MINUTES OF THE 112TH MEETING OF STATE LEVEL EXPERT APPRAISAL COMMITTEE (SEAC), JHARKHAND HELD ON 16TH , 17TH, 18TH and 19TH MAY, 2024.

The 112th meeting of State Level Expert Appraisal Committee (SEAC), Jharkhand was held on 16th , 17th, 18th and 19th May, 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 26th, 27th, 28th, 29th & 30th April, 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 : May 16th, 2024 [Thursday]

❖ **<u>The old proposal being processed in PARIVESH 1.0</u>**

A. Corrigendum EC letter for :

i. Pindargaria Stone Deposit of Shri Ravindra Nath Chand at J.B. no. 03, Plot no. 33 at Village : Pindargaria, Thana : Gopikandar, Distt. : Dumka, Jharkhand (2.50 Ha).

(Proposal No. SIA/JH /MIN /305714/2023).

The PA's vide online application no. **SIA/JH /MIN /305714/2023** has requested for necessary correction in Environmental Clearance issued vide letter no. EC/SEIAA/2021-22/2355/2021/32, dated 14.07.2021 with regard to mention in **production in Cum and Tonnes**, the revised details is being given below :

Year	Production of Stone (in Cum)	Production of Stone (in tonne)
1st	72,876	2,18,628
2nd	72,881	2,18,643
3rd	72,877	2,18,631
4th	72,870	2,18,610
5th	72,740	2,18,220

The SEAC considered the same and recommends for issuance of corrigendum EC with corrected details as stated above. Rest other terms & conditions mentioned in the previous EC letter no. EC/SEIAA/2021-22/2355/2021/32, dated 14.07.2021 shall remain the same.

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ii. **Sugapahari Stone Deposit of Shri Ravindra Nath Chand at J.B. no. 20, Plot no. 7 (P) at Village : Sugapahari, Thana : Gopikandar, Distt. : Dumka, Jharkhand (2.69 Ha).**

(Proposal No. SIA/JH /MIN /305432/2023).

The PA's vide online application no. **SIA/JH /MIN /305432/2023** has requested for necessary correction in Environmental Clearance issued vide letter no. EC/SEIAA/2021-22/2354/2021/26, dated 14.07.2021 with regard to mention in **production in Cum and Tonnes**, the revised details is being given below :

Year	Production of Stone (in Cum)	Production of Stone (in tonne)
1st	1,02,802	3,08,406
2nd	1,02,848	3,08,544
3rd	1,02,885	3,08,655
4th	1,02,858	3,08,574
5th	1,02,858	3,08,574

The SEAC considered the same and recommends for issuance of corrigendum EC with corrected details as stated above. Rest other terms & conditions mentioned in the previous EC letter no. EC/SEIAA/2021-22/2354/2021/26, dated 14.07.2021 shall remain the same.

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B. Consideration of proposals

1. **Brick Soil Mining for M/s Hero Bricks, Village : Barchorgain, Thana : Kisko, Thana no. : 88, Distt. : Lohardaga, Jharkhand (0.52 Ha).**

(Proposal No : SIA/JH/MIN/ 470139/2024)

The PAs vide E-mail dated 16.05.2024 requested for deferment of proposal. This proposal was also listed in 111th meeting and was deferred on the request of the PAs. The Committee accepted the request for deferment and it will be condition that no further request for deferment beyond the next meeting. Accordingly, the project will be recommended for delisting if PAs fail to appear in the next meeting.

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2. **Haripur Sand Deposit of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Haripur, Anchal : Dumka, Distt. : Dumka, Jharkhand (2.39 Ha).**

(Proposal No : SIA/JH/MIN/ 471760/2024)

Project Category: **B2 – Application for Environment Clearance.**
EC Application for: **Proposed Capacity- 20865 cum/annum or 34010 TPA (dry basis).**

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

This is a new project which has been taken for appraisal on 16.05.2024.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Haripur Sand Deposit	
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	:	2.39 Ha	Acres – 5.9058 Acres
5	Type of Land	:	Non-Forest Government waste Land (River Bed)	
6	Project Cost	:	Rs 12.58 Lakhs	
7	EMP Budget	:	Capital: Rs 1.58 Lakhs	Recurring: 2.70 lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 61646 cum (for five years)	Tonnes: 100482 tonnes (dry basis)
10	Mine Life	:	Upto 15.08.2025 or As per provisions of Jharkhand State Sand Mining Policy 2017 & its amendment.	
11	Man power	:	40	
12	Water Requirement	:	5.20 KLD (Drinking: 1 KLD, Industrial: 2.16 KLD, Plantation: 1.44 KLD, Flushing – 0.60 KLD)	
13	Water Source	:	By authorised hired tankers	
14	DG Set / power	:	NA	
15	Crusher	:	NA	
16	Nearest Water Body	:	On Mayurakshi River bed sand mining is proposed.	
17	Nearest Habitation	:	Haripur, at 1.3 KM in South-East direction.	
18	Nearest Rail Station	:	New Madanpur Railway station, at a distance of 13.3 km towards North-East direction	
19	Nearest Air Port	:	Deoghar Airport, at a distance of 70 km towards West direction.	
20	Nearest Forest	:	2.695 KM as per DFO certificate issued vide Letter no. 510 dated	

			: 22/02/2023.
21	Road & Highways	:	NH – 114A, at a distance of 725 m towards East direction. From the river bank to NH 114 A, there is an existing road.

CO-ORDINATES

1	Latitude		From N24°18'15.222"	To N24°18'27.612"
2	Longitude		From E87°12'56.714"	To E87°12'58.866"

LAND DETAILS

Khata no.	Plot no.
40	755, 522, 822 & 1

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, Dumka Sadar vide letter no. 1142/Ra, dated 23.12.2022 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Dumka vide memo no. 566/M, dated 06.05.2024 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribagh vide letter no. 563, dated 23.03.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Dumka Forest Division vide letter no. 510, dated 22.02.2023 certified that the distance of forest land is 2696 meter from proposed project site.
6	DSR	:	This project is mentioned in approved District Survey Report (DSR) of Dumka District (Sl. no. 11, Page no. 81).
7	Gram Sabha	:	Gram Sabha conducted on 12.03.2024.

