	
3	Address	:	Piparwar Area, Central Coalfields Limited, PO-Bachra, Dist-Chatra, Jharkhand, Pin-829201 Phone Number – 8987784403	
4	Area	:	Ha: 464.69 ha	Acres: 1,148.25 Acres
5	Type of Land	:	Forest Land: 165.95 Ha & Non-Forest Land: 298.74 Ha	
6	Project Cost	:	39031 Lakh	
9	New or Expansion	:	New	
10	Mineable Reserves	:	Coal: 8.83 Million Tonnes	OB: NA as it is an UG project
11	Mine Life	:	14 years	
12	Man power	:	119	
13	Water Requirement	:	480 KL/Day	
14	Water Source	:	Mine seepage & rain water stored in mine sump	
15	DG Set / power	:	The power shall be supplied to the proposed main mine substation from existing 33 kV overhead transmission line supplying power to opencast project	
16	Crusher	:	No	
17	Nearest Water Body	:	Damodar River (0.1 KM)	
18	Nearest Habitation	:	Khalari (7 KM)	
19	Nearest Rail Station	:	Ray (5 KM)	

20	Nearest Air Port	:	Ranchi (70 KM)
21	Nearest Forest	:	Within Project boundary
22	Road & Highways	:	State Highway No 7

CO-ORDINATES:

1	Latitude	:	From 23°42'39.81'' N	To 23°44' 09.21'' N
2	Longitude	:	From 85°01'09.02'' E	To 85°03'15.47'' E.

Total forest land falling within the project boundary of Piparwar UG (Phase I) is 165.95 Ha, involving total of 5 proposals. Different forest proposals in Piparwar UG (Phase I) are mentioned below:

SN	Forest Proposal	Area as per FC Obtained (Ha)	Area involved in Piparwar UGP (Ha)	MoEF&CC file no with date of Stage-II FC	Present Status
1	Piparwar Coal Project of CCL	13.11	2.82	8-172/89-FC dated 02.12.1992	• Application for change in land use has been submitted on 19.07.2023 vide application no FP/JH/REDIV/437226/2023 • Currently proposal is pending at DFO for Scrutiny and Recommendation.
2	Piparwar Opencast Project of CCL	43.30	27.47	8-172/89-FC dated 03.01.1995	• Renewal application submitted on 22.07.2019 vide application number FP/JH/MIN/41321/2019 • Proposal is presently pending with CF.
3	Piparwar Project of CCL	28.22	12.38	8-48/98-FC dated 21.09.2001	• Application for change in land use has been submitted on 20.07.2023 vide application number FP/JH/REDIV/437130/2023 • Currently proposal is pending with DFO for reply of EDS by State Secretary.
4	Piparwar Opencast Mining	101.87	85.47	8-54/2003-FC dated 13.01.2004	• Application for change in land use has been submitted on 18.07.2023 vide application number FP/JH/REDIV /437021/2023 • Currently proposal is pending with DFO for reply of EDS by State

SN	Forest Proposal	Area as per FC Obtained (Ha)	Area involved in Piparwar UGP (Ha)	MoEF&CC file no with date of Stage-II FC	Present Status
					Secretary.
Total Area (Notified Forest)		**186.50**	**128.14**		
5	Piparwar Underground (Phase I) - Stage-I FC of **GM JJ** land	-	37.81	-	• Stage-I FC Application submitted vide FP/JH/MIN/44975/2020 Dt. 09.03.2020. • CCL requested ED Nodal, GoJ on 15.04.2024 for exemption of 37.81 GMJJ, broken prior to 12.12.1996 under New FC Act, 2023 as the land is settled well before 12.12.1996 to tenants by state government and used for non-forest purpose • DFO Chatra (S) requested AC Chatra for verification of documents submitted By UA for purpose of exemption under New FC Act, 2023 on 08.05.2024 and again on 03.07.2024.
Grand Total			**165.95**		

Working Details:

1	Mining Method	:	Bord & Pillar with Caving. Development & depillaring will be done with Continuous Miner (CM)
2	UG Mining Area	:	403.56 Ha
3	No of Seams considered	:	Lower Bachra (Bottom Section)
4	Average Grade	:	G-5
5	Life	:	14 Years
6	Coal Evacuation	:	Through Belt Conveyor
7	Man & Material Supply System	:	Free Steered Vehicles & multi utility Vehicles
8	Roof Support	:	With Resin Bolts, Mobile Breaker Line support
9	Coal Linkage	:	It is proposed to use tipping trucks to transport coal from Piparwar UGP to Piparwar siding, which is 900 meters away from the proposed

			project
10	Depth	:	104m to 194m below surface

Proposed Calendar Program:

Year	Coal Production in MTY
1	Construction Period
2	Construction Period
3	0.36
4	0.75
5	0.87
6	0.87
7	0.87
8	0.87
9	0.87
10	0.87
11	0.87
12	0.75
13	0.51
14	0.37
Total	**8.83**

Land Details :

VILLAGE - BENTI											
S.N	Khata No.	Plot No.	Area (Ha)	S.N	Khata No.	Plot No.	Area (Ha)	S.N	Khata No.	Plot No.	Area (Ha)
1	98	2P	2.85	37	60	598	0.43	73	78	636	0.46
2	98	3	0.03	38	60	599	0.53	74	72	637	0.64
3	82	4	0.68	39	81	600	0.06	75	62	638	0.66
4	90	5	0.54	40	81	601	0.36	76	75	639	0.34
5	98	6	0.09	41	98	602	0.05	77	98	640	1.94
6	18	7	0.68	42	60	603	0.02	78	75	641	0.56
7	98	8	0.19	43	60	604	1.3	79	75	642	0.28
8	98	9	15.95	44	60	605	0.37	80	61	643	0.42
9	82	10	0.83	45	98	606	0.51	81	98	644	12.85

10	90	11	0.63	46	41	607P	0.07	82	61	645	0.28
11	83	12	0.48	47	32	610P	0.99	83	17	646	0.47
12	98	13	0.06	48	69	611	0.47	84	98	647	13.65
13	16	14	1.54	49	69	612	0.17	85	42	648	0.28
14	28	15	0.7	50	13	613	0.57	86	61	649	0.77
15	98	16P	12.74	51	69	614	0.05	87	61	650	0.57
16	16	40	1.37	52	69	615	0.3	88	90	651	0.72
17	12	41	0.42	53	63	616	0.54	89	98	652	0.11
18	12	42P	0.1	54	63	617	0.02	90	61	653	0.43
19	41	51P	0.16	55	98	618	0.49	91	42	654	0.98
20	98	52P	19.62	56	41	619	0.25	92	98	655	0.21
21	57	580P	0.04	57	98	620	0.15	93	61	656	0.76
22	98	581	0.02	58	63	621	0.14	94	98	657	0.04
23	57	582	0.13	59	23	622	0.38	95	42	658	0.56
24	98	583	0.25	60	60	623	0.2	96	72	659	0.49
25	14	586P	0.31	61	98	624	1.58	97	98	660	3.28
26	49	587	0.13	62	61	625	0.27	98	98	661	4.86
27	98	588	0.02	63	42	626	0.17	99	75	662	1.03
28	17	589	0.81	64	42	627	0.18	100	75	663	0.08
29	63	590	0.09	65	90	628	0.44	101	79	664	0.16
30	98	591	0.02	66	98	629	0.02	102	90	665	0.26
31	98	592	0.01	67	41	630	0.78	103	17	666	0.47
32	98	593	0.03	68	90	631	0.53	104	90	667	0.39
33	54	594	0.03	69	14	632	0.15	105	98	668	0.03
34	17	595	0.56	70	14	633	0.16	106	61	669	0.25
35	23	596	0.39	71	25	634	0.41	107	61	670	0.01

36	16	597	0.54	72	17	635	0.18	108	61	671	0.01
109	90	672	0.1	149	75	712	1.44	189	42	753	0.42
110	55	673	0.14	150	98	713	0.01	190	43	754	0.9
111	61	674	0.36	151	75	714	0.01	191	78	755	0.19
112	98	675	0.02	152	42	715	0.63	192	75	756	0.67
113	42	676	0.17	153	42	716	0.36	193	42	757	0.55
114	42	677	0.48	154	42	717	0.01	194	84	758	0.29
115	90	678	0.13	155	75	718	1.29	195	72	759	0.34
116	61	679	0.2	156	75	719	0.04	196	78	760	0.28
117	55	680	0.02	157	89	720	0.02	197	98	761	1.3
118	78	681	0.78	158	55	721	0.01	198	25	762	0.76
119	98	682	0.03	159	55	722	0.38	199	80	763	0.32
120	90	683	0.61	160	99	723	0.08	200	78	764	0.12
121	90	684	0.01	161	89	724	0.37	201	51	765	0.12
122	61	685	0.02	162	21	725	0.75	202	98	766	1.56
123	99	686	0.03	163	21	726	0.23	203	79	768	0.81
124	61	687	0.39	164	17	727	0.02	204	21	769	0.75
125	98	688	0.02	165	17	728	0.18	205	42	770	0.77
126	17	689	0.16	166	17	729	0.66	206	25	771	0.47
127	17	690	0.02	167	98	730	0.08	207	51	772	0.37
128	17	691	0.08	168	78	731	1.25	208	50	773	0.75
129	98	692	0.23	169	80	732	0.36	209	43	774	0.55
130	99	693	0.19	170	55	733	0.21	210	25	775	0.56
131	99	694	0.39	171	98	734	0	211	98	776	0.13
132	89	695	0.11	172	98	735	0.08	212	43	777	0.63
133	49	696	0.51	173	89	736	0.54	213	98	778	0

134	54	697	0.5	174	75	737	0.24	214	98	779	0.1
135	92	698	0.47	175	98	738	2.53	215	98	780	0.02
136	98	699	0.06	176	75	739	0.37	216	98	781	0.02
137	69	700	0.3	177	98	740	2.55	217	25	782	0.84
138	98	701	0.59	178	21	741	0.5	218	98	783	0.05
139	75	702	1.02	179	89	742	0.11	219	98	784	0.01
140	98	703	1.36	180	75	743	0.08	220	43	785	0.74
141	89	704	0.07	181	99	744	0.08	221	98	786	0.02
142	75	705	0.27	182	21	745	0.66	222	69	787	0.21
143	84	706	0.06	183	99	746	0.17	223	98	788	0.25
144	98	707	0.76	184	78	747	0.27	224	80	789	0.43
145	72	708	0.1	185	89	748	0.16	225	98	790	2.68
146	89	709	0.12	186	75	749	0.12	226	80	791	0.91
147	98	710	0.01	187	75	750	0.4	227	2	792	0.61
148	60	711	0.42	188	78	752	0.34	228	2	794P	0.22
229	2	795P	0.09	269	21	836	0.21	-	-	-	-
230	2	796	0.32	270	98	837	0.02	-	-	-	-
231	2	797	0.22	271	75	838	0.06	-	-	-	-
232	2	798	0.5	272	75	839	0.15	-	-	-	-
233	98	799	0.01	273	42	840	0.04	-	-	-	-
234	98	800	0.04	274	99	841	0.13	-	-	-	-
235	72	801	0.17	275	84	842	0.12	-	-	-	-
236	79	802	0.42	276	78	843	0.16	-	-	-	-
237	94	803	0.15	277	80	844	0.66	-	-	-	-
238	81	804	0.09	278	75	845	0.19	-	-	-	-
239	21	805	0.17	279	50	846	0.25	-	-	-	-

240	2	806	0.59	280	50	847	0.2	-	-	-	-
241	51	807	0.04	281	50	848	0.17	-	-	-	-
242	98	808	0.09	282	50	849	0.17	-	-	-	-
243	72	809	0.17	283	98	850	0	-	-	-	-
244	98	810	0.04	284	75	851	0.16	-	-	-	-
245	72	811	1.14	285	98	852	0.02	-	-	-	-
246	98	812	0.02	286	98	853	0.11	-	-	-	-
247	98	813	0.09	287	98	854	0.01	-	-	-	-
248	98	814	0.16	288	75	855	0.1	-	-	-	-
249	84	815	0.28	289	75	856	0.02	-	-	-	-
250	78	816	0.18	290	50	857	0.18	-	-	-	-
251	99	817	0.04	291	75	858	0.56	-	-		-
252	42	818	0.42	292	78	859	0.21	-	-	-	-
253	98	819	0.11	293	25	860P	0.23	-	-	-	-
254	98	820	0.31	294	75	865	0.47	-	-	-	-
255	75	821	0.04	295	78	867	0.3	-	-	-	-
256	79	822	0.1	296	60	868	0.83	-	-	-	-
257	98	823	0	297	60	869	0.04	-	-	-	-
258	75	824	0.08	298	89	870P	0.06	-	-	-	-
259	43	825	0.01	299	89	871	0.1	-	-	-	-
260	98	827	0.01	300	23	872	0.3	-	-	-	-
261	98	828	0.01	301	23	876P	0.09	-	-	-	-
262	98	829	0.01	302	99	877	0.83	-	-	-	-
263	98	830	0.01	303	98	887P	10.98	-	-	-	-
264	79	831	0.17	**Total Area in Benti**		**200**	-	-	-	-	-
265	79	832	0.06	-	-	-	-	-	-	-	-

266	79	833	0.06	-	-	-	-	-	-	-	-
267	79	834	0.04	-	-	-	-	-	-	-	-
268	79	835	0.17	-	-	-	-	-	-	-	-

VILLAGE- MANGARDAHA

S.N	Khata no.	Plot No.	Area (Ha)	S.N	Khata no.	Plot No.	Area (Ha)	S.N	Khata no.	Plot No.	Area (Ha)
1	22	4	6.68	38	7	105	0.06	75	11	144	0.67
2	18	5	0.2	39	7	106	0.22	76	3	145	0.22
3	19	7	0.68	40	1	107	0.9	77	15	146	0.19
4	9	8	1.04	41	22	108	0.06	78	22	147	5.16
5	18	9	0.34	42	9	110	0.39	79	8	148	0.04
6	9	10	0.59	43	1	111	1.03	80	22	149	0.48
7	22	12	2	44	22	112	0.26	81	18	150	0.08
8	22	13	20.51	45	1	113	0.21	82	8	151	0.01
9	22	14	20.79	46	13	114	0.53	83	13	152	0.46
10	4	56	0.81	47	6	115	0.64	84	9	153	0.3
11	22	57	8.4	48	7	116	0.08	85	13	154	0.09
12	11	58	0.23	49	22	117	0.3	86	13	155	0.23
13	22	59	0.02	50	9	118	0.38	87	13	156	0.01
14	22	60	0.14	51	11	119	0.54	88	23	157	0.04
15	7	61	1.37	52	22	120	0.05	89	22	158	0.67
16	19	62	0.3	53	21	121	0.02	90	22	159	0.04
17	12	63	0.1	54	19	122	0.16	91	21	160	0.15
18	22	64	0.3	55	22	123	0.06	92	1	161	0.16
19	11	65	0.06	56	4	124	0.06	93	11	162	0.15
20	22	66	0.3	57	4	125	0.01	94	11	163	0.01
21	3	67	0.23	58	11	126	0.01	95	9	164	0.02

22	22	68	1.12	59	14	127	0.1	96	9	165	0.38
23	22	76	0.44	60	4	128	0.31	97	19	166	0.02
24	7	77	0.09	61	6	129	0.06	98	14	167	0.07
25	7	78	0.09	62	22	130	0.06	99	19	168	0.19
26	9	79	0.1	63	4	131	0.08	100	4	169	0.16
27	11	80	0.22	64	5	132	0.2	101	9	170	0.23
28	5	81	0.04	65	5	133	0.03	102	8	171	0.2
29	3	94	0.03	66	1	134	0.48	103	15	172	0.1
30	3	95	0.06	67	1	135	0.13	104	19	173	0.42
31	3	96	0.07	68	22	136	0.37	105	23	174	0.8
32	9	97	0.76	69	14	138	0.06	106	4	175	0.14
33	7	99	0.15	70	9	139	0.65	107	22	176	5.16
34	9	100	0.09	71	8	140	0.02	108	23	177	0.06
35	3	101	0.02	72	8	141	0.24	109	5	178	2.46
36	3	102	0.34	73	22	142	0.53	110	5	179	0.03
37	9	103	0.26	74	1	143	1.24	111	4	180	0.04
112	11	181	0.02	152	18	222	0.01	192	6	262	0.62
113	7	182	0.02	153	16	223	0.11	193	22	263	0.7
114	23	183	0.08	154	16	224	0.01	194	10	264	0.08
115	22	184	0.02	155	8	225	0.17	195	15	265	0.01
116	12	185	0.01	156	8	226	0.03	196	8	266	0.08
117	12	186	0.46	157	10	227	0.02	197	22	267	0.02
118	5	187	0.13	158	10	228	0.17	198	8	268	0.07
119	7	188	0.23	159	6	229	0.01	199	1	269	0.44
120	7	189	0.02	160	6	230	0.69	200	22	270	0.13
121	14	190	0.02	161	6	231	0.02	201	22	271	0.85