8	Mine Plan Approval	:	Approved by Deputy Director Mines, Santhal Pargana Circle, Dumka vide Memo No. 38/DDM, dated 16.02.2024.
9	Qualified Person	:	Shri Vidya Bhusan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Manual Method	
2	Quarry Area	:	2.39 Ha	Life of Mine – upto 15/08/2025 as per provisions of Jharkhand State Sand Mining Policy 2017 & its amendment.
3	Waste Generation	:	00 cum	
4	Stripping Ratio	:	0:0	
5	Working Days	:	200 per year	
6	Benches: size & No	:	1.5m and no. of bench 1.	
7	Elevation of Mine	:	104 m AMSL to 108m AMSL	
8	Ground Level Elevation	:	102 m AMSL to 108 m AMSL	
9	Ultimate Working Depth	:	102.5 m AMSL	
10	Water Table	:	98 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	None. No blasting required	
13	Diesel/Fuel requirement	:	Not required for mining.	

Production Details

Year	Production of Sand (cum)	Production of Sand(tonnes) On dry basis	Bench RL in Meters
1st	20865	34010	NA

The development plan submitted along with the mining plan relates to mining operation during the first year.

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	Conceptual stage (Ha) (after life of mine)
Excavation	0.0	1.391	1.391
Road	0.0	0.00	0.00
Safety Zone	0.0	0.999	0.999

Total Area in Use	**0.0**	**0.999**	**0.999**
Unused Area	2.39	1.391	1.391
Total Applied Area	**2.39**	**2.39**	**2.39**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.999 ha	00
2	Along Approach Road		1.8 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.

Solid Waste Management

No solid waste is generated during the course of mining.

Water Quality Management

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

Air Quality Management

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

I. **Operation of Diesel Equipment's –** They generate Noxious gases. It will be ensured that all transport vehicles would be repaired & maintained regularly.
II. **Loading of Product on tippers –** Water will be sprinkled on blasted Sand mass before they are loaded to trucks for transport.
III. **Movement of tippers on Road –** Movement of tippers on road generate dust. For mitigation of this pollution following measures will be taken
   - ✓ Regular water sprinkling on Haul road by using water tankers.
   - ✓ Regular repair of Haul road
   - ✓ All Trucks carrying Sand outside lease area will have PUC certificate.
   - ✓ Transport tippers/traders moving on public road will be covered with tarpaulin.

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

Road accidents

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

Preventive Measures;

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

Dust generation

No drilling involved

- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

Noise Generation

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

Preventive measures

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

Health Hazards

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

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. 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 NH 114 A will be done using the existing road.
n. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
o. Wet sand will not be transported.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Haripur Sand Deposit of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Haripur, Anchal : Dumka, Distt. : Dumka, 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. 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.
II. 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.
III. 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.
IV. 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.

V. 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.

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

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

VIII. 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.

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

X. 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.

XI. 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.

XII. 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.

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

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

XV. 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.

XVI. 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.

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

XVIII. No labour camp shall be allowed in riverbed.

XIX. 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.

XX. 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.

XXI. 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.

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

XXIII. 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.

XXIV. 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.

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

XXVI. 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.

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

XXVIII. 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.

XXIX. 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.

XXX. 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 and decided by regulatory authority while granting Environmental Clearance in consultation with irrigation department. 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. **Bandua Stone Deposit of M/s Lotus Minerals (Partners : Shri Manoj Kumar & Shri Sanjay Kumar Pandey), Village : Bandua, Thana : Manika, Distt. : Latehar, Jharkhand (2.46 Ha).**

(Proposal No : SIA/JH/MIN/ 472048/2024)

Project Category: **B2 – Application for Environment Clearance**
EC Application for: **Proposed Capacity- 44187 cum/annum or 123723 TPA**

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

This is a new project which has been taken for appraisal on 16.05.2024.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Bandua Stone Deposit	
2	Lessee:	:	M/s Lotus Minerals (Partners - Sri Manoj Kumar and Sri Sanjay Kumar Pandey	
3	Lessee Address	:	M/s Lotus minerals Partner 1) Sri Manoj Kumar At – Vindhyachal Bhavan, Church Road, Ward No. – 21, Daltonganj, District – Palamu, State – Jharkhand, PIN code – 822101. 2) Sri Sanjay Kumar Pandey, At – Church Road, Ward No. – 21, Daltonganj, District – Palamu, Jharkhand, PIN Code - 822101	
4	Lease Area	:	2.46 Ha	Acres- 6.09 Acre
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost	:	Rs. 23,09,550 (capital) & Rs. 21,45,850 (recurring)	
7	EMP Budget	:	Capital: 14,55,800.00	Recurring: 8,59,300.00 per year
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 220738 cum	Tonnes: 618067 tons
10	Mine Life	:	4 Years 11 Months	
11	Man power	:	41	
12	Water Requirement	:	19.09 KLD (Drinking: 1.65 KLD, Industrial: 1 KLD, Plantation: 16.44KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	-	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Kaharibighwa nadi is situated at a distance of 1.10 km in north direction.	
17	Nearest Habitation	:	Manika, at 6.5 KM in South-West direction.	

18	Nearest Rail Station	:	Kumendi Railway station, approx. 4.53 km towards South direction
19	Nearest Air Port	:	Birsa Munda Airport, approx. 115 km towards SE direction.
20	Nearest Forest	:	2.5 km in South – West direction
21	Road & Highways	:	NH - 39, Approx. 7.70 km towards South-West direction.

CO-ORDINATES

1	Latitude		From N23°54'28.93313"	To N23°54'36.54988"
2	Longitude		From E84°24'03.45668"	To E84°24'11.29954"

LAND DETAILS

Khata no.	Plot no.
308	208 (P), 213, 216 & 235
226	210 (P)
189	212

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LOI) has been issued by District Mining Officer, Latehar vide letter no. 221/M, dated 10.03.2022.
2	CO	:	The CO, Manika vide letter no. 417, dated 23.09.2021 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan.
3	DMO	:	DMO, Latehar vide memo no. 83/M, dated 01.02.2024 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	Deputy Director, Palamau Tiger Project, North Division vide letter no. : 368, dated 21.04.2022 certified that the proposed project site is outside Eco Sensitive Zone of Palamu Wildlife Sanctuary, Betla National Park and Mahuadanr Wolf Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Latehar Forest Division vide letter no. 1963, dated 11.12.2021 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 Latehar District (Sl. no. 10, Page no. 53).

7	Gram Sabha	:	Gram Sabha conducted on 24.12.2021.
8	Mine Plan Approval	:	Approved by District Mining Officer, Latehar vide Letter No. 1121/M, dated 07.11.2023.
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 other than fully mechanized (OTFM) Method	
2	Quarry Area	:	2.46 Ha / 6.09 Acres	Life of Mine – 4 years 11months
3	Waste Generation	:	11619 cum	
4	Stripping Ratio	:	0.05:01	
5	Working Days	:	300	
6	Benches: size & No	:	6m to 6m	
7	Elevation of Mine	:	394 AMSL to 364AMSL	
8	Ground Level Elevation	:	394 AMSL m RL to 388 AMSL m RL	
9	Ultimate Working Depth	:	364 AMSL	
10	Water Table	:	352 AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	63 kg/day (by external approved agencies)	
13	Diesel/Fuel requirement	:	400 litre/day (No storage within the premises)	

Production Details

Year	Production of stone (cum)	Production of stone (tons)	Bench RL in Meters
1st	44175	123690	394mRL - 382 mRL
2nd	44147	123613	382mRL - 376mRL
3rd	44137	123586	382mRL - 376mRL
4th	44187	123723	382mRL - 394mRL
5th	44089	123451	394mRL - 364mRL
Total	**220735**	**618063**	

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	Conceptual stage (Ha) (after life of mine)
Excavation	0.0	1.54(including backfilling 0.178 Ha)	1.46 Water Body 0.08 Dead bench Plantation

Waste Dump	0.0	0.	Nil (waste dump to be removed and backfilled)
Road	0.05	0.004	0.0
Infrastructure (Crusher)	0.0	0.00	-
Safety Zone	0.0	0.92 (Plantation)	0.92 (Plantation)
Total Area in Use	**0.05**	**2.46**	**2.46**
Unused Area	2.41	0.00	0.00
Total Applied Area	**2.46**	**2.46**	**2.46**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.92 ha	3450 (3 rows plantation)
2	Along Approach Road	0.55 km	736 (2 rows plantation)
TOTAL			**4186**

- 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

During first, second, third and fourth year gritty soil & intercalated waste will be removed (17385 m^3) this soil and waste will be temporarily backfill within the exhausted quarry and in fifth year (2321 m^3) removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

Water Quality Management

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.

a. Controlled blasting would be practiced
b. Optimum quantity of explosives would be used.
c. 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
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Drilling Operations

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

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

Falls from the edge of a bench

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

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

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

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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 Bandua Stone Deposit of M/s Lotus Minerals (Partners : Shri Manoj Kumar & Shri Sanjay Kumar Pandey), Village : Bandua, Thana : Manika, Distt. : Latehar, Jharkhand (2.46 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. **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.**
II. **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.**
III. **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.**
IV. **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.**
V. **Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.**
VI. **Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.**

****

4. **Khutri Stone Deposit of M/s Bhairavi Stone (Partners : Shri Krishna Kumar Dangi & Shri Prakritesh Chandrawanshi), Village : Khutri, Tehsil : Khutri, Thana : Jaridih, Distt. : Bokaro, Jharkhand (1.01 Ha).**

(Proposal No : SIA/JH/MIN/ 471689/2024)

Project Category: **B2 – Application for Environment Clearance**
EC Application for: **Proposed Capacity- 16027.15 cum / annum or 44876.01 TPA**

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

This is a new project which has been taken for appraisal on 16.05.2024.

Project and Location Details :

Sl	Parameter		Details	
1	Project Name	:	Khutri Stone Deposit	
2	Lessee:	:	M/s M/s Bhairavi Stone (Partners – Sri Krishna Kumar Dangi and Sri Prakritesh Chandrawanshi	
3	Lessee Address	:	M/s M/s Bhairavi Stone Partner 1) Sri Krishna Kumar Dangi At – Near Dabhatu Mansa Mandir, P.O. – Kumhardanga, P.S. – Gola, District – Ramgarh, Jharkahand 2) Sri Prakritesh Chandrawanshi, At – Near Block, Hermadga, P.O. – Chari, P.S. – Gola, District – Ramgarh, Jharkahand, PIN CODE - 829110	
4	Lease Area	:	1.01 Ha	Acres- 2.50 Acre
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost	:	Rs. 14,02,500.00 (capital) & Rs. 17,55,00.00 (recurring)	
7	EMP Budget	:	Capital: Rs. 6,42,500.00	Recurring: Rs. 4,23,750.00 per year
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 80118.25 cum	Tonnes: 224331.10 tons
10	Mine Life	:	4 Years 11 Months	
11	Man power	:	28	
12	Water Requirement	:	12.11 KLD (Drinking: 1.12 KLD/day, Industrial: 5 KLD/day, Plantation: 5.90 KLD/day)	
13	Water Source	:	By authorised hired water tankers	
14	DG Set / power	:	-	
15	Crusher	:	No crusher	

16	Nearest Water Body	:	Kaharibighwa nadi is situated at a distance of 1.10 km in north direction.
17	Nearest Habitation	:	Khutri, at 1.2 Km in South-East direction.
18	Nearest Rail Station	:	Tupkadih Railway station, approx. 3.0 km towards East direction
19	Nearest Air Port	:	Birsa Munda Airport, approx. 84 km towards South-West direction.
20	Nearest Forest	:	2.5 km in South – West direction
21	Road & Highways	:	NH - 23, Approx. 4.1 km towards South direction.