122	14	191	0.01	162	23	232	0.04	202	8	272	0.39
123	4	192	0.07	163	3	233	0.15	203	22	273	0.44
124	4	193	0	164	22	234	0.01	204	10	274	0.85
125	23	194	0	165	20	235	0.15	205	22	275P	12.8
126	12	195	0.01	166	2	236	0.01	206	10	276	0.46
127	17	196	0.13	167	2	237	0.13	207	23	277	0.53
128	17	197	0.01	168	1	238	0.1	208	8	278	0.55
129	5	198	0.03	169	18	239	0.11	209	19	279	1.27
130	5	199	0.55	170	20	240	0.17	210	22	280	0.06
131	1	200	0.32	171	2	241	0.19	211	15	282	1.25
132	5	201	0.32	172	12	242	0.25	212	22	283	0.04
133	23	202	0.11	173	4	243	0.02	213	14	287	0.16
134	22	203	0.54	174	4	244	0.12	214	8	288	0.14
135	12	204	0.36	175	1	245	0.13	215	22	289	0.01
136	12	205	0.02	176	22	246	0.02	216	14	318	0.11
137	22	206	0.55	177	3	247	0.02	217	3	321	0.35
138	22	207	2.12	178	3	248	0.03	218	1	322	0.91
139	22	208	0.28	179	1	249	0.4	219	22	323	0.33
140	10	209	0.03	180	22	250	0.04	220	4	324	0.13
141	10	210	0.26	181	20	251	0.01	221	4	325	0.15
142	10	211	0.1	182	18	252	0.12	222	1	326	0.15
143	8	212	0.38	183	18	253	0.01	223	3	327	0.19
144	23	213	0.11	184	19	254	0.19	224	4	328	0.18
145	1	214	0.8	185	16	255	0.02	225	3	329	0.3
146	3	215	0.01	186	16	256	0.15	226	22	330	0.22
147	10	216	0.11	187	8	257	0.28	227	1	331	0.34

148	3	217	0.19	188	10	258	0.28	228	5	332	0.2
149	6	219	0.54	189	15	259	0.01	229	5	333	0.34
150	23	220	0.24	190	15	260	0.38	230	10	334	0.16
151	18	221	0.13	191	9	261	0.21	231	1	335	1.1
232	13	336	0.2	271	9	342P	1.73	-	-	-	-
233	22	338	0.03	272	14	355P	0.2	-	-	-	-
234	9	339	0.94	273	11	356P	0.69	-	-	-	-
235	20	340	0.76	274	3	360P	1.09	-	-	-	-
236	10	343	0.1	275	6	370P	1.59	-	-	-	-
237	22	344	0.22	276	19	371P	0.93	-	-	-	-
238	6	345	0.56	277	6	372P	1.26	-	-	-	-
239	7	346	0.11	278	11	6P	0.81	-	-	-	-
240	7	347	0.25	**Total Area in Mangardaha**		**168.64**		-	-	-	-
241	9	348	0.57	-	-	-	-	-	-	-	
242	11	349	0.48	-	-	-	-	-	-	-	-
243	12	350	0.09	-	-	-	-	-	-	-	-
244	11	351	0.15	-	-	-	-	-	-	-	-
245	6	352	0.97	-	-	-	-	-	-	-	-
246	6	353	0.57	-	-	-	-	-	-	-	-
247	22	354	0.76	-	-	-	-	-	-	-	-
248	1	361	0.37	-	-	-	-	-	-	-	-
249	20	362	0.37	-	-	-	-	-	-	-	-
250	18	363	0.16	-	-	-	-	-	-	-	-
251	5	364	0.59	-	-	-	-	-	-	-	-
252	19	365	0.13	-	-	-	-	-	-	-	-
253	23	366	0.65	-	-	-	-	-	-	-	-

254	18	367	0.16	-	-	-	-	-	-	-	-
255	22	368	0.14	-	-	-	-	-	-	-	-
256	20	369	0.16	-	-	-	-	-	-	-	-
257	20	373	0.16	-	-	-	-	-	-	-	-
258	19	374	0.13	-	-	-	-	-	-	-	-
259	22	375	2.42	-	-	-	-	-	-	-	-
260	22	376	0.29	-	-	-	-	-	-	-	-
261	1	377	0.6	-	-	-	-	-	-	-	-
262	22	281P	1.12	-	-	-	-	-	-	-	-
263	4	284P	0.98	-	-	-	-	-	-	-	-
264	20	285P	0.21	-	-	-	-	-	-	-	-
265	15	286P	0.12	-	-	-	-	-	-	-	-
266	7	312P	0.97	-	-	-	-	-	-	-	-
267	22	313P	0.06	-	-	-	-	-	-	-	-
268	11	314P	0.31	-	-	-	-	-	-	-	-
269	5	337P	2.58	-	-	-	-	-	-	-	-
270	3	341P	0.32	-	-	-	-	-	-	-	-

VILLAGE- KITCHTO

S.N	Khata no.	Plot No.	Area (Ha)	S.N	Khata no.	Plot No.	Area (Ha)	S.N	Khata no.	Plot No.	Area (Ha)
1	8	616	0.55	5	12	619	0.56	9	16	623	0.27
2	16	613	1.5	6	39	620	0.44	10	15	624P	0.53
3	16	617	0.21	7	16	621	0.12	11	7	625P	0.6
4	14	618	0.57	8	12	622	0.98	12	15	626P	0.2
Total Area in Kitchto							**6.53**				

VILLAGE- THENA											
S.N	Khata no.	Plot No.	Area (Ha)	-	-	-	-	-	-	-	-
1	19	154P	0.22	4	13	158	0.04	6	13	160	0.04
2	10	155P	0.16	5	10	159	0.06	7	10	161P	0.52
3	13	156P	0.1	**Total Area in Thena**				**1.14**			

VILLAGE - BIJAIN											
S.N	Khata no.	Plot No.	Area (Ha)	S.N	Khata no.	Plot No.	Area (Ha)	S.N	Khata no.	Plot No.	Area (Ha)
1	16	140	0.01	8	8	168	0.01	15	18	176	0.1
2	5	141	0.08	9	23	169	0.22	16	2	177	0.08
3	17	146	0.24	10	8	170	0.15	17	6	185	0.23
4	23	148	0.08	11	13	172	0.23	18	12	186	0.07
5	2	164	0.12	12	13	173	0.01	19	21	187	0.11
6	2	166	1.39	13	7	174	0.12	20	15	188	0.02
7	8	167	0.1	14	7	175	0.01	21	15	189	0.24
22	9	190	0.11	62	4	246	0.59	102	6	322	0.04
23	2	191	0.08	63	2	247	0.17	103	23	323	0.01
24	8	192	0.03	64	7	249	0.17	104	12	324	0.02
25	2	193	0.14	65	3	250	0.23	105	13	325	0.16
26	2	194	0.12	66	1	268	5.46	106	13	326	0.05
27	7	195	0.13	67	16	271	0.14	107	17	327	0.28
28	2	196	0.21	68	1	278P	6.68	108	10	328	0.25
29	2	197	0.26	69	4	288	0.98	109	2	329	0.13
30	15	199	0.23	70	1	289P	15.17	110	2	330	0.98
31	6	200	0.08	71	1	290	10.82	111	17	331	0.13
32	12	201	0.01	72	22	291	0.27	112	9	332	0.4

33	6	202	0.07	73	13	292	1.62	113	1	333	0.48
34	9	207	0.24	74	8	293	0.81	114	9	334	0.13
35	24	209	0.02	75	1	295	0.52	115	5	336	0.06
36	8	211	0.36	76	5	296	0.12	116	2	163P	0.14
37	8	212	0.09	77	5	297	0.6	117	2	165P	0.73
38	15	213	0.22	78	11	298	0.11	118	2	178P	0.53
39	24	214	0.01	79	11	299	0.13	119	6	203P	0.08
40	22	215	0.32	80	5	300	0.07	120	2	208P	0.95
41	8	216	0.25	81	11	301	0.01	121	23	210P	0.04
42	15	217	0.54	82	5	302	0.06	122	2	225P	0.27
43	6	218	0.33	83	9	303	0.01	123	2	226P	0.2
44	2	219	0.36	84	15	304	0.08	124	6	229P	0.4
45	5	220	0.11	85	23	305	0.01	125	2	230P	0.31
46	9	221	0.07	86	5	306	0.23	126	13	231P	0.26
47	11	222	0.04	87	23	307	0.03	127	15	267P	0.78
48	11	223	0.04	88	9	308	0.58	128	6	269P	0.71
49	2	224	0.2	89	1	309	0.25	129	2	270P	0.5
50	2	227	0.3	90	1	310	0.88	130	2	272P	2.51
51	2	228	0.44	91	15	311	0.16	131	1	279P	9.61
52	2	232	0.11	92	6	312	0.25	132	1	284P	2.44
53	7	233	0.12	93	10	313	0.51	133	2	285P	0.37
54	18	234	0.02	94	22	314	0.34	134	4	286P	0.85
55	2	237	0.13	95	8	315	0.28	135	1	294P	3.64
56	8	239	0.19	96	18	316	0.2	**Total Area in Bijain**		**88.38**	
57	2	240	0.11	97	13	317	0.47	-	-	-	-
58	2	241	0.1	98	15	318	0.29	-	-	-	-

59	6	242	0.03	99	12	319	0.14	-	-	-	-
60	2	243	0.06	100	13	320	0.14	-	-	-	-
61	7	245	0.3	101	22	321	0.21	-	-	-	-

Land Acquisition:

Project area of 464.69 Ha, on which mining plan/Abridged PR has been prepared and approved by Board of Director of CCL, and for which ToR has been issued by MoEF&CC, is part of 1416.38 Ha land acquired as per Notification of MoC as per Section 11 of CBA Act 1957 vide 19/87/82-CL dated 10.03.1983.

SL	Notification under Section 11 of CBA Act	Date	Area in Ha.
1	No. 19/87/82 - CL	10.03.1983	1416.38
Total Area in Ha			**1416.38**

Land Type Breakup:

SL	Pattern	Area (in Ha)
1	Notified Forest Land	128.14
2	GM JJ Land	37.81
3	GMK Land	108.32
4	GMA Land	4.63
5	Tenancy Land	185.79
	TOTAL	**464.69**

Pre-Mining Land Use:

SN	Land Use	Area in Ha	Remarks
1	Forest land	165.95	The present land use of this forest land: involves 73.69 Ha. of vegetated land, 80.84 Ha as backfilled mine quarry, roads and dump, 11.42 Ha. as mine void filled with water.
2	Plantation Area	118.32	This include natural vegetation and vegetation on biologically reclaimed area falling within the non-forest land
3	Mining Area	146	This include backfilled area and quarry falling within the non-forest land
4	Settlement	4	

5	Water filled mine void	21.42	This include water logged area falling within the non-forest area
6	Waste Land	9	This include surface roads, parking areas etc. falling within the non-forest area
Total Project Area		**464.69**	

Land Use During Mining:

SL	Pattern	Proposed Area (Ha)
1	UG Mining Area-As the proposed working is underground means, surface shall not be disturbed.	403.56
2	Water Reservoir- Existing mine void of exhausted Piparwar OCP will be converted into water reservoir to store the UG mine discharge	26.13
3	Infrastructure- Surface infra including mouth incline, surface bunker, W/S, S/S, store, rest shelter etc on the surface of void of exhausted Piparwar OCP.	30.00
4	Greenbelt	5.00
	TOTAL	**464.69**

Provision of Final Mine Closure of Piparwar OCP:

1. Final Mine closure Plan of Piparwar OCP has been prepared as per the latest mine closure guidelines.
2. This project has been implementing several mine closure activities including technical and biological reclamation of mined out land, environmental monitoring, development of Kayakalp vatika etc.
3. As per the audit reports submitted by CMPDI Ranchi and NEERI Nagpur, around 90.10 Crs was spent by the project on various mine closure activities

Energy Conservation:

1. Solar Power Plant (20 MW) has been constructed at a cost of 142.95 Crores in Piparwar Area. Further additional 10 MW Solar Power Plant is proposed.
2. Further, a floating cum ground mounted Solar (Capacity: 7 MW Floating & 3 MW Ground Mounted) is proposed in the Quarry-I void of Piparwar OCP.
3. For decreasing the maximum demand of the project power factor of 0.98 will be maintained using automatic power factor correction Capacitor banks.
4. Energy efficient LED luminaires has been proposed for all types of illuminations.
5. Energy efficient motors have been proposed as energy conservation measures.

6. Periodical maintenance of equipment's, energy audits, optimization of distribution networks Promoting use of renewables and energy efficient appliances in Project and nearby villages.

Subsidence Study & Subsidence Management Plan:

1. The subsidence prediction model, based on the Influence Function method developed by CMPDI, was used to estimate subsidence in the proposed mining area where caving methods will be applied.
2. The disturbed rock mass, caused by previous opencast mining, was considered in the predictions.
3. Predictions were made for the 5th, 10th, and 14th years (end of mine life), with maximum subsidence of 1.940m over panel N1 in the first two stages, and 2.06m over panel N5 by the end of the mine life.
4. Maximum strain and slope values are projected to be 12.13mm/m & 23.10mm/m initially, rising to 18.33mm/m & 34.92mm/m at the end. Further, it is unlikely to cause the any major topographical change.
5. Surface cracks caused by subsidence should be regularly filled with clay and stone chips, followed by a clay heap to restore the original drainage pattern, enhance soil water retention, reduce erosion, and prevent underground inundation and spontaneous heating.
6. Afforestation and forest cover enhancement should be undertaken to address any environmental losses.
7. Water accumulation in subsidence-induced depressions can benefit vegetation and should be retained when safe or drained otherwise.
8. Surface drains must be constructed outside subsidence areas to prevent water from entering active zones.
9. To protect key surface features, coal pillars should remain unextracted within the subsidence influence zone.
10. A dedicated team will be established by the mine management to monitor and manage crack filling, ensuring materials are readily available.

STATUTORY CLEARANCES :

1	LOI/Lease docs	:	The land has been acquired under the Section 11 of CBA Act 1957 vide 19/87/82-CL dated 10.03.1983.
2	CO	:	The CO, Tandwa (Chatra) vide letter dated 16.05.2024 has mentioned that some plots of the Mouza : Kichto, Bijain, Benti, Mangardaha & Thena are recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II bearing total area 37.81 Ha for which diversion application of Forest land has been submitted vide proposal no. FP/JH/MIN/44975/2020.
3	DFO Wild Life	:	DFO, Wildlife Division, Hazaribagh vide letter no. 2841, dated 07.12.2023 certified that the said project is outside Eco Sensitive Zone of Lawalong Wildlife Sanctuary.

4	DFO Forest Distance	:	DFO, Chatra South Forest Division vide letter no. 1065, dated 22.05.2024 certified that the distance of forest land is **0 (Zeor) meters.**
5	Approval of Abridged Project Report	:	Abridged Project Report approved by Compancy Secretary, Central Coalfields Ltd. vide Ref No.: - CS/BM/507/2021/303, Dated: - 18.10.2021.
6	CGWA	:	NOC for Ground Water Abstraction vide NOC no. CGWA/NOC / MIN/ORIG /2024/19856, dated 05.02.2024 valid up to 04.02.2026.
7	Previous ToR	:	Previous ToR was granted by MoEF&CC, Govt. of India vide No: IA-J-11015/10/2010-IA-II(M) Dated: 08.06.2020.
8	Public Hearing	:	Conducted on 25.08.2023
9	Baseline Data Period	:	i. Baseline data period in the draft EIA October to December, 2020 (Post Monsoon). ii. Revalidation of baseline data done during the period 01.01.2024 to 31.03.2024

Cumulative Impact assessment of study area:

1. Cumulative Impact assessment of study area (10km buffer) w.r.t all environmental parameters has been carried out by incorporating all existing and proposed industrial activities falling within the study area and the impact is minimal due to change in mining process.
2. Impact on ambient air quality has been assessed by carrying out cumulative impact of all industries present in the 10 km buffer zone using AERMOD software, and the results suggest that the predicted ambient air quality is well within the prescribed norms.
3. Impact on ground water regime has been assessed as per GEC 2015 norms, Stage of Groundwater Extraction (SGE) of the buffer area is 23.00% which is within safe category.
4. Furthermore, the impact on flora fauna and socio-economic regimes has been done for the 10 km buffer zone of the project.
5. As the proposed mine is an underground mine within the worked-out area of Piparwar OCP, the impact on major environmental parameters viz. air, water, land, socio and flora-fauna would be minimal.