CO-ORDINATES

1	Latitude		From N23°42'32.13090"	To N23°42'37.57014"
2	Longitude		From E86°02'05.49845"	To E86°02'08.64726"

LAND DETAILS

Khata no.	Plot no.
13	196 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LOI) has been issued by District Mining Officer, Bokaro vide memo no. 96 / Khanan, dated 12.01.2022.
2	CO	:	The CO, Jaridih (Bokaro) vide letter no. 641, dated 12.08.2021 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan.
3	DMO	:	DMO, Bokaro vide memo no. 386/Khanan, dated 08.03.2022 certified that 01 other mining lease area (2.45 Acre) exists within 500 m radius from proposed project site and total area is less than 5 Ha.
4	DFO Wild Life	:	DFO, Wildlife Hazaribagh vide letter no. : 1811, dated 25.10.2021 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Forest	:	Division Forest Officer, Bokaro Forest Division vide letter no. 2926, dated 22.10.2021 certified that the distance of reserved / protected

	Distance		forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved District Survey Report (DSR) of Bokaro District (Sl. no. 17, Page no. 67).
7	Gram Sabha	:	BDO, Jaridih (Bokaro) vide letter no. 1251, dated 12.09.2023 informed that Gram Sabha conducted on 07.09.2021.
8	Mine Plan Approval	:	Approved by District Mining Officer, Bokaro vide Memo No. 1787/M, dated 18.10.2023.
9	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast other than fully mechanized (OTFM) Method	
2	Quarry Area	:	1.01 Ha / 2.50 Acres	Life of Mine – 4 years 11 months
3	Waste Generation	:	4216.74 cum	
4	Stripping Ratio	:	0.05:01	
5	Working Days	:	300	
6	Benches: size & No	:	6m to 6m	
7	Elevation of Mine	:	255 m AMSL to 231 m AMSL	
8	Ground Level Elevation	:	255 m AMSL to 253 m AMSL	
9	Ultimate Working Depth	:	225 m AMSL	
10	Water Table	:	210 m AMSL (Post Monsoon)	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	31.5 kg/day	
13	Diesel/Fuel requirement	:	300 litre/day	

Production Details

Year	Production of stone (cum)	Production of stone (tons)	Bench RL in Meters
1st	16026.50	44874.20	255-249
2nd	16027.15	44876.01	255-243
3rd	16022.99	44864.36	249-243
4th	16022.42	44862.76	255-237
5th	16018.95	44853.05	243-231

Total	**80118.01**	**224330.38**	

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	Conceptual stage (Ha) (after life of mine)
Excavation	0.0	0.67 (including backfilling 0.92 Ha)	0.67 (shall be left as water reservoir).
Waste Dump	0.00	0.00	Nil (waste dump to be removed and backfilled)
Road	0.06	0.00	0.00
Infrastructure (Crusher)	0.00	0.00	-
Low lying area	0.03	-	-
Safety Zone	0.0	0.34 (Plantation)	0.34 (Plantation)
Total Area in Use	**0.09**	**1.01**	**1.01**
Unused Area	0.92	0.00	0.00
Total Applied Area	**1.01**	**1.01**	**1.01**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.34 ha	1275 (3rows plantation)
2	Along Approach Road		0.150 km	200 (2 rows plantation)
Total				**1475**

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

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

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The 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 Khutri Stone Deposit of M/s Bhairavi Stone (Partners : Shri Krishna Kumar Dangi & Shri Prakritesh Chandrawanshi), Village : Khutri, Tehsil : Khutri, Thana : Jaridih, Distt. : Bokaro, Jharkhand (1.01 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. 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.

II. 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.

III. 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.

IV. 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.

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

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

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5. **Expansion of DRI plant from 100 TPD to 190 TPD by M/s Niranjan Metallic Limited at Village : Gadi Srirampur, Tehsil : Giridih, Distt. : Giridih, Jharkhand.**

(Proposal No : SIA/JH/IND1/ 472779/2024)

The PAs vide letter dated 16.05.2024 requested for deferment of proposal. The Committee accepted the request for deferment.

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Day 2 : May 17th, 2024 [Friday]

Consideration of proposals

1. **Bankhet Sand Ghat of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Bankhet, Thana no. : 53, Thana : Nala, Distt. : Jamtara, Jharkhand (4.91 Ha).**

   (Proposal No : SIA/JH/MIN/ 472596/2024)

   Project Category: **B2 – Application for Environment Clearance.**
   EC Application for: **Proposed Capacity- 85,862.19 cum/annum or 1,43,390 TPA .**

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

   This is a new project which has been taken for appraisal on 17.05.2024.

   Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Bankhet Sand Ghat	
2	Lessee:	:	M/s Jharkhand State Mineral Development Corporation Ltd. (A Govt. of Jharkhand Enterprises)	
3	Lessee Address	:	Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand)	
4	Lease Area	:	4.91 Ha	Acres – 12.13 Acres
5	Type of Land	:	Non-Forest Government waste Land (River Bed)	
6	Project Cost	:	Capital Cost - Rs 12.20 Lakhs	Recurring : 32.00 Lakhs / Year
7	EMP Budget	:	Capital: Rs 4.94 Lakhs	Recurring: 5.606 lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 85,862.19 cum (for five years)	Tonnes: 1,43,389.86 tonnes
10	Mine Life	:	Upto 15.08.2025 or as per provisions of Jharkhand State Sand Mining Policy 2017 & its amendment.	
11	Man power	:	52	
12	Water Requirement	:	14.604 KLD (Drinking: 0.78 KLD, Dust Suppression: 11.4 KLD, Plantation: 2.424 KLD)	
13	Water Source	:	By authorised hired tankers	
14	DG Set / power	:	NA	
15	Crusher	:	NA	
16	Nearest Water Body	:	On Ajay River bed sand mining is proposed.	
17	Nearest	:	Bankhet, at 0.40 KM in North-East direction.	

	Habitation		
18	Nearest Rail Station	:	Chittranjan Railway Station- 13.98 km in W direction
19	Nearest Air Port	:	Kazi Nazrul Islam Airport, Durgapur -35 km in SE direction
20	Nearest Forest	:	More than 250 m, as per Forest Division. Letter No. – 331, Dated - 10-03-2023
21	Road & Highways	:	Nearest village road - 0.57 km in North- East direction. MDR (Runakura Ghat road)- 1.20 km in West direction.

CO-ORDINATES

GPS Coordinates		
Point	**Latitude**	**Longitude**
A	23° 51' 09.064" N	87°00' 49.564" E
B	23° 51' 14.484" N	87°00' 35.319" E
C	23° 51' 17.717" N	87°00' 36.514" E
D	23° 51' 15.622" N	87°00' 44.247" E
E	23° 51' 13.572" N	87°00' 48.064" E
F	23° 51' 11.021" N	87°00' 50.383" E

LAND DETAILS

Khata no.	Plot no.
41	1403

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, Nala vide letter no. 304/Ra, dated 20.02.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Jamtara vide memo no. 346/M, dated 29.04.2024 certified that no other mining lease area exists within 500 m radius from

			proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribagh vide letter no. 838, dated 11.05.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Jamtara Forest Division vide letter no. 331, dated 10.03.2023 certified that the distance of forest land is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved District Survey Report (DSR) of Jamtara District (Sl. no. 20, Page no. 73).
7	Gram Sabha	:	BDO, Nala vide letter no. 548/Vi., dated 29.04.2024 informed that Gram Sabha conducted on 27.04.2024.
8	Mine Plan Approval	:	As per request made by DMO, Jamtara vide letter no. 349/M, dated 03.05.2024 to DMO, Sahibganj for approval of mine plan, the said mining plan has been approved by Distirct Mining Officer, Sahibganj vide Memo No. 342/M, dated 04.05.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Manual Method	
2	Quarry Area	:	4.91 Ha	Life of Mine – upto 15/08/2025 as per provisions of Jharkhand State Sand Mining Policy 2017 & its amendment.
3	Waste Generation	:	00 cum	
4	Stripping Ratio	:	0:0	
5	Working Days	:	200 per year	
6	Benches: size & No	:	3 m and no. of bench 1.	
7	Elevation of Mine	:	53 m AMSL to 51.50 m AMSL	
8	Ground Level Elevation	:	58 m AMSL	
9	Ultimate Working Depth	:	3 m	
10	Water Table	:	47 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	None. No blasting required	
13	Diesel/Fuel requirement	:	Not required for mining.	

Production Details

Year	Production of Sand (cum)	Production of Sand(tonnes)
1st	85,862.19	1,43,390

The development plan submitted along with the mining plan relates to mining operation during the first year.

Land Use

Sl. No.	Pattern of Utilization	Land Used in present Plan period (in Ha.)	Remarks
1	Mining Activities	2.86	Area may vary based on flow of water in the subsequent year.
2	Loss due to Safety Zone	2.05	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		4.91	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Along River Edge		0.52 Km	348
2	Along Approach Road		0.57 km	380
3	On Plantation in consultation with the local authorities		-	80

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

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

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

Undertaking submitted affirming:

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

j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
m. Transportation from the river bed to the Runakura Ghat on road will be done using the existing road.
n. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
o. Wet sand will not be transported.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Bankhet Sand Ghat of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Bankhet, Thana no. : 53, Thana : Nala, Distt. : Jamtara, Jharkhand (4.91 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. 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.
II. 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.
III. Dedicated water tanker to be provided spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
IV. Pre-employment Occupational health 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.
V. 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.

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

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

VIII. 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.

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

X. 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.

XI. 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.

XII. 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.

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

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

XV. 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.

XVI. 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.

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

XVIII. No labour camp shall be allowed in riverbed.

XIX. 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.

XX. 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.

XXI. 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.

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

XXIII. 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.

XXIV. 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.

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

XXVI. 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.

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

XXVIII. 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.

XXIX. 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.

XXX. 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 and decided by regulatory authority while granting Environmental Clearance in consultation with irrigation department. 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. **Asanchua Sand Ghat of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Asanchua, Thana no. : 17, Thana : Jamtara, Distt. : Jamtara, Jharkhand (1.27 Ha).**

(Proposal No : SIA/JH/MIN/ 472056/2024)

Project Category: **B2 – Application for Environment Clearance.**
EC Application for: **Proposed Capacity- 4,603.52 cum/annum or 7,596 TPA .**

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

This is a new project which has been taken for appraisal on 17.05.2024.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Asanchua Sand Ghat	
2	Lessee:	:	M/s Jharkhand State Mineral Development Corporation Ltd. (A Govt. of Jharkhand Enterprises)	
3	Lessee Address	:	Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand)	
4	Lease Area	:	1.27 Ha	Acres – 3.14 Acres
5	Type of Land	:	Non-Forest Government waste Land (River Bed)	
6	Project Cost	:	Capital Cost – Rs 9.65 Lakhs	Recurring : 3.50 Lakhs / Year
7	EMP Budget	:	Capital: Rs 3.255Lakhs	Recurring: 4.656 lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 4,603.52 cum (for five years)	Tonnes: 7,595.81 tonnes
10	Mine Life	:	Upto 15.08.2025 or as per provisions of Jharkhand State Sand Mining Policy 2017 & its amendment.	
11	Man power	:	14	
12	Water Requirement	:	10.463 KLD (Drinking: 0.21 KLD, Dust Suppression: 8.6 KLD, Plantation: 1.653 KLD)	
13	Water Source	:	By authorised hired tankers	
14	DG Set / power	:	NA	
15	Crusher	:	NA	
16	Nearest Water Body	:	On Ajay River bed sand mining is proposed.	
17	Nearest Habitation	:	Asanchua, at 1KM in West direction.	
18	Nearest Rail Station	:	Jamtara Railway Station, 8.54 km, NW direction	
19	Nearest Air Port	:	Kazi Nazrul Islam Airport, Durgapur -50 km in SE direction	
20	Nearest Forest	:	More than 250 m, as per Forest Division. Letter No. – 571, Dated	

			- 26-04-2023
21	Road & Highways	:	Jamtara-Nala road – 1.92 Km in North direction

CO-ORDINATES

GPS Coordinates		
Point	**Latitude**	**Longitude**
1	23° 55'52.129"N	86°52'58.775"E
2	23° 55'52.428"N	86°52'59.897"E
3	23° 55'49.297"N	86°53'01.135"E
4	23° 55'44.157"N	86°53'01.923"E
5	23° 55'41.806"N	86°53'02.263"E
6	23° 55'41.806"N	86°53'00.938"E
7	23° 55'46.539"N	86°53'00.235"E
8	23° 55'46.990"N	86°53'01.490"E

LAND DETAILS

Khata no.	Plot no.
60	1310

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, Jamtara vide letter dated 15.02.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Jamtara vide memo no. 354/M, dated 03.05.2024 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribagh vide letter no. 680, dated 18.04.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.