Wildlife Management Plan and Budgetary Provision:

06 nos. of Schedule-I faunal species have been observed in the buffer zone of the study area. Conservation Plan for the same has been prepared and submitted to DFO, Chatra (South) vide letter no. PO(Ashok)-Conservation Plan /DFO, Chatra/2024-25/374, dated 22.08.2024 (Budget 83.04 Lakh).

Impact of mining on Hydrology:

1. A detailed Hydrogeological study as per GEC 2015 has been carried out to estimate the impact of proposed mining activity on hydrological regime.
2. As per the study, the radius of Influence (RoI) is estimated as 360 m, and the stage of ground water extraction of the study area has been estimated as 23.00 %, which falls into safe category as per the CGWA guidelines.
3. In addition to this, this project being an underground mine, and it won't affect the surface water regime
4. No Objection Certificate (NoC) from CGWA has been obtained vide letter no: CGWA/NOC/MIN/ORIG/2024/19856 Dt. 05/02/2024, valid upto 04.02.2026 for an extraction rate of 560.00 m3/day

Total EIA/EMP Expenditure:

A. Capital Cost of Environmental Control Measures

A. Air Pollution Control Measures		
S.No	Pollution Control Measure	Estimated Capital Cost (Rs. Lakhs)
1	PCC/Black topping of Coal transportation Haul road from Mine to Piparwar siding of Length 900m	100
2	Fixed mist type sprinkling system along coal transportation road for dust suppression	50
3	2 no. of Fixed Fog canons for Dust Supression at Stock Yard	15
4	Permanent wind screen to be provided all along the boundary of stock yard	50
5	1 no. of movable Fog canons for Dust Supression at Rly Siding	40
6	1 no. of Fixed Fog canons for Dust Supression at Rly siding	7.5
7	Permanent wind screen to be provided all along the boundary of Railway Siding	50
Sub Total (A)		312.5
B. Water Pollution Control Measures		
1	3 no. of Sumps (2 UG and 1 Surface) have been proposed for proper handling, treatment and disposal of mine seepage water	38.5
2	Strengthening of embankment against Mangradaha Nala flowing along northern boundary of the project	50
3	Construction of garland drain along with intermittent Settling ponds	50

	all along the mine boundary and infrastructure (Approx. 5 km)	
4	Rainwater Harvesting on all industrial buildings like Workshop, PO Office, SS etc.	30
5	Sewage treatment plant (40 kLD)	25
6	Drinking water facility at colony	12
7	Mine effluent treatment facility at Project	35
Sub Total (B)		240.5
C. Land Reclamation		
1	Green belt development/ plantation at Industrial Site	200
2	Biological reclamation/ gap plantation of Surface of UG Mine including subsided area	400
3	Conservation Plan of Schedule-I species	83.04
Sub Total (C)		683.04
Protection Plan for Safeguarding River Damodar (D)		**744.45**
Grand Total (A)+(B)+(C)+(D) in Rs. Lakhs		**2050.49**

Proposed Protection Measures to Safeguard the River Damodar

Sn	Activity	Cost Rs. Lakh	Timeline of Completion	Remarks
1	Plantation Plan within the catchment and along the River Damodar (Approx. 40 Ha.) including 3 year maintenance through state forest Dept.	160	• 25.54 Ha. Taken up in Monsoon 2024. (101.32 Lakhs). • 5 Ha. Per year in coming 3 years (monsoon 25, 26 & 27)	WO issued for FY 2024-25 for 105.91 Lakhs
2	Integrated Sewage treatment plant for Basant Vihar Colony, 1 BR Colony and MQ 48 Colony	523.95	Dec-24	WO Issued vide letter no: CCL/HQ(Civ)/HOD/2023-24/347 dt. 29.11.2023
3	Restoration of ponds in nearby villages (Benti, Kichto, Kalyanpur, Mangahrdaha etc.)	17	Will be taken up in FY 24-25 & 25-26	

4	Vertical greenery system along the high level bridge 300 m X 5 m (with profile sheet on upwind side and vertical greenery system on DW side)	43.5	Will be Completed by Dec 2025	
Total (in Rs. Lakh)		**744.45**		

B. Revenue Cost of Environmental Control Measures:

S.No	Particulars	Annual Revenue Cost (Rs Lakh)
1	Environmental Monitoring Cost	108.02
2	Plantation Maintenance Cost	10
3	Dust Suppression	50
4	Maintenance cost for ETP and STP	10
5	Maintenance of RWH, Catch drains, Storm water drains and other development measures in Township	10
6	Miscellaneous Cost including subsidence management	30
Total Cost		218.02

C. Action Plan for Public Hearing:

SN.	Additional Measures Proposed for Compliance of PH	Tentative Cost in Rs. Cr	Timeline of Completion
1	Planting fruit bearing saplings in schools, health centres, panchayat bhawans, administrative offices etc. @ 15 locations. Additionally, PP will oversee the maintenance of the plantations for four years thereafter.	0.07	1st year
2	Distribution of fruit bearing saplings will to the nearby village 2000 saplings/ year for 3 years	0.07	3 Years
3	Skill development training for PAFs in various agricultural practices viz. organic farming, mushroom farming, poultry, pisciculture etc. for 100 PAPs each year for next 3 years.	1.05	3 Years

SN.	Additional Measures Proposed for Compliance of PH	Tentative Cost in Rs. Cr	Timeline of Completion
4	Wind Barrier all along the road adjacent to Mangardaha village @ 600m X 8 m height	0.75	1st year
5	02 Nos. Mobile Fog Cannon and dust extraction from road in adjacent villages Bahera, Kichto and Benti for 3 years	1.21	3 Years
6	Additional Health Camps proposed (bi annually) for the villages Benti, Kalyanpur, Kichto/Mangardaha and Bahera for 3 years (Health Consultation including checkups, pathological tests and basic medicines Distribution)	0.15	3 Years
7	One additional Ambulance service for adjacent villages for 3 years	0.30	3 Years
8	Repair and maintenance of roads in Benti Village	0.40	1st year
9	Repair of Existing building at DAV Public School Kalyanpur under CSR Scheme of Piparwar Area	1.03	As per the Work order issued
10	R&R (No R&R involved in this project)	0	Not Applicable
	Minimum Total Cost to be spent in PH Compliance	**5.03 Crore**	

D. Provision for Wildlife Management Plan:

Sl. No.	Component	Unit Cost (in Rs.)	Units	Provision in Lakhs
1 Habitat Improvement for Wildlife				
a	Creation of Grasslands for herbivore species in the forest area within the buffer zone at different places.	Rs 0.50 lakh/Ha.	4 Ha	2.00
b	Augmentation of degraded areas by planting mixed native species, Silvi-Cultural operation, Weed Removal (Assisted Natural Regeneration)	Rs 0.25 lakh/Ha.	5 Ha	1.25
c	Soil and moisture conservation by Contour trenching, gully plugging at suitable locations within the forest.	Rs 0.25 lakh/Ha.	5 Ha	1.25
d	Development of waterholes, water troughs, and mini check dams for providing drinking water	Rs 1 lakh/Ha.	5 Ha	5.00

	facility for animals			
2 Providing Safety and Protection Measures for Wildlife				
a	Creation of fire lines and maintenance	Rs 4200/km	20 KM	0.84
b	Procurement of Leaf blowers and Firefighting Equipment	60000/ unit	2	1.20
c	Construction of watchtower for surveillance of fire and biotic interference in the forest area	Rs 6 lakh/ Tower	2	12.00
3 Capacity Building & Awareness Programme				
a	Technical training to the Frontline Staff regarding rescue and rehabilitation of wild animals	Rs 0.5 lakh/ training	5	2.50
b	Distribution of pamphlets and brochures related to wild animals for local communities	Lumpsum	-	1.00
4 Research and Wildlife monitoring				
a	Purchase of Camera Trap for wildlife study	20,000/ unit	10	2.00
b	Appointment of Researcher and Field assistant for 2 years	50,000/ month	2	24.00
5 Machinery And Equipment for Mitigating Human-Wildlife Conflicts				
a	Mobile animal rescue unit for wild animals trapped in the villages and shifting the injured animals	15 lakhs/ unit	1	15.00
b	Development of veterinary Facilities for wildlife	10 lakhs/ unit	1	10.00
c	Other Miscellaneous Funds	Lumpsum	-	5.00
Total (in Rs. Lakh)			**83.04**	

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meeting held on 30.09.2024, the Committee observed that the out of the total Forest Land required for the project, Stage-II FC for 128.14 Ha was earlier issued for Piparwar Opencast Project, which is under process of change in land-use for the underground mining and fresh proposal of 37.81 Ha of GM JJ land is under process of diversion, which was broken prior to 12.12.1996.

Accordingly, any production through underground mining can commence only after diversion of entire forest land falling within the project area is approved.

E. Considering the request submitted by Project Proponent Dated: 30.09.2024 and thorough study of the project parameters, SEAC accordingly considered this project for issuance of EC for Piparwar UG (Phase-I) (Capacity: 0.87 MTPA Area: 464.69 Ha) for development activities only in Non-Forest Land as mentioned below:

Activity	Plot & Khata Number	Length/Parameters
Drivage of inclines 1	Plot Number 14 (Area: 13.16 Ha Non-Forest Land) in Mangardaha Village	202.00 meter
Drivage of inclines 2		277.00 meter
Drivage of inclines 3		283.00 meter
Establishment of substation etc	Plot Number 8 (Area: 1.04 Ha),9(Area: 0.34 Ha) ,10 (Area: 0.59 Ha) in Mangardaha Village & Plot Number 3 (Area: 0.03 Ha) and 6 (Area: 0.09 Ha) in Village Benti All these being non-forest area.	Necessary Infrastructure for Developmental activities.

Based on the presentation made, information provided and considering the request submitted by Project Proponent dated: 30.09.2024 SEAC accordingly recommends for issuance of EC for Piparwar UG (Phase-I) (Capacity: 0.87 MTPA Area: 464.69 Ha) for development activities only in Non-Forest Land as detail above. **The various specific conditions for grant of EC for development activities in non forest area are as follows :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*Ek Ped Ma Ke Naam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in).

II. This EC will be valid only for development activities in non forest area as detailed in **section "E"** above.

III. Project Proponent will seek amendment in Environment Clearance after obtaining diversion of Forest Land under the Forest (Conservation) Act, 1980/VAN (SANRAKSHAN EVAM SAMVARDHAN) Adhiniyam, 1980

IV. Project proponent will commence production from Underground mine only after obtaining diversion of Forest Land under the Forest (Conservation) Act, 1980/VAN (SANRAKSHAN EVAM SAMVARDHAN) Adhiniyam, 1980 and only after obtaining amendment in Environment Clearance from SEIAA / SEAC.

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6. **Kabribad Opencast Coal Mine Project of M/s Central Coalfields Limited at Village : Kabribad, Chunjka, Patrodih, Khandih, Chilga, Tehsil : Giridih, Distt. : Giridih, Jharkhand (90.84 Ha) Modification in Specific condition no. (ii) of EC regarding.**

(Proposal no.: SIA/JH/CMIN/ 497562/2024)

The Project Authorities have requested for modification in Specific condition no. (ii) of EC letter no. EC/SEIAA/2022-23/2656/2022/365, dated 30.01.2023 which is as follows:

"The project Authorities will be mining activity on the Jungle Jhari land i.e. 27.37 Ha only after obtaining approval under the Forest (Conservation) Act, 1980 for which they have submitted the application vide proposal no. FP/JH/MIN/414009/2023, dated : 10.01.2023. The project Authorities will have to submit the state – 1 Forest Clearance within a period of 18 month from the date of grant of Environmental Clearance as per the Office Memorandum F.No. – J-11013/12/2013-IA-II(I) (Part), dated : 19.06.2014. In case the Forest Diversion Clearance is obtaining after a period of 18 month from the date of Issue of EC the proposal will be referred to SEAC for having a re-look on the Environment Merits of project and the site."

The reason for request of modification of the above condition is as below:

"Project Proponent submitted that as per the new VAN (SANRAKSHAN EVAM SAMVARDHAN) RULES, 2023, Chapter 1, Page 32, Section 1.3 Part (i), it references the Supreme Court order dated May 7, 1985, in the case of State of Bihar vs. Banshi Ram Modi & Ors: "We are, therefore, of the view that while before granting permission to start mining operations in a virgin area, Section 2 of the Act must be complied with, it is not necessary to seek prior approval of the Central Government for mining operations in a forest area that was broken up or cleared before the commencement of the Act." Further, a letter (No. 3401, dated 24.09.2022) from the DFO, Giridih East Division, also confirms that the 27.37 Ha of GMJJ land had been broken prior to 1980.

Therefore, PP has requested that the said land of 27.37 Ha does not come under the purview of Forest (Conservation) Act, 1980, as Section 2(ii) of the Act does not apply to areas already cleared before its enactment. This position is also supported by the Supreme Court's decision in the case of State of Bihar vs. Banshi Ram Modi & Ors (1985), which ruled that prior approval from the Central Government is not required for mining operations in areas broken before the commencement of the Act, as deliberated above."

The SEAC is of the view that a certificate from DFO, Giridih East Division is required mentioning that Forest (Conservation) Act, 1980/VAN (SANRAKSHAN EVAM SAMVARDHAN) Adhiniyam, 1980 is not applicable for this project in respect of the plots which belong to the Jungal - Jhari category.

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7. **Chalkari Sand Ghat in the River bed of Damodar River of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Chalkari, Jhujko & Phusro, Circle : Peterwar, Distt. : Bokaro, Jharkhand (8.22 Ha).**

(Proposal No : SIA/JH/MIN/ 498357/2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 30.09.2024.

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:59,946.00 Cum. / annum or 104306.88TPA (dry basis).

Project and Location Details:

Sl. no.	Parameter	Details	
1	Project Name	Chalkari Sand Ghat in the River bed of Damodar River	
2	Lessee:	M/s Jharkhand State Mineral Development Corporation Ltd. (A Government of Jharkhand Undertaking)	
3	Lessee Address	Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand)	
4	Lease Area	8.22 Ha.	Acres – 20.31 Acres
5	Type of Land	Non-Forest Government waste Land (River Bed)	
6	Project Cost	Capital Cost – Rs 12.78 Lakhs	Recurring : 22.3 Lakhs / Year
7	EMP Budget	Capital Cost: Rs 2.148 Lakhs	Recurring: 3.014 lakhs / year
8	New or Expansion	New	
9	Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity	59,946m^3 (dry basis)	Tonnes: -104306.88tonnes(dry basis)
10	Mine Life/ Lease Period	Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.	
11	Man power	49	
12	Water Requirement	2.431 KLD Drinking & Domestic: 0.885 KLD	

		Dust Suppression: 0.472 KLD Green Belt Development : 1.074 KLD
13	Water Source	By authorised hired tankers
14	DG Set / power	NA
15	Crusher	NA
16	Nearest Water Body	On Damodar River bed sand mining is proposed.
17	Nearest Habitation	Chalkari – 0.6 km. – NW direction
18	Nearest Rail Station	The nearest Railway station Amlo is located at a distance of about 2.17 Km in NE direction.
19	Nearest Air Port	Birsa Munda Airport, Ranchi is situated at a distance of about 81.28 Km in SW direction.
20	Nearest Forest	More than 250 m, as per Forest Division. vide Letter no.- 654 Dated - 10/03/2023
21	Road & Highways	Village road – 0.864 Km in W direction. Jarangdih road – 2.1 Km in N direction after the village road.

LAND DETAILS

Khata no.	Plot no.
225	938

CO-ORDINATES

Point	Latitude	Longitude
A	23° 45'09.573" N	85° 58' 01.262" E
B	23° 45'10.685" N	85° 58' 05.872" E
C	23° 45'05.435" N	85° 58' 06.799" E
D	23° 45'00.396" N	85° 58' 08.400" E
E	23° 44'53.825" N	85° 58' 15.137" E
F	23° 44'51.276" N	85° 58' 10.943" E
G	23° 44'58.606" N	85° 58' 04.982" E
H	23° 45'03.648" N	85° 58' 01.883" E

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Auction letter has been issued by Joint Secretary, Mines & Geology Deptt., Govt. of Jharkhand vide letter no. Kha.ni.-(Vividh)-117/2017-2090/M, dated 30.09.2022.

			According to provisions in Jharkhand State sand Mining Policy and its amendment. JSMDC Ltd. has been nominated as nodal agency for operating sand mines in category II.
2	CO	:	The CO, Peterwar vide letter no. 15, dated 09.01.2023 has certified that the plot no. of the project is recorded as "Nadi" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Bokaro vide letter no. 1419/Khanan, dated 26.09.2024 certified that no other balughat exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 883, dated 17.05.2024 with reference to letter no. 743 dated 25.04.2024 from the DC, Bokaro has certified that the proposed project site is outside Eco Sensitive Zone of Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Bokaro Forest Division vide letter no. 654, dated 10.03.2023 certified that the distance of notified forest is 640 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Bokaro District (Sl. no. 02, Page no. 70).
7	Gram Sabha	:	Gram Sabha conducted on 10.06.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Bokaro vide Memo No. 1379/M, dated 18.09.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay has confirmed vide letter dated 30.09.2024 that the mine plan has been prepared by him.