5	DFO Forest Distance	:	Division Forest Officer, Jamtara Forest Division vide letter no. 571, dated 26.04.2023 certified that the distance of forest land is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved District Survey Report (DSR) of Jamtara District (Sl. no. 13, Page no. 72).
7	Gram Sabha	:	BDO, Jamtara vide letter no. 650/Vi., dated 07.05.2024 informed that Gram Sabha conducted on 07.05.2024.
8	Mine Plan Approval	:	Approved by Deputy Director Mines, Santhal Pargana Circle, Dumka vide Memo No. 48/DDM, dated 24.04.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Manual Method	
2	Quarry Area	:	1.27 Ha	Life of Mine – upto 15/08/2025 as per provisions of Jharkhand State Sand Mining Policy 2017 & its amendment.
3	Waste Generation	:	00 cum	
4	Stripping Ratio	:	0:0	
5	Working Days	:	200 per year	
6	Benches: size & No	:	0.5 m and no. of bench 1.	
7	Elevation of Mine	:	78.25 m AMSL to 80 m AMSL	
8	Ground Level Elevation	:	79 m AMSL	
9	Ultimate Working Depth	:	0.5 m	
10	Water Table	:	76 m AMSL	
11	Topography of Mine	:	Area represents flat land.	
12	Explosive Requirement	:	None. No blasting required	
13	Diesel/Fuel requirement	:	Not required for mining.	

Production Details

Year	Production of Sand (cum)	Production of Sand(tonnes)
1st	4603.52	7,596

The development plan submitted along with the mining plan relates to mining operation during the first year.

Land Use

Sl. No.	Pattern of Utilization	Land Used in present Plan period (in Ha.)	Remarks
1	Mining Activities	0.92	Area may vary based on flow of water in the subsequent year.
2	Loss due to Safety Zone	0.35	• Distance from the bank should be 1/4thof 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		1.27	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Along River Edge		0.32 Km	214
2	Along Approach Road		0.43 Km	287
3	On Plantation in consultation with the local authorities		-	50

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

Solid Waste Management

No solid waste is generated during the course of mining.

Water Quality Management

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

Air Quality Management

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

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

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
m. Transportation from the river bed to the Jamtara –Nala Road will be done using the existing road.
n. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
o. Wet sand will not be transported.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Asanchua Sand Ghat of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Asanchua, Thana no. : 17, Thana : Jamtara, Distt. : Jamtara, Jharkhand (1.27 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. 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.

II. 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.

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

IV. Pre-employment Occupational health 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.

V. 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.

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

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

VIII. 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.

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

X. 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.

XI. 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.

XII. 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.

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

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

XV. 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.

XVI. 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.

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

XVIII. No labour camp shall be allowed in riverbed.

XIX. 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.

XX. 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.

XXI. 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.

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

XXIII. 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.

XXIV. 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.

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

XXVI. 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.

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

XXVIII. 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.

XXIX. 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.

XXX. 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 and decided by regulatory authority while granting Environmental Clearance in consultation with irrigation department. 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.

****

3. Amlachatar Sand Ghat of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Amlachatar, Thana no. : 16, Thana : Jamtara, Distt. : Jamtara, Jharkhand (3.42 Ha).

(Proposal No : SIA/JH/MIN/471941/2024)

Project Category: **B2 – Application for Environment Clearance.**
EC Application for: **Proposed Capacity- 45,473.43 cum/annum or 76,850 TPA .**

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

This is a new project which has been taken for appraisal on 17.05.2024.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Amlachatar Sand Ghat	
2	Lessee:	:	M/s Jharkhand State Mineral Development Corporation Ltd. (A Govt. of Jharkhand Enterprises)	
3	Lessee Address	:	Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand)	
4	Lease Area	:	3.42 Ha	Acres – 8.45 Acres
5	Type of Land	:	Non-Forest Government waste Land (River Bed)	
6	Project Cost	:	Capital Cost – Rs 11.20 Lakhs	Recurring : 14.50 Lakhs / Year
7	EMP Budget	:	Capital: Rs 5.60 Lakhs	Recurring: 4.656 lakhs / year

8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 45,473.43 cum (for five years)	Tonnes: 76,850.10 tonnes
10	Mine Life	:	Upto 15.08.2025 or as per provisions of Jharkhand State Sand Mining Policy 2017 & its amendment.	
11	Man power	:	14	
12	Water Requirement	:	9.58 KLD (Drinking: 0.44 KLD, Dust Suppression: 6.2 KLD, Plantation: 2.94 KLD)	
13	Water Source	:	By authorised hired tankers	
14	DG Set / power	:	NA	
15	Crusher	:	NA	
16	Nearest Water Body	:	On Ajay River bed sand mining is proposed.	
17	Nearest Habitation	:	Amlachatar, at 0.80 KM in South- West direction.	
18	Nearest Rail Station	:	Jamtara Railway Station- 7.2 km in W direction	
19	Nearest Air Port	:	Kazi Nazrul Islam Airport, Durgapur -52 km in SE direction	
20	Nearest Forest	:	More than 250 m, as per Forest Division. Letter No. – 331, Dated - 10-03-2023	
21	Road & Highways	:	Jamtara-Nala road- 0.39 km in S direction	

CO-ORDINATES

GPS Coordinates		
Point	**Latitude**	**Longitude**
1	23° 56' 47.188" N	86° 52' 39.572" E
2	23° 56' 55.743" N	86° 52' 37.889" E
3	23° 57' 04.167" N	86° 52' 34.459" E
4	23° 57' 04.852" N	86° 52' 36.067" E
5	23° 57' 01.919" N	86° 52' 37.110" E
6	23° 56' 56.447" N	86° 52' 40.157" E
7	23° 56' 52.133" N	86° 52' 41.259" E
8	23° 56' 47.394" N	86° 52' 41.844" E

LAND DETAILS

Khata no.	Plot no.
63	1583

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, Jamtara vide letter no. 137/Ra., dated 10.02.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Jamtara vide memo no. 347/M, dated 29.04.2024 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribagh vide letter no. 679, dated 18.04.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Jamtara Forest Division vide letter no. 331, dated 10.03.2023 certified that the distance of forest land is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved District Survey Report (DSR) of Jamtara District (Sl. no. 03, Page no. 69).
7	Gram Sabha	:	BDO, Jamtara vide letter no. 636/Vi., dated 06.05.2024 informed that Gram Sabha conducted on 04.05.2024.
8	Mine Plan Approval	:	Approved by Deputy Director Mines, Santhal Pargana Circle, Dumka vide Memo No. 49/DDM, dated 24.04.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Manual Method	
2	Quarry Area	:	3.42 Ha	Life of Mine – upto 15/08/2025 as per provisions of Jharkhand State Sand Mining Policy 2017 & its amendment.
3	Waste Generation	:	00 cum	
4	Stripping Ratio	:	0:0	

5	Working Days	:	200 per year
6	Benches: size & No	:	1.5 m and no. of bench 1.
7	Elevation of Mine	:	76.25 m AMSL to 78.50 m AMSL
8	Ground Level Elevation	:	81 m AMSL
9	Ultimate Working Depth	:	1.5 m
10	Water Table	:	73 m AMSL
11	Topography of Mine	:	Area represents flat land.
12	Explosive Requirement	:	None. No blasting required
13	Diesel/Fuel requirement	:	Not required for mining.