Working Details

1	Mining Method	Opencast Manual Method	
2	Quarry Area	8.22 Ha.	Mine life/Lease Period - Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining
3	Waste Generation	00 cum	
4	Stripping Ratio	NA	
5	Working Days	200 per year	
6	Grid excavation	25x 25(meter)^2	
7	Elevation of Mine	146.9m AMSL (Pre-Monsoon) &147.5m AMSL (Post-Monsoon)	

8	Ground Level Elevation	149 M AMSL
9	Ultimate Working Depth	1.5 m
10	Water Table	140.9 m
11	Topography of Mine	Flat
12	Explosive Requirement	No. blasting required
13	Diesel/Fuel requirement	Not required for mining.

Production Details

Year	Production of Sand (cum)	Production of Sand(tonnes)
1st	59,946m³	104306.88

The development plan submitted along with the mining plan relates to mining operation during the first year.

Land Use (Plan period)

Sl. No.	Pattern of Utilization	Land Use (in Ha.)	Remarks
1	Mining Activities	3.99	Area may vary based on flow of water in the subsequent year.
2	Loss due to Active channel	4.23	▪ Distance from the bank should be 1/4th of River width and should not be less than 7.5 meters. ▪ Mining shall be restricted within the central 3/4thwidth of the river/rivulet or 7.5 meters (inward) from River-bank but up to 10% of the width of the River. ▪ Mining shall be restricted 60 % area for both side of river edge.
Total		8.22	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Along River Edge	118 m	78

2	Along Approach Road	602m	202

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

EMP Budget

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. @ Rs. 1000 per Tanker	-	2,00,000
2	Plantation (@Rs.600 per plant) 358 X 600 = 2,14,800 (Includes Fertilizer, Pesticides, Maintenance)	2,14,800	21,480
3	Environmental Monitoring (One Day Monitoring) Ambient Air 24 hrs - Rs. 26,000 Surface Water - Rs. 6,000 Noise 24 hrs - Rs. 8,000 **Total - Rs. 40,000** **(Per Season)** **At least two season in a Year - Rs. 40,000 x 2** **= Rs. 80,000**	--	80,000
Total		**2,14,800**	**3,01,480**

Environment Monitoring Programme

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	3 Monthly
2.	Surface Water	3 stations	3 Monthly
3.	Noise	3 stations	3 Monthly

Solid Waste Management

No solid waste is generated during the course of mining.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Sewage from rest shelter would be treated in Septic Tank soak pit.
- There is no other source for generation or discharge of trade effluent.

Air Quality Management

Sand will be mined manually. No mining equipment would be needed. However, diesel operated tippers/tractors would be used for transportation of sand from mine to stockyard.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all transport vehicles would be repaired & maintained regularly.

Loading of Product on tippers – Water will be sprinkled on blasted Sand mass before they are loaded to trucks for transport.

Movement of tippers on Road – Movement of tippers on road generate dust. For mitigation of this pollution following measures will be taken

- Regular water sprinkling on Approachroad by using water tankers.
- Regular repair of Approach road
- All Trucks carrying Sand outside lease area will have PUC certificate.
- Transport tippers/traders moving on public road will be covered with tarpaulin.

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DICUSSED BELOW:

Road accidents

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

- Ensure speed limit for the haulage vehicle for 40 KMPH.
- Regular maintenance of haulage road
- Appropriate navigational signs informing sensitive area like school and habitation
- Regular maintenance of the vehicles.

Dust generation

No drilling involved

- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

Noise Generation

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 – 90 (A) measured at distance of 3m from the source.

Preventive measures

- Transportation activities would be confined during day time only.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise.

- Regular repair and maintenance of tippers/tractors.
- Plantation on both sides of haulage road.
- Tippers having PUC certified will be allowed to be used for sand transportation.

Health Hazards

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

Preventive Measures

Following mitigation measures would be taken to minimize this impact on health

- Regular water sprinkling on haulage roads
- Tree plantation on both sides of haulage road
- Tippers / Tractors carrying sand would be covered
- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

Accident at Site

This is a project with only source of accident at site would be movement of tippers /tractors within mine site for transportation of sand.

Preventive measures

Following mitigation measures would be taken to minimise risk of road accident-

- Separate alignment for movement of loaded vehicles coming out of mine site
- Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
- Regular maintenance and repair of haulage vehicles employed for sand transportation
- No overtaking of transportation vehicles within mine site
- Proper maintenance of haulage roads

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.

- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.

b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.

c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard .

d. The Boundary Pillars of the proposed mine lease area will be maintained properly.

e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.

f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.

g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.

h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.

i. If any tree felling than necessary permission shall be taken from the competent authority.

j. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

k. Mining will be restricted upto 3 meter.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 27, 28, 29, 30.09.2024 & 01.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure 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 MeriLiFE Portal (https://merilife.nic.in).
II. Transportation from the river bed will be done using the existing road.
III. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
IV. Wet sand will not be transported.
V. Pre-monsoon data of current year is to be included in final EIA report.
VI. Satellite imagery with Geo-Cordinates of pre-monsoon (current year) to be included in the final EIA report.

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8. **Pichhri 2 Sand Ghat in the River bed of Damodar River of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Pichhri & Phusro, Circle : Peterwar & Bermo, Distt. : Bokaro, Jharkhand (4.72 Ha).**

(Proposal No : SIA/JH/MIN/ 498351/2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 30.09.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.
Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity:41,967.00Cum. / annum or 73,861.97TPA (dry basis).

Project and Location Details:

Sl. no.	Parameter	Details
1	Project Name	Pichhri 2 Sand Ghat in the River bed of Damodar River

2	Lessee:	M/s Jharkhand State Mineral Development Corporation Ltd. (A Government of Jharkhand Undertaking)	
3	Lessee Address	Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand)	
4	Lease Area	4.72 Ha.	
5	Type of Land	Non-Forest Government waste Land (River Bed)	
6	Project Cost	Capital Cost: Rs. 12.78 Lakhs	Recurring: 13.3 Lakhs / Year
7	EMP Budget	Capital: Rs 2.76Lakhs	Recurring: 3.076Lakhs / Year
8	New or Expansion	New	
9	Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity	41,967.00 m^3 (dry basis)	Tonnes: -73,861.97 tonnes(dry basis)
10	Mine Life/ Lease Period	Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy	
11	Man power	34	
12	Water Requirement	3.822 KLD (Drinking: 0.51 KLD, Dust Suppression: 1.932 KLD, Plantation: 1.380 KLD)	
13	Water Source	By authorised hired tankers	
14	DG Set / power	NA	
15	Crusher	NA	
16	Nearest Water Body	On Damodar River bed sand mining is proposed.	
17	Nearest Habitation	Phusro – 0.351 km. – NW direction	
18	Nearest Rail Station	The nearest Railway station Phusrois located at a distance of about 1.46 Km in SW direction	
19	Nearest Air Port	Birsa Munda Airport is situated at a distance of about 84.90 Km in SWdirection	
20	Nearest Forest	More than 250 m, as per Forest Division. vide Letter no. – 654, Dated - 10-03-2023	
21	Road & Highways	Nearest village road is 0.381 km W direction from the lease area and this road after 1.40 km connected to Phusro Main Road.	

CO-ORDINATES

GPS Coordinates		
Point	**Latitude**	**Longitude**
1	23° 45' 24.793" N	86° 00' 30.085" E
2	23° 45' 24.730" N	86° 00' 31.311" E
3	23° 45' 24.216" N	86° 00' 33.380" E
4	23° 45' 21.153" N	86° 00' 32.540" E
5	23° 45' 19.316" N	86° 00' 31.571" E
6	23° 45' 16.959" N	86° 00' 30.354" E
7	23° 45' 14.676" N	86° 00' 28.833" E
8	23° 45' 11.836" N	86° 00' 24.668" E
9	23º 45' 15.164" N	86° 00' 22.569" E
10	23° 45' 16.987" N	86° 00' 25.554" E
11	23° 45' 21.148" N	86° 00' 28.692" E

LAND DETAILS

Khata no.	Plot no.
237	01

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Auction letter has been issued by Joint Secretary, Mines & Geology Deptt., Govt. of Jharkhand vide letter no. Kha.ni.-(Vividh)-117/2017-2090/M, dated 30.09.2022. According to provisions in Jharkhand State sand Mining Policy and its amendment. JSMDC Ltd. has been nominated as nodal agency for operating sand mines in category II.
2	CO	:	The CO, Peterwar vide letter no. 15, dated 09.01.2023 has certified that the plot no. of the project is recorded as "Nadi" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Bokaro vide letter no. 1418/Khanan, dated 26.09.2024 certified that no other balughat exists within 500 m radius from proposed project site.

4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 883, dated 17.05.2024 with reference to letter no. 743 dated 25.04.2024 from the DC, Bokaro has certified that the proposed project site is outside Eco Sensitive Zone of Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Bokaro Forest Division vide letter no. 654, dated 10.03.2023 certified that the distance of notified forest is 280 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Bokaro District (Sl. no. 01, Page no. 70).
7	Gram Sabha	:	BDO, Peterwar vide letter no. 962, dated 10.06.2024 Gram Sabha conducted on 10.06.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Bokaro vide Memo No. 1380/M, dated 18.09.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay has confirmed vide letter dated 30.09.2024 that the mine plan has been prepared by him.

Working Details

1	Mining Method	Opencast Manual Method	
2	Quarry Area	4.72 Ha.	Mine life/Lease Period - Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining
3	Waste Generation	00 cum	
4	Stripping Ratio	NA	
5	Working Days	200 per year	
6	Grid excavation	25x 25(meter)^2	
7	Elevation of Mine	141.2 m AMSL (Pre-Monsoon) &142.2 m AMSL (Post-Monsoon)	
8	Ground Level Elevation	7 M AMSL	
9	Ultimate Working Depth	1.5 m	
10	Water Table	138.2m	
11	Topography of Mine	Flat	
12	Explosive Requirement	No. blasting required	
13	Diesel/Fuel requirement	Not required for mining.	

Production Details

Year	Production of Sand (cum)	Production of Sand (tonnes)
1st	41,967.00	73,861.97

The development plan submitted along with the mining plan relates to mining operation during the first year.

Land Use (Plan period)

Sl. No.	Pattern of Utilization	Land Use (in Ha.)	Remarks
1	Mining Activities	3.20	Area may vary based on flow of water in the subsequent year.
2	Non-mineable due to Active channel	1.52	▪ Distance from the bank should be 1/4th of River width and should not be less than 7.5 meters. ▪ Mining shall be restricted within the central 3/4thwidth of the river/rivulet or 7.5 meters (inward) from River-bank but up to 10% of the width of the River. ▪ Mining shall be restricted 60 % area for both side of river edge.
Total		4.72	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Along River Edge	415 m	138
2	Along Approach Road	483 m	322

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development,

Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

EMP Budget

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. @ Rs. 1000 per Tanker	-	2,00,000
2	Plantation (@Rs.600 per plant) 460 X 600 = 2,76,000 (Includes Fertilizer, Pesticides, Maintenance)	2,76,000	27,600
3	Environmental Monitoring (One Day Monitoring) Ambient Air 24 hrs - Rs. 26,000 Surface Water - Rs. 6,000 Noise 24 hrs - Rs. 8,000 Total - Rs. 40,000 (Per Season) At least two season in a Year - Rs. 40,000 x 2 = Rs. 80,000	--	80,000
Total		2,76,000	3,07,600

Environment Monitoring Programme

SL. No.	Description	Duration
1.	Air	6 Monthly
2.	Surface Water	6 Monthly
3.	Noise	6 Monthly

Solid Waste Management

No solid waste is generated during the course of mining.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Sewage from rest shelter would be treated in Septic Tank soak pit.
- There is no other source for generation or discharge of trade effluent.

Air Quality Management

Sand will be mined manually. No mining equipment would be needed. However, diesel operated tippers/tractors would be used for transportation of sand from mine to stockyard.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all transport vehicles would be repaired & maintained regularly.

Loading of Product on tippers – Water will be sprinkled on blasted Sand mass before they are loaded to trucks for transport.

Movement of tippers on Road – Movement of tippers on road generate dust. For mitigation of this pollution following measures will be taken

- Regular water sprinkling on Approachroad by using water tankers.
- Regular repair of Approach road
- All Trucks carrying Sand outside lease area will have PUC certificate.
- Transport tippers/traders moving on public road will be covered with tarpaulin.

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DICUSSED BELOW:

Road accidents

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

- Ensure speed limit for the haulage vehicle for 40 KMPH.
- Regular maintenance of haulage road
- Appropriate navigational signs informing sensitive area like school and habitation
- Regular maintenance of the vehicles.

Dust generation

No drilling involved

- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

Noise Generation

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 – 90 (A) measured at distance of 3m from the source.

Preventive measures

- Transportation activities would be confined during day time only.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise.
- Regular repair and maintenance of tippers/tractors.
- Plantation on both sides of haulage road.

- Tippers having PUC certified will be allowed to be used for sand transportation.

Health Hazards

During digging and handling of sand i.e. loading,. transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

Preventive Measures

Following mitigation measures would be taken to minimize this impact on health

- Regular water sprinkling on haulage roads
- Tree plantation on both sides of haulage road
- Tippers / Tractors carrying sand would be covered
- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

Accident at Site

This is a project with only source of accident at site would be movement of tippers /tractors within mine site for transportation of sand.

Preventive measures

Following mitigation measures would be taken to minimise risk of road accident-

- Separate alignment for movement of loaded vehicles coming out of mine site
- Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
- Regular maintenance and repair of haulage vehicles employed for sand transportation
- No overtaking of transportation vehicles within mine site
- Proper maintenance of haulage roads

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.

- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.

b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.

c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard .

d. The Boundary Pillars of the proposed mine lease area will be maintained properly.

e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.

f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.

g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.

h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.

i. If any tree felling than necessary permission shall be taken from the competent authority.

j. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

k. Mining will be restricted upto 3 meter.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Pichhri 2 Sand Ghat in the River bed of Damodar River of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Pichhri & Phusro, Circle : Peterwar & Bermo, Distt. : Bokaro, Jharkhand (4.72 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).

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. The Environmental Clearance granted for lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.

IV. Replenishment study shall be conducted during pre-monsoon and post monsoon every year and study report have to be submitted to SEIAA / SEAC, Jharkhand. The production shall be restricted to 60% of the replenished quantity or the proposed quantity in the mine plan, which ever is less.

V. Suitable plant species of not less than 2 M height to be planted in area equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

VI. Dedicated water tanker to be provided for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VII. Pre-employment Occupational health checkup for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to submitted along with 6 monthly compliance.

VIII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted within 6 monthly compliance report with Geo-Tagged photographs.

IX. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted within 6 monthly compliance report.

X. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

XI. Project Authority will ensure that personal protective equipments such as protective clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel's.

XII. River Sand Mining shall not be done in rainy Season (mid June to mid October of each calendar year).

XIII. Dept. of Mines & Geology, Govt. of Jharkhand shall keep a strict vigil in the compliance of relevant provisions of applicable Jharkhand Minerals (Prevention of illegal mining, Transportation and Storage) Rule 2017 and its amendment especially scientific execution of mining plan (as approved by they themselves) and report violations if any is found as well as action taken for the same.

XIV. Project Proponent shall submit (to the SEIAA, Jharkhand, Regional Office of MoEF&CC at Ranchi, Jharkhand State Pollution Control Board) six monthly compliance report with evidence of the conditions within a fortnight after the end of every six month till validity period of Environmental Clearance.

XV. The project proponent before starting any activity / preparation of ground, on the leased area shall demarcate his lease hold by RCC pillars erected at the cost of lease holder after certification of the mining officer. On each pillar Geo-Coordinate and fore bearing / back bearing shall be written with permanent paint mark as described in the mining plan. All the pillars should remain intact at same geo-coordinate. Establishment / labeling of Benchmark at each pillars or ground control points.

XVI. Extraction of sand beyond annual production capacity is not permitted.

XVII. The Project Proponent should undertake the sand mining limited to 03 meter (three meter) depth by exclusively manual method.

XVIII. The stacking area of mined-out sand which shall be situated near the mining site within a fenced area from all sides to avoid being spread in the nearby areas by high winds and the height of stacking should not exceed 2 meter. Transportation shall be confined to day time only that is from sunrise to sunset, to avoid inconvenience to local population in any manner.

XIX. Mining activity shall not be done for mine lease where mining can cause danger to site of flood protection works, places of cultural, religious, historical and archaeological importance.

XX. Project Proponent shall submit the annual replenishment report certified by an authorized agency.

XXI. No labour camp shall be allowed in riverbed.

XXII. Provision shall be made for housing labour with all necessary infrastructure and facilities (outside mining Block and river-bed) such as fuel for cooking, toilets / mobile toilets, safe drinking water, First-Aid facilities, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

XXIII. Labour & Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and

health aspects. Occupational health surveillance program of the workers shall be undertaken periodically to observe any adverse health impact due to exposure to dust and take corrective measures, if needed.

XXIV. The Project Proponent shall make arrangements for safe drinking water, first aid facility along with anti-venom injection, in case of emergency for the workers.

XXV. Sand and gravel may be extracted across the entire active channel during the dry season.

XXVI. Abandoned stream channels on the terrace and inactive floodplains be preferred rather than active channels and their deltas and flood plains. The stream should not be diverted to form the inactive channel.

XXVII. Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.

XXVIII. Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.

XXIX. Sand and gravel shall not be extracted up to a distance of 1 kilo meter (1 km.) from major bridges and highways on both sides, of five times (5x) of the span (x) of a bridge / public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.

XXX. Sand and gravel could be extracted from the downstream of the sand bar at river bends.

XXXI. Mining depth should be restricted to 3 meters and distance from the band should be $1/4^{th}$ of river width and should not be less than 7.5 meters.

XXXII. A buffer distance / unmined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed / prescribed by the regulatory authority shall be maintained.

XXXIII. River bed sand mining shall be restricted within the central $3/4^{th}$ width of the river/rivulet of 7.5 meters (inward) from river banks but up to 10% of the width of the river, as the case may be. Regulating authority while regulating the zone of river bed mining shall ensure that the objective to minimize the effects of riverbank erosion and consequential channel migration are achieved to the extent possible. In general, the area for removal of minerals shall not exceed 60% of the mine lease area, and any deviation of relaxation in this regard shall be adequately supported by the scientific report.

XXXIV. Transportation from the river bed will be done using the existing road.

XXXV. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.

XXXVI. Wet sand will not be transported.

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9. **Rajhar Sand Ghat in the river bed of Auranga River of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Rajhar & Bajkum, P.S. : Latehar, Distt. : Latehar, Jharkhand (2.40 Ha).**

(Proposal No : SIA/JH/MIN/ 498112/2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 30.09.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.
Application for Environmental Clearance (EC).
EC Application for: Proposed Capacity:33,521.00Cum. / annum or 57,322.00TPA (dry basis).

Project and Location Details:

Sl. no.	Parameter	Details	
1	Project Name	Rajhar Sand Ghat in the river bed of Auranga River	
2	Lessee:	M/s Jharkhand State Mineral Development Corporation Ltd. (A Government Of Jharkhand Undertaking)	
3	Lessee Address	Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand)	
4	Lease Area	2.40 Ha.	Acres – 5.9 Acres
5	Type of Land	Non-Forest Government waste Land (River Bed)	
6	Project Cost	Capital Cost: Rs. 12.33 Lakhs	Recurring: 11.50 Lakhs / Year
7	EMP Budget	Capital: Rs 2.70Lakhs	Recurring: 3.07Lakhs / Year
8	New or Expansion	New	
9	Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity	33,521.00 m^3 (dry basis)	57,322.00 Ton (dry basis)
10	Mine Life/ Lease Period	Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy	
11	Man power	29	
12	Water Requirement	3.01 KLD (Drinking: 0.435 KLD, Dust Suppression: 1.22 KLD, Plantation: 1.35 KLD)	
13	Water Source	By authorised hired tankers	

14	DG Set / power	NA
15	Crusher	NA
16	Nearest Water Body	On Auranga River bed sand mining is proposed.
17	Nearest Habitation	Bajkum – 0.070 Km in N direction
18	Nearest Rail Station	Latehar station is located at a distance of about 1.6 Km in SW direction.
19	Nearest Air Port	Ranchi Airport is situated at a distance of about 97.4 Km in SE direction.
20	Nearest Forest	More than 250 m, as per Forest Division. vide Letter no. – 571, Dated - 26-04-2023
21	Road & Highways	• Village road - 0.02 Km in W direction. • Latehar railway station road – 0.304 Km in W direction after the village road.

CO-ORDINATES

GPS Coordinates		
Point	**Latitude**	**Longitude**
A	23° 44' 06.124" N	84° 29' 07.880" E
B	23° 44' 14.165" N	84° 29' 14.075" E
C	23° 44' 13.063" N	84° 29' 15.321" E
D	23° 44' 08.719" N	84° 29' 12.184" E
E	23° 44' 05.512" N	84° 29' 10.250" E
F	23° 44' 03.451" N	84° 29' 08.510" E
G	23° 44' 01.855" N	84° 29' 06.901" E
H	23° 44' 02.993" N	84° 29' 05.374" E
I	23° 44' 03.863" N	84° 29' 06.099" E

LAND DETAILS

Village	Khata no.	Plot no.
Rajhar	41	265
Bajkum	99	9/183(P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Auction letter has been issued by Joint Secretary, Mines & Geology Deptt., Govt. of Jharkhand vide letter no. Kha.ni.-(Vividh)-117/2017-2090/M, dated 30.09.2022. According to provisions in Jharkhand State sand Mining Policy and its amendment. JSMDC Ltd. has been nominated as nodal agency for operating sand mines in category II.
2	CO	:	The CO, Latehar vide letter no. 122, dated 23.02.2023 has mentioned the plot no. of the project is recorded as "Nadi" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Latehar vide memo no. 870/M, dated 24.09.2024 certified that 01 other balughat (2.39 Ha) exists within 500 m radius from proposed project site and total area is 4.79 Ha.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1911, dated 30.08.2024 certified that the proposed project site is outside Eco Sensitive Zone of Lawalong Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Latehar Forest Division vide letter no. 349, dated 24.02.2023 certified that the distance of notified forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Latehar District (Sl. no. 04, Page no. 70).
7	Gram Sabha	:	Gram Sabha conducted on 13.10.2023.
8	Mine Plan Approval	:	Approved by Assistant Mining Officer –cum- District Mining Officer, Latehar vide Memo No. 706/Mining, dated 08.08.2024. Rajhar Sand Ghat (2.40 Ha) and Bajkum Sand Ghat (2.39 Ha) both the sand ghats stretch across two mouza, i.e. Rajhar & Bajkum, but the NoCs and all requisite certificates were obtained separately for individual mouza. Also the above two ghats boundary geo-coordinates fall within the Potential Zone boundary as mentioned in the approved DSR of Latehar District. The mine plan prepared takes in to consideration both the mouza i.e. Rajhar & Bajkum.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay has confirmed vide letter dated 30.09.2024 that the mine plan has been prepared by him.

Working Details

1	Mining Method	Opencast Manual Method	
2	Quarry Area	2.40 Ha.	Mine life/Lease Period - Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining
3	Waste Generation	00 cum	
4	Stripping Ratio	NA	
5	Working Days	200 per year	
6	Grid excavation	25x 25(meter)^2	
7	Elevation of Mine	364.1 m AMSI (Pre-Monsoon) &365.0 m AMSL (Post-Monsoon)	
8	Ground Level Elevation	364 M AMSL	
9	Ultimate Working Depth	1.5 m	
10	Water Table	161.3 m	
11	Topography of Mine	Flat	
12	Explosive Requirement	No. blasting required	
13	Diesel/Fuel requirement	Not required for mining.	

Production Details

Year	Production of Sand (cum)	Production of Sand(tonnes)
1st	33,521.00	57,322.00

The development plan submitted along with the mining plan relates to mining operation during the first year.

Land Use (Plan period)

Sl. No.	Pattern of Utilization	Land Use (in Ha.)	Remarks
1	Mining Activities	2.23	Area may vary based on flow of water in the subsequent year.

2	Non-mineable due to Safety zone &Active channel	0.17	1. Distance from the bank should be 1/4thof River width and should not be less than 7.5 meters. 2. Mining shall be restricted within the central 3/4thwidth of the river/rivulet or 7.5 meters (inward) from River-bank but up to 10% of the width of the River. 3. Mining shall be restricted 60 % area for both side of river edge.
Total		2.40	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Along River Edge	139 m	46
2	Along Approach Road	304 m	404

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

EMP Budget

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. @ Rs. 1000 per Tanker	--	2,00,000
2	Plantation (@Rs.600 per plant) 450 X 600 = 6,75,000 (Includes Fertilizer, Pesticides, Maintenance)	2,70,000	27,000
3	Environmental Monitoring (One Day Monitoring) Ambient Air 24 hrs a- Rs. 26,000 Surface Water - Rs. 6,000 Noise 24 hrs - Rs. 8,000	--	80,000

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
	Total - Rs. 40,000 (Per Season) At least two season in a Year - Rs. 40,000 x 2 = Rs. 80,000		
Total		**2,70,000**	**3,07,000**

Environment Monitoring Programme

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 Stations	6 Month
2.	Surface Water	3 Stations	6 Month
3.	Noise	3 Stations	6 Month

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.

b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.

c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard .

d. The Boundary Pillars of the proposed mine lease area will be maintained properly.

e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.

f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.

g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.

h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.

i. If any tree felling than necessary permission shall be taken from the competent authority.

j. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

k. Mining will be restricted upto 3 meter.

Solid Waste Management

No solid waste is generated during the course of mining.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Sewage from rest shelter would be treated in Septic Tank soak pit.
- There is no other source for generation or discharge of trade effluent.

Air Quality Management

Sand will be mined manually. No mining equipment would be needed. However, diesel operated tippers/tractors would be used for transportation of sand from mine to stockyard.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all transport vehicles would be repaired & maintained regularly.

Loading of Product on tippers – Water will be sprinkled on blasted Sand mass before they are loaded to trucks for transport.

Movement of tippers on Road – Movement of tippers on road generate dust. For mitigation of this pollution following measures will be taken

- Regular water sprinkling on Approachroad by using water tankers.
- Regular repair of Approach road
- All Trucks carrying Sand outside lease area will have PUC certificate.
- Transport tippers/traders moving on public road will be covered with tarpaulin.

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DICUSSED BELOW:

Road accidents

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

- Ensure speed limit for the haulage vehicle for 40 KMPH.
- Regular maintenance of haulage road
- Appropriate navigational signs informing sensitive area like school and habitation
- Regular maintenance of the vehicles.

Dust generation

No drilling involved

- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

Noise Generation

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 – 90 (A) measured at distance of 3m from the source.

Preventive measures

- Transportation activities would be confined during day time only.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise.
- Regular repair and maintenance of tippers/tractors.
- Plantation on both sides of haulage road.
- Tippers having PUC certified will be allowed to be used for sand transportation.

Health Hazards

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

Preventive Measures

Following mitigation measures would be taken to minimize this impact on health

- Regular water sprinkling on haulage roads
- Tree plantation on both sides of haulage road
- Tippers / Tractors carrying sand would be covered
- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

Accident at Site

This is a project with only source of accident at site would be movement of tippers /tractors within mine site for transportation of sand.

Preventive measures

Following mitigation measures would be taken to minimise risk of road accident-

- Separate alignment for movement of loaded vehicles coming out of mine site
- Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
- Regular maintenance and repair of haulage vehicles employed for sand transportation
- No overtaking of transportation vehicles within mine site

- Proper maintenance of haulage roads

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

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 Rajhar Sand Ghat in the river bed of Auranga River of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Rajhar & Bajkum, P.S. : Latehar, Distt. : Latehar, Jharkhand (2.40 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

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XXIX. Sand and gravel shall not be extracted up to a distance of 1 kilo meter (1 km.) from major bridges and highways on both sides, of five times (5x) of the span (x) of a bridge / public civil structure (including water intake points) on up-stream side and

ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.

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XXXV. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.

XXXVI. Wet sand will not be transported.

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10. Dhodri Sand Ghat of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Dhodri & Saurpachisa, Circle : Godda, Distt. : Godda, Jharkhand (2.39 Ha).

(Proposal No : SIA/JH/MIN/ 498280/2024)

The proposal for mining and the details in the mine plan were not commensurate with ESGSM, 2020. The PAs and the consultant agreed with the same and also agreed to submit afresh proposal with revised mine plan.

Hence, revised mine plan is to be prepared and proposal to be submitted afresh for consideration for EC.

Hence, it is recommended to SEIAA to delist the present project proposal.

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11. Bajkum Sand Ghat in the river bed of Auranga River of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Rajhar & Bajkum, P.S. : Latehar, Distt. : Latehar, Jharkhand (2.39 Ha).

(Proposal No : SIA/JH/MIN/ 498058/2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 30.09.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.
Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity:26,647Cum. / annum or 45,566TPA (dry basis).

Project and Location Details:

Sl. no.	Parameter	Details	
1	Project Name	Bajkum Sand Ghat	
2	Lessee:	M/s Jharkhand State Mineral Development Corporation Ltd. (A Government of Jharkhand Undertaking)	
3	Lessee Address	Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand)	
4	Lease Area	2.39 Ha.	
5	Type of Land	Non-Forest Government waste Land (River Bed)	
6	Project Cost	Capital Cost: Rs. 12.22Lakhs	Recurring: 9.70 Lakhs / Year
7	EMP Budget	Capital: Rs1.506Lakhs	Recurring: 2.950Lakhs / Year
8	New or Expansion	New	
9	Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity	26,647m^3 (dry basis)	Tonnes: -45,566 tonnes(dry basis)
10	Mine Life/ Lease Period	Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy	
11	Man power	24	
12	Water Requirement	1.69 KLD (Drinking: 0.36 KLD, Dust Suppression: 0.572 KLD, Plantation: 1.78 KLD)	
13	Water Source	By authorised hired tankers	

14	DG Set / power	NA
15	Crusher	NA
16	Nearest Water Body	Auranga River bed sand mining is proposed.
17	Nearest Habitation	Bajkum – 0.100 Km in N direction
18	Nearest Rail Station	The nearest Railway station Latehar located at a distance of about 1.6 Km in SW direction
19	Nearest Air Port	Ranchi Airport is situated at a distance of about 97.4 Km in SE direction
20	Nearest Forest	More than 250 m, as per Forest Division. vide Letter no. – 349, Dated –24-02-2023
21	Road & Highways	Nearest village road is 0.03 km North direction from the lease area and this road after 0.143 km North direction connected (latehar railway station road).

CO-ORDINATES

GPS Coordinates		
Point	**Latitude**	**Longitude**
A	23° 43' 59.590" N	84° 28' 52.277" E
B	23° 43' 59.115" N	84° 28' 58.010" E
C	23° 44' 00.304" N	84° 29' 01.757" E
D	23° 44' 02.071" N	84° 29' 04.584" E
E	23° 44' 01.418" N	84° 29' 06.222" E
F	23° 43' 59.469" N	84° 29' 04.039" E
G	23° 43' 58.074" N	84° 29' 01.127" E
H	23° 43' 57.391" N	84° 28' 59.548" E
I	23° 43' 57.426" N	84° 28' 56.982" E
J	23° 43' 57.759" N	84° 28' 54.025" E
K	23° 43' 58.123" N	84° 28' 52.467" E

LAND DETAILS

VILLAGE	KHATA NO.	PLOT NO.
BAJKUM	99	9/183 (P)
RAJHAR	41	265

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Auction letter has been issued by Joint Secretary, Mines & Geology Deptt., Govt. of Jharkhand vide letter no. Kha.ni.-(Vividh)-117/2017-2090/M, dated 30.09.2022. According to provisions in Jharkhand State sand Mining Policy and its amendment. JSMDC Ltd. has been nominated as nodal agency for operating sand mines in category II.
2	CO	:	The CO, Latehar vide letter no. 122, dated 23.02.2023 has mentioned the plot no. of the project is recorded as "Nadi" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Latehar vide memo no. 871/M, dated 24.09.2024 certified that 01 other balughat (2.40 Ha) exists within 500 m radius from proposed project site and total area is 4.79 Ha.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1910, dated 30.08.2024 certified that the proposed project site is outside Eco Sensitive Zone of Lawalong Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Latehar Forest Division vide letter no. 349, dated 24.02.2023 certified that the distance of notified forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Latehar District (Sl. no. 03, Page no. 70).
7	Gram Sabha	:	Gram Sabha conducted on 13.10.2023.
8	Mine Plan Approval	:	Approved by Assistant Mining Officer –cum- District Mining Officer, Latehar vide Memo No. 705/Mining, dated 08.08.2024. Rajhar Sand Ghat (2.40 Ha) and Bajkum Sand Ghat (2.39 Ha) both the sand ghats stretch across two mouza, i.e. Rajhar & Bajkum, but the NoCs and all requisite certificates were obtained separately for individual mouza. Also the above two ghats boundary geo-coordinates fall within the Potential Zone boundary as mentioned in the approved DSR of Latehar District. The mine plan prepared takes in to consideration both the mouza i.e. Rajhar & Bajkum.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay has confirmed vide letter dated 30.09.2024 that the mine plan has been prepared by him.