Production Details

Year	Production of Sand (cum)	Production of Sand(tonnes)
1st	45,473.43	76,850

The development plan submitted along with the mining plan relates to mining operation during the first year.

Land Use

Sl. No.	Pattern of Utilization	Land Used in present Plan period (in Ha.)	Remarks
1	Mining Activities	3.03	Area may vary based on flow of water in the subsequent year.
2	Loss due to Safety Zone	0.39	• Distance from the bank should be 1/4thof 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		3.42	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Along River Edge		0.666 Km	444
2	Along Approach Road		0.70 Km	466
3	On Plantation in consultation with the local authorities		-	70

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

Solid Waste Management

No solid waste is generated during the course of mining.

Water Quality Management

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

Air Quality Management

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

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

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.

V. 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.

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

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

VIII. 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.

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

X. 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.

XI. 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.

XII. 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.

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

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

XV. 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.

XVI. 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.

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

XVIII. No labour camp shall be allowed in riverbed.

XIX. 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,

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Amlachatar Sand Ghat of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Amlachatar, Thana no. : 16, Thana : Jamtara, Distt. : Jamtara, Jharkhand (3.42 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. 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.
II. 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.
III. Dedicated water tanker to be provided spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
IV. Pre-employment Occupational health 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.

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.

XX. 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.

XXI. 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.

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

XXIII. 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.

XXIV. 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.

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

XXVI. 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.

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

XXVIII. 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.

XXIX. 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.

XXX. 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 and decided by regulatory authority while granting Environmental Clearance in consultation with irrigation department. 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. **Malmala Stone Mine of M/s Maruti Stone Works (Partners : Shri Ashish Anand & Shri Manoj Kumar Mandal), Village : Malmala, Thana no. : 567, Thana : Godda, Distt. : Godda, Jharkhand (2.75 Ha).**

(Proposal No : SIA/JH/MIN/ 472804/2024)

Project Category: **B2 – Application for Environment Clearance**
EC Application for: **Proposed Capacity- 45,300 cum/annum or 1,22,310 TPA.**

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

This is a new project which has been taken for appraisal on 17.05.2024.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Malmala Stone Mine	
2	Lessee:	:	M/s Maruti Stone Works (Partners – Shri Ashish Anand and Shri Manoj Kumar Mandal)	
3	Lessee Address	:	M/s Maruti Stone Works Partner 1) Shri Ashish Anand 2) Shri Manoj Kumar Mandal, At – Ward no.- 12, Mahavir Nagar, Asanbani Road, Godda, P.O. & P.S. – Godda, District – Godda (Jharkhand)	
4	Lease Area	:	2.75 Ha	Acres- 6.08 Acre
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital: 126.725 Lakhs	Recurring: 11.954 Lakhs per year
7	EMP Budget	:	Capital: 15.875 Lakhs	Recurring: 5.554 Lakhs per year
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 164965 Cum	Tonnes: 449780 Tons
10	Mine Life	:	4 Years 11 Months	
11	Man power	:	23	
12	Water Requirement	:	18.84 KLD (Drinking & Domestic: 0.34 KLD, Dust Suppression: 4 KLD, Plantation: 14.5KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	20 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Gerua River	

17	Nearest Habitation	:	Malmala Village, at 0.60 KM towards East direction.
18	Nearest Rail Station	:	Poreyahat Railway Station at 15.95 km towards West direction.
19	Nearest Air Port	:	Deoghar Airport at 67.99 km towards SW Direction
20	Nearest Forest	:	More than 250 m, as per forest division. Letter no – 1575 Dt- 13/11/2021
21	Road & Highways	:	MDR-191 (Godda-Ramgarh-Gohiyajori Road) is at a distance of 4.38 Km in SW direction. .

CO-ORDINATES

1	Latitude		From N 24°39'56.870"	To N 24°39'43.490"
2	Longitude		From E 87°19'42.389"	To E 87°19'41.746"

LAND DETAILS

J.B. no.	Plot no.
30	180 & 181 (P)
30/2	184

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Godda vide memo no. 210/M, dated 16.02.2024.
2	CO	:	The CO, Godda Sadar vide letter no. 1831/Ra., dated 11.10.2021 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Godda vide memo no. 213/M, dated 17.02.2024 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 883, dated 06.05.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Godda Forest Division vide letter no. 1575, dated 13.11.2021 certified that the distance of reserved / protected forest land is more than 250 meter from proposed project site.

6	DSR	:	This project is mentioned in approved District Survey Report (DSR) of Godda District (Sl. no. 4, Page no. 61).
7	Gram Sabha	:	Gram Sabha conducted on 08.09.2021.
8	Mine Plan Approval	:	Approved by District Mining Officer, Godda vide Memo No. 231/M, dated 21.02.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi-Mechanized Method	
2	Quarry Area	:	2.46 Ha / 6.09 Acres	Life of Mine – 4 year 11 months
3	Waste Generation	:	11659 cum	
4	Stripping Ratio	:	1:0.06	
5	Working Days	:	300	
6	Benches: size & No	:	6 m x 6 m, No. of benches -5	
7	Elevation of Mine	:	224 – 210 m AMSL	
8	Ground Level Elevation	:	222 m AMSL	
9	Ultimate Working Depth	:	189 m AMSL	
10	Water Table	:	177m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	40 kg Slurry explosives/day	
13	Diesel/Fuel requirement	:	804 liters / day (241.2 KL/year)	

Production Details

Years	Production In Cum/Year	O.B Production in cum. /Year	Production In Tons/Year	Bench RL in metre (AMSL)
1st	29367	3185	79291	B-B' (223-217), C-C' (223-217), C-C' (217-211)
2nd	14853	960	40103	C-C' (211-205), D-D' (223-217), D-D' (217-211)
3rd	33220	7208	89694	E-E' (220-214), F-F' (219-213)