Working Details

1	Mining Method	Opencast Manual Method	
2	Quarry Area	2.39 Ha.	Mine life/Lease Period - Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining
3	Waste Generation	00 cum	
4	Stripping Ratio	NA	
5	Working Days	200 per year	
6	Grid excavation	25x 25(meter)^2	
7	Elevation of Mine	368.4 m AMSL (Pre-Monsoon) &367.6 m AMSL (Post-Monsoon)	
8	Ground Level Elevation	366 M AMSL	
9	Ultimate Working Depth	1.2 m	
10	Water Table	363 m	
11	Topography of Mine	Flat	
12	Explosive Requirement	No. blasting required	
13	Diesel/Fuel requirement	Not required for mining.	

Production Details

Year	Production of Sand (cum)	Production of Sand(tonnes)
1st	26,647	45,566

The development plan submitted along with the mining plan relates to mining operation during the first year.

Land Use (Plan period)

Sl. No.	Pattern of Utilization	Land Use (in Ha.)	Remarks
1	Mining Activities	2.22	Area may vary based on flow of water in the subsequent year.

2	Non-mineable due to Active channel	0.17	▪ Distance from the bank should be 1/4th of River width and should not be less than 7.5 meters. ▪ Mining shall be restricted within the central 3/4thwidth of the river/rivulet or 7.5 meters (inward) from River-bank but up to 10% of the width of the River. ▪ Mining shall be restricted 60 % area for both side of river edge.
Total		2.39	

ENVIRONMENT MANAGEMENT

Green Belt Developmcnt

S. No.	Location	Area/Length	No. of Trees
1	Along River Edge	129 m	63
2	Along Approach Road	143m	188

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

EMP Budget

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	**Water facility for Dust Suppression, watering plants etc. @ Rs. 1000 per Tanker**	-	2,00,000
2	**Plantation (@Rs.600 per plant) 251 X 600 = 1,50,600** **(Includes Fertilizer, Pesticides, Maintenance)**	1,50,600	15,060

3	Environmental Monitoring (One Day Monitoring) Ambient Air 24 hrs a- Rs. 26,000 Surface Water - Rs. 6,000 Noise 24 hrs - Rs. 8,000 **Total - Rs. 40,000** **(Per Season)** **At least two season in a Year - Rs. 40,000 x 2** **= Rs. 80,000**	--	80,000
Total		**1,50,600**	**2,95,060**

Environment Monitoring Programme

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Surface Water	3 stations	6 Monthly
3.	Noise	3 stations	6 Monthly

Solid Waste Management

No solid waste is generated during the course of mining.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Sewage from rest shelter would be treated in Septic Tank soak pit.
- There is no other source for generation or discharge of trade effluent.

Air Quality Management

Sand will be mined manually. No mining equipment would be needed. However, diesel operated tippers/tractors would be used for transportation of sand from mine to stockyard.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all transport vehicles would be repaired & maintained regularly.

Loading of Product on tippers – Water will be sprinkled on blasted Sand mass before they are loaded to trucks for transport.

Movement of tippers on Road – Movement of tippers on road generate dust. For mitigation of this pollution following measures will be taken

- Regular water sprinkling on Approachroad by using water tankers.
- Regular repair of Approach road
- All Trucks carrying Sand outside lease area will have PUC certificate.
- Transport tippers/traders moving on public road will be covered with tarpaulin.

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DICUSSED BELOW:

Road accidents

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

- Ensure speed limit for the haulage vehicle for 40 KMPH.
- Regular maintenance of haulage road
- Appropriate navigational signs informing sensitive area like school and habitation
- Regular maintenance of the vehicles.

Dust generation

No drilling involved

- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

Noise Generation

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 – 90 (A) measured at distance of 3m from the source.

Preventive measures

- Transportation activities would be confined during day time only.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise.
- Regular repair and maintenance of tippers/tractors.
- Plantation on both sides of haulage road.
- Tippers having PUC certified will be allowed to be used for sand transportation.

Health Hazards

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

Preventive Measures

Following mitigation measures would be taken to minimize this impact on health

- Regular water sprinkling on haulage roads
- Tree plantation on both sides of haulage road
- Tippers / Tractors carrying sand would be covered
- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

Accident at Site

This is a project with only source of accident at site would be movement of tippers /tractors within mine site for transportation of sand.

Preventive measures

Following mitigation measures would be taken to minimise risk of road accident-

- Separate alignment for movement of loaded vehicles coming out of mine site
- Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
- Regular maintenance and repair of haulage vehicles employed for sand transportation
- No overtaking of transportation vehicles within mine site
- Proper maintenance of haulage roads

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.

b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.

c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard .

d. The Boundary Pillars of the proposed mine lease area will be maintained properly.

e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.

f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.

g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.

h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.

i. If any tree felling than necessary permission shall be taken from the competent authority.

j. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

k. Mining will be restricted upto 3 meter.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Bajkum Sand Ghat in the river bed of Auranga River of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Rajhar & Bajkum, P.S. : Latehar, Distt. : Latehar, Jharkhand (2.39 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).

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. The Environmental Clearance granted for lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.

IV. Replenishment study shall be conducted during pre-monsoon and post monsoon every year and study report have to be submitted to SEIAA / SEAC, Jharkhand. The

production shall be restricted to 60% of the replenished quantity or the proposed quantity in the mine plan, which ever is less.

V. Suitable plant species of not less than 2 M height to be planted in area equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

VI. Dedicated water tanker to be provided for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VII. Pre-employment Occupational health checkup for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to submitted along with 6 monthly compliance.

VIII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted within 6 monthly compliance report with Geo-Tagged photographs.

IX. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted within 6 monthly compliance report.

X. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

XI. Project Authority will ensure that personal protective equipments such as protective clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel's.

XII. River Sand Mining shall not be done in rainy Season (mid June to mid October of each calendar year).

XIII. Dept. of Mines & Geology, Govt. of Jharkhand shall keep a strict vigil in the compliance of relevant provisions of applicable Jharkhand Minerals (Prevention of illegal mining, Transportation and Storage) Rule 2017 and its amendment especially scientific execution of mining plan (as approved by they themselves) and report violations if any is found as well as action taken for the same.

XIV. Project Proponent shall submit (to the SEIAA, Jharkhand, Regional Office of MoEF&CC at Ranchi, Jharkhand State Pollution Control Board) six monthly compliance report with evidence of the conditions within a fortnight after the end of every six month till validity period of Environmental Clearance.

XV. The project proponent before starting any activity / preparation of ground, on the leased area shall demarcate his lease hold by RCC pillars erected at the cost of lease holder after certification of the mining officer. On each pillar Geo-Coordinate and fore bearing / back bearing shall be written with permanent paint mark as described in the mining plan. All the pillars should remain intact at same geo-coordinate. Establishment / labeling of Benchmark at each pillars or ground control points.

XVI. Extraction of sand beyond annual production capacity is not permitted.

XVII. The Project Proponent should undertake the sand mining limited to 03 meter (three meter) depth by exclusively manual method.

XVIII. The stacking area of mined-out sand which shall be situated near the mining site within a fenced area from all sides to avoid being spread in the nearby areas by high winds and the height of stacking should not exceed 2 meter. Transportation shall be confined to day time only that is from sunrise to sunset, to avoid inconvenience to local population in any manner.

XIX. Mining activity shall not be done for mine lease where mining can cause danger to site of flood protection works, places of cultural, religious, historical and archaeological importance.

XX. Project Proponent shall submit the annual replenishment report certified by an authorized agency.

XXI. No labour camp shall be allowed in riverbed.

XXII. Provision shall be made for housing labour with all necessary infrastructure and facilities (outside mining Block and river-bed) such as fuel for cooking, toilets / mobile toilets, safe drinking water, First-Aid facilities, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

XXIII. Labour & Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers shall be undertaken periodically to observe any adverse health impact due to exposure to dust and take corrective measures, if needed.

XXIV. The Project Proponent shall make arrangements for safe drinking water, first aid facility along with anti-venom injection, in case of emergency for the workers.

XXV. Sand and gravel may be extracted across the entire active channel during the dry season.

XXVI. Abandoned stream channels on the terrace and inactive floodplains be preferred rather than active channels and their deltas and flood plains. The stream should not be diverted to form the inactive channel.

XXVII. Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.

XXVIII. Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.

XXIX. Sand and gravel shall not be extracted up to a distance of 1 kilo meter (1 km.) from major bridges and highways on both sides, of five times (5x) of the span (x) of a bridge / public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.

XXX. Sand and gravel could be extracted from the downstream of the sand bar at river bends.

XXXI. Mining depth should be restricted to 3 meters and distance from the band should be $1/4^{th}$ of river width and should not be less than 7.5 meters.

XXXII. A buffer distance / unmined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed / prescribed by the regulatory authority shall be maintained.

XXXIII. River bed sand mining shall be restricted within the central 3/4th width of the river/rivulet of 7.5 meters (inward) from river banks but up to 10% of the width of the river, as the case may be. Regulating authority while regulating the zone of river bed mining shall ensure that the objective to minimize the effects of riverbank erosion and consequential channel migration are achieved to the extent possible. In general, the area for removal of minerals shall not exceed 60% of the mine lease area, and any deviation of relaxation in this regard shall be adequately supported by the scientific report.

XXXIV. Transportation from the river bed will be done using the existing road.

XXXV. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.

XXXVI. Wet sand will not be transported.

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12. Samlapur Stone Mine of M/s Baba Stone Works (Prop. : Shri Sundaram Pandey), Village : Samlapur, Thana : Hiranpur, Distt. : Pakur, Jharkhand (2.185 Ha).

(Proposal No : SIA/JH/MIN/ 495206/2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 30.09.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.
Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 80,606 Cum. / annum or 2,33,757 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Samlapur Stone Mine	
2	Lessee:	:	M/s Baba Stone Works Propnent- Shri SundaramPanday	
3	Lessee Address	:	S/O Shri Sanjay Pandey R/o Sindhipara, Pakur	
4	Lease Area	:	2.185 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs. 124.83 Lakhs	Recurring Cost: Rs. 36.85 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 11.14 Lakhs	Recurring Cost: Rs. 5.11 Lakhs

8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 3,41,550cum	Tonnes: 9,90,495tons
10	Mine Life	:	9 years.	
11	Man power	:	32Person	
12	Water Requirement	:	6.31 KLD (Drinking: 0.48 KLD, Dust Suppression: 2.03KLD, Plantation: 3.80 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	60 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Ranipur river – 6.0 Km in North direction	
17	Nearest Habitation	:	Samlapur Village – 0.4 Km in South direction	
18	Nearest Rail Station	:	Pakur Railway Station is 14 km (aerial distance) in East direction.	
19	Nearest Air Port	:	Deoghat Airport at 106 km (aerial distance) South West direction.	
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer NOC. letter no.-1528 Dated- 06/12/2023	
21	Road & Highways	:	The mine can be approached by the NH-333A at 7.4 km (aerial distance) North direction.	

CO-ORDINATES

POINT	LATITUDE	LONGITUDE
1	24° 37' 51.12776877" N	087° 42' 31.02846126" E
2	24° 37' 50.57110909" N	087° 42' 31.34256926" E
3	24° 37' 49.84067189" N	087° 42' 31.76887900" E
4	24° 37' 49.69431341" N	087° 42' 32.30557188" E
5	24° 37' 49.56189380" N	087° 42' 33.02244023" E
6	24° 37' 50.11025014" N	087° 42' 33.92623105" E
7	24° 37' 50.12933117" N	087° 42' 34.17137684" E
8	24° 37' 49.93587457" N	087° 42' 34.96680188" E
9	24° 37' 49.82315515" N	087° 42' 35.73503707" E
10	24° 37' 49.71043570" N	087° 42' 36.50327226" E
11	24° 37' 49.38942590" N	087° 42' 36.72327309" E
12	24° 37' 48.81226737" N	087° 42' 36.57352620" E
13	24° 37' 48.09354061" N	087° 42' 36.32794128" E
14	24° 37' 47.32580849" N	087° 42' 36.15423488" E
15	24° 37' 47.01544832" N	087° 42' 36.06438674" E
16	24° 37' 46.41650705" N	087° 42' 35.78286257" E
17	24° 37' 45.83389977" N	087° 42' 35.57920679" E

18	24° 37' 45.39414076" N	087° 42' 35.46822637" E
19	24° 37' 45.74922367" N	087° 42' 34.10884157" E
20	24° 37' 46.10430630" N	087° 42' 32.74945676" E
21	24° 37' 46.46507577" N	087° 42' 32.81236330" E
22	24° 37' 46.87279147" N	087° 42' 31.60863784" E
23	24° 37' 47.22126614" N	087° 42' 30.55058615" E
24	24° 37' 47.64988961" N	087° 42' 29.97555806" E
25	24° 37' 47.92518415" N	087° 42' 29.46186630" E
26	24° 37' 48.21441747" N	087° 42' 28.72583035" E
27	24° 37' 48.74061254" N	087° 42' 28.94050750" E
28	24° 37' 49.21453606" N	087° 42' 29.14368409" E
29	24° 37' 49.82784810" N	087° 42' 29.53470319" E
30	24° 37' 49.64664236" N	087° 42' 29.91038821" E
31	24° 37' 50.14147325" N	087° 42' 30.13273241" E
32	24° 37' 50.90114216" N	087° 42' 30.48924982" E
33	24° 37' 51.05795439" N	087° 42' 30.80743203" E

LAND DETAILS

Khata no.	Plot no.
02	16, 17, 18 & 19
10	247 (P) & 248 (P)
16	20
19	21
21	246 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1211/M, dated 01.08.2024.
2	CO	:	The CO, Hiranpur vide letter no. 511/Ra., dated 09.10.2023 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 habitation of 12 houses at a distance of 400 meters of proposed project site, accordingly PAs has submitted EMP for the same.
3	DMO	:	DMO, Pakur vide memo no. 1338/M, dated 21.08.2024 certified that 01 other mining area (5.50 Acre) exists within 500 meters radius from proposed project site and total area is 10.90 Acre or 4.41 Ha.

4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 369, dated 22.02.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide letter no. 1528, dated 06.12.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1339/M, dated 21.08.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 99, Page no. 119).
7	Gram Sabha	:	BDO, Hiranpur vide letter no. 1105/Vi., dated 11.10.2023 informed that Gram Sabha conducted on 10.10.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1392/M, dated 30.08.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay has confirmed vide letter dated 30.09.2024 that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi-Mechanized Method	
2	Quarry Area	:	2.185 Ha	Life of Mine – 9year
3	Waste Generation	:	50,771cum	
4	Stripping Ratio	:	0.073	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m,	
7	Elevation of Mine	:	98 AMSL	
8	Ground Level Elevation	:	95 AMSL	
9	Ultimate Working Depth	:	58 m AMSL	
10	Water Table	:	Post Monsoon – 45 m AMSL Pre Monsoon – 40 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	76.56 kg Slurry explosives/day	
13	Diesel/Fuel requirement	:	HSD – 426 liters / day (127.8 KL/year)	

Production Details

Years	Production In Cum/Year	Production In Cum/Day	O.B Production in Cum/Year	Production In Tons/Year	Prod. In Tons. /Day
1st	33538	112	19975	97260	324
2nd	49118	164	0.0	142442	475
3rd	80606	269	0.0	233757	779
4th	52644	175	0.0	152668	509
5th	30294	101	15,565	87853	293
Total	**246200**	**269 Max.**	**35540**	**713980**	**779 Max.**

Land Use

Existing Land Use pattern

SL	Pattern	Existing Land Use (Ha)
1	Mining Area	0.00
2	Office	0.00
3	Dumping	0.00
4	Road	0.00
5	Garland drain	0.00
6	Settling Pond	0.00
7	Green belt/ Safety Zone	0.00
8	Utilized	0.00
9	Unutilized	2.185
	TOTAL	**2.185**

Land Use Pattern for Proposed Plan Period:

SL	Pattern	Proposed Land Use (Ha)
1	Mining Area	1.632
2	Office	0.004
3	Dumping	0.000
4	Road	--
5	Garland drain	0.032
6	Settling Pond	0.012
7	Safety Zone	0.493

8	Unutilized	0.012
	TOTAL	**2.185**

Land Use Pattern after Life of the Mine:

SL	Pattern	Conceptual Stage Land Use (Ha)	Area to be converted in the conceptual period.
1	Mining Area	1.632	Water body
2	Office	0.004	Green Belt
3	Dumping	0.000	Green Belt
4	Road	--	Water body
5	Garland drain	0.032	-
6	Settling Pond	0.012	-
7	Safety Zone	0.493	Greenbelt
8	Unutilized	0.012	Greenbelt
	TOTAL	**2.185**	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.55 Ha	900
2	Along Approach Road		0.362km	480
TOTAL				**1,380**

- 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

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
2	Plantation 480 X 1500 = Rs 7,20,000 (Gabion Plantation along approach road) 788 X 500 = 3,94,000 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	11,14,000	1,11,400
3	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs -Rs.32,000 • Soil -Rs.8,000 • Noise 24 hrs - Rs.10,000 **Total -Rs. 50,000 (Per Season)** **At least two season in a Year -Rs. 50,000 x 2 = Rs. 1,00,000**	--	1,00,000
Total		11,14,000	5,11,400

Environment Monitoring Programme

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Surface Water	3 stations	6 Monthly
3.	Noise	3 stations	6 Monthly

Solid Waste Management

During first year19,975cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.

- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken

- Regular water sprinkling on Gaul road by using water Tankers.
- Regular repair of Haul road
- All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading	Very Unlikely	Minor	20

		material, Exposure to Dust			
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted

by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g.reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge

of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

I. Personal protective equipments such as clothing, helmet, safety shoes, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Samlapur Stone Mine of M/s Baba Stone Works (Prop. : Shri Sundaram Pandey), Village : Samlapur, Thana : Hiranpur, Distt. : Pakur, Jharkhand (2.185 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).

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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13. **Belunja Stone Mine of M/s Samleshwari Road Builder (Prop. : Shri Binayak Kumar), Village : Belunja, Thana : Chas, Distt. : Bokaro, Jharkhand (2.07 Ha).**

(Proposal No : SIA/JH/MIN/ 498188/2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 30.09.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.
Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 21,168 Cum. / annum or 59,270 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Belunja Stone Mine	
2	Lessee:	:	Samleshwar Road Builder Proprietor- Shri Binayak Kumar	
3	Lessee Address	:	S/O Late BrajKishor Kumar, R/o B-1, Phase -1, Industrial Area, Near Old U.B.I. Balidih, Bokaro	
4	Lease Area	:	2.07 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital Cost: Rs. 104.83 Lakhs	Recurring Cost: Rs. 9.78 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 13.685 Lakhs	Recurring Cost: Rs. 5.368 Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 1,49,676cum	Tonnes: 4,19,092.8tons
10	Mine Life	:	10 years.	
11	Man power	:	21Person	
12	Water Requirement	:	9.55 KLD (Drinking: 0.315 KLD, Dust Suppression: 4.448KLD, Plantation: 4.791 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	:	Damodar river – 2.72 Km in NW direction	
17	Nearest Habitation	:	Belut Village – 0.797 Km in West direction	

18	Nearest Rail Station	:	Talgaria Railway Station is 6.74 km (aerial distance) in West direction.
19	Nearest Air Port	:	Birsa Munda Airport (Ranchi) at 105.10 km South West direction.
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer NOC. letter no.- 2474 Dated- 08/11/2023
21	Road & Highways	:	A well motorable road is connected to the Mine Site which connects NH-18 at a distance of 6.04 km West Direction (Purulia – Dhanbad).

CO-ORDINATES

Name	Latitude	Longitude
P1	N23° 41' 03.75560880"	E086° 16' 04.76811840"
P2	N23° 41' 03.17216400"	E086° 16' 05.30802120"
P3	N23° 41' 02.12717400"	E086° 16' 06.66001560"
P4	N23° 41' 01.39013880"	E086° 16' 07.55584320"
P5	N23° 41' 00.70083960"	E086° 16' 08.42017080"
P6	N23° 41' 00.54843360"	E086° 16' 09.59718000"
P7	N23° 41' 01.94309520"	E086° 16' 10.49372040"
P8	N23° 41' 02.90642280"	E086° 16' 10.97982120"
P9	N23° 41' 03.39842040"	E086° 16' 09.83074080"
P10	N23° 41' 03.94116360"	E086° 16' 08.70560400"
P11	N23° 41' 04.62636600"	E086° 16' 07.48590960"
P12	N23° 41' 05.00655840"	E086° 16' 07.08990240"
P13	N23° 41' 05.84460240"	E086° 16' 07.25184120"
P14	N23° 41' 06.28460520"	E086° 16' 07.47226560"
P15	N23° 41' 06.06206040"	E086° 16' 08.02476480"
P16	N23° 41' 06.45757440"	E086° 16' 08.66525520"
P17	N23° 41' 06.91667520"	E086° 16' 08.21706600"
P18	N23° 41' 07.16893800"	E086° 16' 07.10765040"
P19	N23° 41' 07.84832280"	E086° 16' 06.37786560"
P20	N23° 41' 08.61237960"	E086° 16' 05.25332280"
P21	N23° 41' 08.04412680"	E086° 16' 04.79825760"
P22	N23° 41' 08.27057040"	E086° 16' 04.17883080"
P23	N23° 41' 06.85609800"	E086° 16' 03.93228120"
P24	N23° 41' 05.50593600"	E086° 16' 05.69129520"
P25	N23° 41' 05.09574840"	E086° 16' 05.45978640"
P26	N23° 41' 04.95381480"	E086° 16' 05.73360600"
P27	N23° 41' 04.35203160"	E086° 16' 05.24672760"

LAND DETAILS

Khata no.	Plot no.
283	830, 831, 832, 834, 835, 843, 844, 845 & 846
101	809 & 836

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Bokaro vide memo no. 1032/Khanan, dated 05.07.2024.
2	CO	:	The CO, Chas (Bokaro) vide letter no. 1404, dated 24.06.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Bokaro vide memo no. 1413/Khanan, dated 25.09.2024 certified that 02 other mining lease area (4.09 Acre & 3.00 Acre) exists within 500 m radius from proposed project site and total area is 12.22 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 2514, dated 16.10.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Bokaro Forest Division vide letter no. 2474, dated 08.11.2023 certified that the distance of notified forest is 600 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Bokaro District (Sl. no. 08).
7	Gram Sabha	:	BDO, Chas (Bokaro) vide letter no. 1485, dated 30.12.2023 informed that Gram Sabha conducted on 15.09.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Bokaro vide Memo No. 1410/M, dated 23.09.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay has confirmed vide letter dated 30.09.2024 that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi-Mechanized Method

2	Quarry Area	:	2.40 Ha	Life of Mine – 8year
3	Waste Generation	:	16,322.6cum	
4	Stripping Ratio	:	0.073	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m,	
7	Elevation of Mine	:	193m–180m AMSL	
8	Ground Level Elevation	:	180 AMSL	
9	Ultimate Working Depth	:	153 m AMSL	
10	Water Table	:	Post Monsoon – 103 m AMSL Pre Monsoon – 100m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	18.48 kg Slurry explosives/day	
13	Diesel/Fuel requirement	:	HSD – 260liters / day (78 KL/year)	

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.
1st	21168	2.8	59270	71	198	7772	26
2nd	19140	2.8	53592	64	179	15546	52
3rd	15300	2.8	42840	51	143	0	0
4th	13416	2.8	37565	45	125	0	0
5th	10296	2.8	28829	34	96	0	0
Total	**79320**	**2.8**	**222096**	**71 Max.**	**198 Max.**	**23318**	**52**

Land Use

Existing Land Use pattern

SL	Pattern	Existing Land Use (Ha)

1	Mining Area	0.00
2	Office	0.00
3	Dumping	0.00
4	Road	0.00
5	Garland drain	0.00
6	Settling Pond	0.00
7	Green belt/ Safety Zone	0.00
8	Utilized	0.00
9	Unutilized	2.073
	TOTAL	**2.073**

Land Use Pattern for Proposed Plan Period:

SL	Pattern	Proposed Land Use (Acres)
1	Mining Area	1.226
2	Office	0.008
3	Dumping	0.61
4	Road	0.028
5	Garland drain	0.036
6	Settling Pond	0.008
7	Safety Zone	0.586
8	Unutilized	0.20
	TOTAL	**2.073**

Land Use Pattern after Life of the Mine:

SL	Pattern	Conceptual Stage Land Use (Acres)	Area to be converted in the conceptual period.
1	Mining Area	1.226	Water body
2	Office	0.008	Green Belt
3	Dumping	0.161	Green Belt
4	Road	0.028	Water body
5	Garland drain	0.036	-
6	Settling Pond	0.008	-
7	Safety Zone	0.586	Greenbelt
8	Unutilized	0.20	Greenbelt
	TOTAL	**2.073**	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.586 Ha	937
2	Along Approach Road		0.991m	660
TOTAL				**1,597**

- 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 600 X 1500 = Rs9,00,000 (Gabion Plantation along approach road) 937 X 500 = 4,68,000 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	13,68,500	1,36,850
3	Environmental Monitoring (One Day Monitoring) • Ambient Air (3 points) 24 hrs - Rs.32,000 • Soil (3point) -Rs.8,000 • Noise (3 points) 24 hrs - Rs.10,000 **Total -Rs. 50,000** **(Per Season)** **At least two season in a Year -Rs. 50,000 x 2 = Rs. 1,00,000**	--	1,00,000
Total		**13,68,500**	**5,36,850**

Environment Monitoring Programme

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Surface Water	3 stations	6 Monthly
3.	Noise	3 stations	6 Monthly

Solid Waste Management

During first year 23,318 cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken

- Regular water sprinkling on Gaul road by using water Tankers.
- Regular repair of Haul road
- All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling

- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g.reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.

- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

I. Personal protective equipments such as clothing, helmet, safety shoes, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Belunja Stone Mine of M/s Samleshwari Road Builder (Prop. : Shri Binayak Kumar), Village : Belunja, Thana : Chas, Distt. : Bokaro, Jharkhand (2.07 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).

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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The meeting concluded with thanks to all present.

01.10.2024

Ashok Kumar Dubey, IFS (Retd.)
Member

01/10/2024

Dr. Ajay Govind Bhatt
Member

Niranjan Lal Agarwalla
Member

Dr. Raju Kumar
Member

01/10/24

Srikant Verma, IFS
Member Secretary

01/10/2024

Ashok Kumar Singh, IFS (Retd.)
Chairman

Annexure – I

I. Statutory compliance

i. This Environmental Clearance (EC) is subject to orders/ judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable.

ii. In the writ petition (Civil) no. 202/1995, T.N. GodavermanThirumulpadvs union of India and ors. theHon'ble Supreme Court passed an order dated 03.06.2022 " National Park or Wildlife Sanctuary must have an ESZ of minimum 01 km in which the activities prescribed and prescribed in the guidelines of 09th February, 2011 shall be strictly adhered to ".

iii. The Project proponent complies with all the statutory requirements and judgement of Hon'ble Supreme Court dated 2nd August,2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India &Ors before commencing the mining operations.

iv. The Hon'ble Supreme Court vide order dated 08.01.2020 in W.P. (Civil) No.114/2014 in the matter of Common Cause vs. Union of India has directed that the area which has been mined should be restored so that grass and other vegetation including trees can grow in the mining area for the benefit of animals.

> *"The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.*

v. The State Government concerned shall ensure that mining operation shall not be commenced till the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of Judgement of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India &Ors.

vi. This Environmental Clearance shall become operational only after receiving formal NBWL Clearance from MoEF&CC subsequent to the recommendations of the Standing Committee of National Board for Wildlife, if applicable to the Project.

vii. This Environmental Clearance shall become operational only after receiving formal Forest Clearance (FC) under the provision of Forest Conservation Act, 1980, if applicable to the Project.

viii. Project Proponent (PP) shall obtain Consent to Operate after grant of EC and effectively implement all the conditions stipulated therein. The mining activity shall not commence prior to obtaining Consent to Establish / Consent to Operate from the concerned State Pollution Control Board/Committee.

ix. The PP shall adhere to the provision of the Mines Act, 1952, Mines and Mineral (Development & Regulation), Act, 2015 and rules & regulations made there under. PP shall adhere to various circulars issued by Directorate General Mines Safety (DGMS) and Indian Bureau of Mines from time to time.

x. The Project Proponent shall obtain consents from all the concerned land owners, before start of mining operations, as per the provisions of MMDR Act, 1957 and rules made there under in respect of lands which are not owned by it.

xi. The Project Proponent shall follow the mitigation measures provided in MoEF&CC's Office Memorandum No. Z-11013/57/2014-IAJI (M), dated 29th October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area".

xii. The Project Proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and from CGWA for withdrawal of ground water for the project.

xiii. A copy of EC letter will be marked to concerned Panchayat / local NGO etc. if any, from whom suggestion / representation has been received while processing the proposal.

xiv. State Pollution Control Board/Committee shall be responsible for display of this EC letter at its Regional office, District Industries Centre and Collector's office/ Tehsildar's Office for 30 days.

xv. The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded EC and copy of the EC letter is available with the State Pollution Control Board/Committee and web site of the Ministry of Environment, Forest and Climate Change (www. Environment clearance.nic.in). A copy of the advertisement may be forwarded to the concerned MoEF& CC Regional Office for compliance and record.

xvi. The Project Proponent shall inform the MoEF&CC for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred than mining operation shall only be carried out after transfer of EC as per provisions of the para 11 of EIA Notification, 2006 as amended from time to time.

II. Air quality monitoring and preservation

i. The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an

angle of 120° is made between the monitoring locations to monitor critical parameters, relevant for mining operations, of air pollution viz. PM10, PM2.5, NO2; CO and SO2 etc. as per the methodology mentioned in NAAQS Notification No. B-29016/20/90/PCUI, dated 18.11.2009 covering the aspects of transportation and use of heavy machinery in the impact zone. The ambient air quality shall also be monitored at prominent places like office building, canteen etc. as per the site condition to ascertain the exposure characteristics at specific places. The above data shall be digitally displayed within 03 months in front of the main Gate of the mine site.

ii. Effective safeguard measures for prevention of dust generation and subsequent suppression (like regular water sprinkling, metalled road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM10 and PM2.5 are evident such as haul road, loading and unloading point and transfer points. The Fugitive dust emissions from all sources shall be regularly controlled by installation of required equipments/ machineries and preventive maintenance: Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEF&CC/ Central Pollution Control Board.

III. Water quality monitoring and preservation

i. In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEF&CC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area.

ii. Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintain. The natural water bodies and or streams which are flowing in an around the village, should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug wall located in village should be incorporated to ascertain the impact of mining over ground water table. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.

iii. Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation

in consultation with Central Ground Water Authority/ State Ground Water Department. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.

iv. The Project Proponent shall undertake regular monitoring of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease and maintain its records. The project proponent shall undertake regular monitoring of water quality upstream and downstream of water bodies passing within and nearby/ adjacent to the mine lease and maintain its records. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. PP shall carryout regular monitoring w.r.t. pH and included the same in monitoring plan. The parameters to be monitored shall include their water quality vis-à-vis suitability for usage as per CPCB criteria and flow rate. It shall be ensured that no obstruction and/ or alteration be made to water bodies during mining operations without justification and prior approval of MoEF&CC. The monitoring of water courses/ bodies existing in lease area shall be carried out four times in a year viz. pre- monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the record of monitored data may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on six-monthly basis.

v. Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off; acid mine drainage and metal contamination in runoff shall be monitored along with Total Suspended Solids (TDS), Dissolved Oxygen (DO), pH and Total Suspended Solids (TSS). The monitored data shall be uploaded on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J- 20012/1/2006-IAJI (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change may also be referred in this regard.

vi. Project Proponent shall plan, develop and implement rainwater harvesting measures on long term basis to augment ground water resources in the area consultation with Central Ground Water Board/ State Groundwater Department. A report on amount of water recharged needs to be submitted to Regional Office MoEF&CC annually.

vii. Industrial waste water (workshop and waste water from the mine) should be properly collected and treated so as to conform to the notified standards prescribed from time to time. The standards shall be prescribed through Consent to Operate (CTO) issued by concerned State Pollution Control Board (SPCB). The

workshop effluent shall be treated after its initial passage through Oil and grease trap.

viii. The water balance/water auditing shall be carried out and measure for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF&CC and State Pollution Control Board/Committee.

IV. Noise and vibration monitoring and prevention

i. The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.

ii. The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day /night hours.

iii. The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The workers engaged in operations of HEMM, etc. should be provided with ear plugs /muffs. All personnel including laborers working in dusty areas shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. The PPshall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.

V. Mining Plan

i. The Project Proponent shall adhere to the working parameters of mining plan which was submitted at the time of EC appraisal wherein year-wise plan was mentioned for total excavation i.e. quantum of mineral, waste, over burden, inter burden and top soil etc.. No change in basic mining proposal like mining technology, total excavation, mineral & waste production, lease area and scope of working (viz. method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode, ultimate depth of mining etc.) shall not be carried out without prior approval of the Ministry of Environment, Forest and Climate Change, which entail adverse environmental impacts, even if it is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form to Short Term Permit (STP), Query license or any other name.

ii. The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance approved from Indian Bureau of Mines/Department of Mining & Geology as required under the Provision of the MMDR Act, 1957 and Rules/ Guidelines made there under. A copy of approved final mine closure plan shall be submitted within 2 months of the approval of the same from the competent

authority to the concerned Regional Office of the Ministry of Environment, Forest and Climate Change for record and verification.

iii. The land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis-à-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self sustaining. The compliance status shall be submitted half-yearly to the MoEF&CC and its concerned Regional Office.

VI. Land reclamation

i. The Overburden (O.B.) generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by D.G.M.S w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of top soil/OB dumps. The topsoil shall be used for land reclamation and plantation.

ii. The reject/waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of the waste dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of waste dumps.

iii. The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.

iv. The slope of dumps shall be vegetated in scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and help in adaptation of plant species to the microclimate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer/ compactors thereby ensuring proper filling/ leveling of dump mass. In critical areas, use of geo textiles/ geo-membranes / clay liners / Bentonite etc. shall be undertaken for stabilization of the dump.

v. The Project Proponent shall carry out slope stability study in case the dump height is more than 30 meters. The slope stability report shall be submitted to concerned regional office of MoEF&CC.

vi. Catch drains, settling tanks and ponds of appropriate size shall be constructed around the mine working, mineral yards and Top Soil/OB/Waste dumps to prevent run off of water and flow of sediments directly into the water bodies (Nallah/ River/ Pond etc.). The collected water should be utilized for watering the mine

area, roads, green belt development, plantation etc. The drains/ sedimentation sumps etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly.

vii. Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining area which shall also help in providing adequate retention time period thereby allowing proper settling of sediments/ silt material. The sedimentation pits/ sumps shall be constructed at the corners of the garland drains.

viii. The top soil, if any, shall temporarily be stored at earmarked site(s) within the mine lease only and should not be kept unutilized for long. The physical parameters of the top soil dumps like height, width and angle of slope shall be governed as per the approved Mining Plan and as per the guidelines framed by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of dumps. The topsoil shall be used for land reclamation and plantation purpose.

VII. Transportation

i. No Transportation of the minerals shall be allowed in case of roads passing through villages/ habitations. In such cases, PP shall construct a 'bypass' road for the purpose of transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers.

ii. The Main haulage road within the mine lease should be provided with a permanent water sprinkling arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipments like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt-

conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.

VIII. Green Belt

i. The Project Proponent shall develop greenbelt in 7.5m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 years starting from windward side of the active mining area. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.

ii. The Project Proponent shall carryout plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall also be adhered. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for protection and care of trees.

iii. The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensate those areas which are coming within the mine lease. The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted.

iv. The Project Proponent shall undertake all precautionary measures for conservation and protection of endangered flora and fauna and Schedule-I species during mining operation. A Wildlife Conservation Plan shall be prepared for the same clearly delineating action to be taken for conservation of flora and fauna. The Plan shall be approved by Chief Wild Life Warden of the State Govt.

v. And implemented in consultation with the State Forest and Wildlife Department. A copy of Wildlife Conservation Plan and its implementation status (annual) shall be submitted to the Regional Office of the Ministry.

IX. Public hearing and human health issues

i. The Project Proponent shall appoint an Occupational Health Specialist for Regular as well as Periodical medical examination of the workers engaged in the mining

activities, as per the DGMS guidelines. The records shall be maintained properly. PP shall also carryout Occupational health check-ups in respect of workers which are having ailments like BP, diabetes, habitual smoking, etc. The check-ups shall be undertaken once in six months and necessary remedial/ preventive measures be taken.. A status report on the same may be sent to MoEF&CC Regional Office and DGMS on half-yearly basis.

ii. The Project Proponent must demonstrate commitment to work towards 'Zero Harm' from their mining activities and carry out Health Risk Assessment (HRA) for identification workplace hazards and assess their potential risks to health and determine appropriate control measures to protect the health and wellbeing of workers and nearby community. The proponent shall maintain accurate and systematic records of the HRA. The HRA for neighborhood has to focus on Public Health Problems like Malaria, Tuberculosis, HIV, Anaemia, Diarrhoea in children under five, respiratory infections due to bio mass cooking. The proponent shall also create awareness and educate the nearby community and workers for Sanitation, Personal Hygiene, Hand washing, not to defecate in open, Women Health and Hygiene (Providing Sanitary Napkins), hazard of tobacco and alcohol use. The Proponent shall carryout base line HRA for all the category of workers and thereafter every five years.

iii. The Proponent shall carry out Occupational health surveillance which be a part of HRA and include Biological Monitoring where practical and feasible, and the tests and investigations relevant to the exposure (e.g. for Dust a X-Ray chest; For Noise Audiometric; for Lead Exposure Blood Lead, For Welders Full Ophthalmologic Assessment; for Manganesé Miners a complete Neurological Assessment by a Certified Neurologist, and Manganese (Mn) Estimation in Blood; For Inorganic Chromium- Fortnightly skin inspection of hands and forearms by a responsible person. Except routine tests all tests would be carried out in a Lab accredited by NABH. Records of Health Surveillance must be kept for 30 years, including the results of and the records of Physical examination and tests. The record of exposure due to materials like Asbestos, Hard Rock Mining, Silica, Gold, Kaolin, Aluminium, Iron, Manganese, Chromium, Lead, Uranium need to be handed over to the Mining Department of the State in case the life of the mine is less than 30 years. It would be obligatory for the State Mines Departments to make arrangements for the safe and secure storage of the records including X-Ray. Only conventional X-Ray will be accepted for record purposes and not the digital one). X-Ray must meet ILO criteria (17 x14 inches and of good quality).

iv. The Proponent shall maintained a record of performance indicators for workers which includes (a) there should not be a significant decline in their Body Mass Index and it should stay between 18.5 -24.9, (b) the Final Chest X-Ray compared with the base line X-Ray should not show any capacities ,(c) At the end of their leaving job there should be no Diminution in their Lung Functions Forced Expiratory Volume in one second (FEV1),Forced Vital Capacity (FVC), and the ratio)

unless they are smokers which has to be adjusted, and the effect of age, (d) their hearing should not be affected. As a proof an Audiogram (first and last need to be presented), (e) they should not have developed any Persistent Back Pain, Neck Pain, and the movement of their Hip, Knee and other joints should have normal range of movement, (f) they should not have suffered loss of any body part. The record of the same should be submitted to the Regional Office, MoEF&CC annually along with details of the relief and compensation paid to workers having above indications.

v. The Project Proponent shall ensure that Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.

vi. Project Proponent shall make provision for the housing for workers/labors or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project related infrastructure. The domestic waste water should be treated with STP in order to avoid contamination of underground water.

vii. The activities proposed in Action plan prepared for addressing the issues raised during the Public Hearing shall be completed as per the budgetary provisions mentioned in the Action Plan and within the stipulated time frame. The Status Report on implementation of Action Plan shall be submitted to the concerned Regional Office of the Ministry along with District Administration.

X. Corporate Environment Responsibility (CER)

i. The activities and budget earmarked for Corporate Environmental Responsibility (CER) as per Ministry's O.M No 22-65/2017-IA. II (M) dated 01.05.2018 or as proposed by EAC should be kept in a separate bank account. The activities proposed for CER shall be implemented in a time bound manner and annual report of implementation of the same along with documentary proof viz. photographs, purchase documents, latitude & longitude of infrastructure developed & road constructed needs to be submitted to Regional Office MoEF&CC annually along with audited statement.

ii. Project Proponent shall keep the funds earmarked for environmental protection measures in a separate account and refrain from diverting the same for other purposes. The Year wise expenditure of such funds should be reported to the MoEF&CC and its concerned Regional Office.

XI. Miscellaneous

i. The Project Proponent shall prepare digital map (land use & land cover) of the entire lease area once in five years purpose of monitoring land use pattern and submit a report to concerned Regional Office of the MoEF&CC.

ii. The Project Authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.

iii. It shall be mandatory for the project management to submit six (06) monthly compliance report in respect of the stipulated prior environmental clearance terms and conditions in hard copies and soft copies to the regulatory authority concerned Regional Office of MoEF& CC at Ranchi and Jharkhand State Pollution Control Board (J.S.P.C.B.), Ranchi / CPCB / SEIAA.

iv. A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEF&CC.

v. The concerned Regional Office of the MoEF&CC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEF&CC officer(s) by furnishing the requisite data / information / monitoring reports.

vi. Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.

vii. The Ministry / SEIAA / SEAC may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

viii. The Ministry / SEIAA / SEAC reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.

ix. The Environmental Clearance accorded shall be valid for the period of lease of the mine. The PP shall not increase production rate and alter lease area during the validity of Environmental Clearance

x. Any appeal against this Environmental Clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under section 16 of the National Green Tribunal Act, 2010.

Annexure - II

The TORs prescribed for undertaking detailed EIA study are as follows:

i. Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.

ii. A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.

iii. All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.

iv. All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).

v. Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.

vi. Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.

vii. It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.

viii. Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.

ix. The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.

x. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.

xi. Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.

xii. A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.

xiii. Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.

xiv. Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.

xv. The vegetation in the RF / PF areas in the study area, with necessary details, should be given.

xvi. A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.

xvii. Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.

xviii. A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and

buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled- I fauna found in the study area, the necessary plan alongwith budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.

xix. Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.

xx. Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL. HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).

xxi. R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.

xxii. One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)]primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.

xxiii. Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input

parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.

xxiv. The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.

xxv. Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.

xxvi. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.

xxvii. Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.

xxviii. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.

xxix. Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.

xxx. Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.

xxxi. A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.

xxxii. Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road

network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.

xxxiii. Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.

xxxiv. Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.

xxxv. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.

xxxvi. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.

xxxvii. Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.

xxxviii. Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.

xxxix. Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.

xl. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.

xli. The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.

xlii. A Disaster management Plan shall be prepared and included in the EIA/EMP Report.

xliii. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.

xliv. Besides the above, the below mentioned general points are also to be followed :-

a) Executive Summary of the EIA/EMP Report

b) All documents to be properly referenced with index and continuous page numbering.

c) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.

d) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF & CC / NABL accredited laboratories. All the original analysis / testing reports should be available during appraisal of the Project.

e) Where the documents provided are in a language other than English, an English translation should be provided.

f) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.

g) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF& CC vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.

h) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF & CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.

i) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.

j) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

xlv. After preparing the draft EIA (as per the generic structure prescribed in Appendix- III of the EIA Notification, 2006) covering the above mentioned issues, the proponent will get the public hearing conducted and take further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.

xlvi. The Prescribed ToRs is valid as per O.M. F. No. IA3-22/10/2022-IA.III[E177258], dated 08.06.2022 of MoEF&CC, Govt. of India.

Standard EC condition

I. Statutory compliance

i. 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.

ii. The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.

iii. The project proponent shall prepare a Site-Specific Conservation Plan & Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan / Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report. (in case of the presence of schedule-I species in the study area)

iv. In the writ petition (Civil) no. 202/1995, T.N. Godaverman Thirumulpad vs union of India and ors. the Hon'ble Supreme Court passed an order dated 03.06.2022 " National Park or Wildlife Sanctuary must have an ESZ of minimum 01 km in which the activities prescribed and prescribed in the guidelines of 09th February, 2011 shall be strictly adhered to ".

v. The project proponent shall obtain 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.

vi. The project proponent shall obtain the necessary permission from the Central Ground Water Authority, in case of drawl of ground water / from the competent authority concerned in case of drawl of surface water required for the project.

vii. The project proponent shall obtain authorization under the Hazardous and other Waste Management Rules, 2016 as amended from time to time.

II. Air quality monitoring and preservation

i. The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission with respect to standards prescribed in Environment (Protection) Rules 1986 vide G.S.R. no. 612 (E) dated 25 August, 2014 (Cement) and subsequent amendment dated 9th May, 2016 (Cement) and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognised under Environment (Protection) Act, 1986 or NABL accredited laboratories.

ii. The project proponent shall monitor fugitive emissions in the plant premises at least once in every quarter through labs recognised under Environment (Protection) Act, 1986.

iii. The project proponent shall install system carryout to Ambient Air Quality monitoring for common / criterion parameters relevant to the main pollutants released (e.g. PM10 and PM2.5 in reference to PM emission, and SO2 and NOx in reference to SO2 and NOx emissions) within and outside the plant area at least at four locations (one within and three outside the plant area at an angle of 120^0 each), covering upwind and downwind directions. (case to case basis small plants: Manual; Large plants: Continuous)

iv. The project proponent shall submit monthly summary report of continuous stack emission and air quality monitoring and results of manual stack monitoring and manual monitoring of air quality / fugitive emissions to Regional Office of MoEF&CC, Zonal office of CPCB and Regional Office of SPCB along with six- monthly monitoring report.

v. Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed stack emission and fugitive emission standards.

vi. The project proponent shall provide leakage detection and mechanised bag cleaning facilities for better maintenance of bags.

vii. Pollution control system in the cement plant shall be provided as per the CREP Guidelines of CPCB.

viii. Sufficient number of mobile or stationery vacuum cleaners shall be provided to clean plant roads, shop floors, roofs, regularly.

ix. Ensure covered transportation and conveying of raw material to prevent spillage and dust generation; Use closed bulkers for carrying fly ash.

x. Provide wind shelter fence and chemical spraying on the raw material stock piles; and

xi. Have separate truck parking area and monitor vehicular emissions at regular interval.

xii. Efforts shall be made to reduce impact of the transport of the raw materials and end products on the surrounding environment including agricultural land by the use of covered conveyor belts/railways as a mode of transport

xiii. Ventilation system shall be designed for adequate air changes as per ACGIH

Document for all tunnels, motor houses, cement bagging plants

III. Water quality monitoring and preservation

i. The project proponent shall install effluent monitoring system with respect to standards prescribed in Environment (Protection) Rules 1986 vide G.S.R. No. 612 (E) dated 25th August, 2014 (Cement) and subsequent amendment dated 9th May, 2016 (Cement) and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification

through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories. (case to case basis small plants: Manual; Large plants: Continuous)

ii. The project proponent shall monitor regularly ground water quality at least twice a year (pre and post monsoon) at sufficient numbers of piezometers/sampling wells in the plant and adjacent areas through labs recognised under Environment (Protection) Act, 1986 and NABL accredited laboratories.

iii. The project proponent shall submit monthly summary report of continuous effluent monitoring and results of manual effluent testing and manual monitoring of ground water quality to Regional Office of MoEF&CC, Zonal office of CPCB and Regional Office of SPCB along with six-monthly monitoring report.

iv. Adhere to 'Zero Liquid Discharge'.

v. Sewage Treatment Plant shall be provided for treatment of domestic wastewater to meet the prescribed standards.

vi. Garland drains and collection pits shall be provided for each stock pile to arrest the run-off in the event of heavy rains and to check the water pollution due to surface run off

vii. The project proponent shall practice rainwater harvesting to maximum possible extent.

viii. Water meters shall be provided at the inlet to all unit processes in the cement plant.

ix. The project proponent shall make efforts to minimise water consumption in the cement plant complex by segregation of used water, practicing cascade use and by recycling treated water.

IV. Noise monitoring and prevention

i. 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.

ii. The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time

V. Energy Conservations measures

i. Provide solar power generation on rooftops of buildings, for solar light system for all common areas, street lights, parking around project area and maintain the same regularly.

ii. Provide the project proponent for LED lights in their offices and residential areas.

iii. Maximize utilization of fly ash, slag and sweetener in cement blend as per BIS Standards.

VI. **Waste management**

i. The waste oil, grease and other hazardous shall be disposed of as per the Hazardous & other waste (Management & Trans boundary Movement) Rules, 2016.

ii. Kitchen waste shall be composted or converted to biogas for further use. *(to be decided on case to case basis depending on type and size of plant)*

VII. **Green Belt**

i. Green belt shall be developed in an area equal to 33% of the plant area with a native tree species in accordance with CPCB guidelines. The greenbelt shall inter alia cover the entire periphery of the plant

ii. The project proponent shall prepare GHG emissions inventory for the plant and shall submit the program for reduction of the same including carbon sequestration including plantation.

VIII. **Public hearing and Human health issues**

i. Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.

ii. The PP shall provide Personal Protection Equipment (PPE) as per the norms of factory Act.

iii. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

iv. Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.

IX. **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 approve 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.

v. Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

vi. All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the cement plants shall be implemented.

X. Miscellaneous

i. The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.

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 monitor the criteria pollutants level namely; PM_{10}, SO_2, NO_x (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.

v. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.

vi. 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.

vii. 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.

a. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.

b. 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.

viii. 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).

ix. 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.

x. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

xi. The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.

xii. The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.

xiii. 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 Trans boundary 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.

xiv. Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010

xv. The Prescribed EC is valid as per Notification no. S.O. 1807(E) dated 12.04.2022 of MoEF&CC, Govt. of India.