4th	45300	0	122310	E-E' (214-208), F-F' (213-207), E-E' (208-202)
5th	43808	0	118282	F-F' (207-201), E-E' (202-196), F-F' (201-195), E-E' (196-190), F-F' (195-189)
Total	166548	11353	449680	Depth – 34 Meter

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	2.75
	TOTAL	2.75

Land Use Pattern for Proposed Plan Period :

SL	Pattern	Existing Land Use (Ha)
1	Mining Area	1.45
2	Office	0.00
3	Dumping	0.00
4	Road	0.02
5	Garland drain	0.08
6	Settling Pond	0.01
7	Green belt/ Safety Zone	1.08
8	Unutilized	0.11
	TOTAL	2.75

Land Use Pattern after Life of the Mine:

SL	Pattern	Existing Land Use (Ha)	Area to be converted in the conceptual period.
1	Mining Area	1.45	Water body
2	Office	0.00	Green Belt
3	Dumping	0.00	Green Belt
4	Road	0.02	Water body
5	Garland drain	0.08	-
6	Settling Pond	0.01	-
7	Green belt/ Safety Zone	1.08	Greenbelt
8	Unutilized	0.11	Greenbelt
	TOTAL	2.75	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		1.08 Ha	2700
2	Along Approach Road		0.30 km	200
3	Other Reclaimed area		0.11 Ha.	275
TOTAL				**3175**

- 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

During first, second, third year gritty soil & intercalated 11353 cum. waste will be removed.6000 Cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling up to 195m MSL.

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.

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

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 Malmala Stone Mine of M/s Maruti Stone Works (Partners : Shri Ashish Anand & Shri Manoj Kumar Mandal), Village : Malmala, Thana no. : 567, Thana : Godda, Distt. : Godda, Jharkhand (2.75 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

I. **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.

II. 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.

III. 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.

IV. 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.

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

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

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5. **Dhowapahari Stone Mine of M/s Mandal Stone Works, Village : Dhowapahari, Thana no. : 70, Thana : Hiranpur, Distt. : Pakur, Jharkhand (2.64 Ha).**

(Proposal No : SIA/JH/MIN/ 472875/2024)

Project Category: **B2 – Application for Environment Clearance**
EC Application for: **Proposed Capacity- 54,743 cum/annum or 1,58,755 TPA.**

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

This is a new project which has been taken for appraisal on 17.05.2024.

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Dhowapahari Stone Mine
2	Lessee:	:	M/s Mandal Stone Works Nisha Sarkar
3	Lessee Address	:	Village- Dhowapahari, Thana No.-70, Thana-Hiranpur, District-Pakur, Jharkhand
4	Lease Area	:	2.64 Ha
5	Type of Land	:	Non Forest Raiyati Land

6	Project Cost		Capital: 137.70 Lakhs	Recurring: 19.554 Lakhs per year
7	EMP Budget	:	Capital: 10.10 Lakhs	Recurring: 5.454 Lakhs per year
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 390119 cum	Tonnes: 1131345 tons
10	Mine Life	:	9 years.	
11	Man power	:	34 Person	
12	Water Requirement	:	14.21 KLD (Drinking: 0.51 KLD, Dust Suppression: 3.6 KLD, Plantation: 10.1 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	20 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Torai Nadi – 3.50 Km towards South direction	
17	Nearest Habitation	:	Dhowapahari Village at 0.70 KM	
18	Nearest Rail Station	:	Murarai Railway Station, at 18 km in South-East direction	
19	Nearest Air Port	:	Kotapukur Railway Station, is 10 km in North-East direction.	
20	Nearest Forest	:	DFO Pakur, letter no.-1432 Dated- 04.11.2023 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.	
21	Road & Highways	:	NH-133A (Pakur-Hiranpur road) is at a distance of 0.60 Km in West direction.	

CO-ORDINATES

1	Latitude		From N 24°41'21.94607165"	To N 24°41'28.86518652"
2	Longitude		From E 87°44'29.00576417"	To E 87°44'32.01292981"

LAND DETAILS

Khata no.	Plot no.
7	11 (P), 12 (P) & 13
8	17 (P)

9	9 (P) & 8 (P)
30	16 (P)
9	18 (P)
42	14 (P) & 15 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 398/M, dated 20.03.2024.
2	CO	:	The CO, Hiranpur vide letter no. 521/Ra., dated 11.10.2023 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. 458/M, dated 04.04.2024 certified that 01 other mining lease area (5.42 Acre) exists within 500 m radius from proposed project site and total area is 11.94 Acre (4.83 Ha).
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 93, dated 13.01.2024 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. 1432, dated 04.11.2023 certified that the distance of reserved / protected forest land is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 55, Page no. 119) and same has been also certified by DMO, Pakur vide memo no. 482/M, dated 09.04.2024.
7	Gram Sabha	:	BDO, Hiranpur vide letter no. 1104/Vi., dated 11.10.2023 informed that Gram Sabha conducted on 03.10.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 592/M, dated 09.05.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi-Mechanized Method	
2	Quarry Area	:	1.82 Ha	Life of Mine – 11 year
3	Waste Generation	:	36225 cum (Morrum)	

4	Stripping Ratio	:	1:0.19
5	Working Days	:	300
6	Benches: size & No	:	6 m x 6 m, No. of benches -6
7	Elevation of Mine	:	55-50 AMSL
8	Ground Level Elevation	:	50 AMSL
9	Ultimate Working Depth	:	16 AMSL
10	Water Table	:	11 AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	40 kg Slurry explosives/day
13	Diesel/Fuel requirement	:	HSD – 996 liters / day (298.8 KL/year)

Production Details

SUMMARY OF YEARWISE OF PRODUCTION						
Years	Production In Cum/Year	Production In Cum/Day	Removal of Morram Cum.	Production In Tons/Year	Prod. In Tons. /Day	Bench RL in metre (AMSL)
1st	44862	150	23293	130100	434	52-46 (A-A') 52-46 (B-B')
2nd	23363	78	12932	67753	226	52-46 (C-C')
3rd	27730	92	0	80417	268	46-40 (A-A')
4th	32330	108	0	93757	313	46-40 (B-B')
5th	54743	182	0	158755	529	46-40 (B-B')
Total	183028	182 (Max)	36225	530781	529 (Max)	

Land Use

Existing Land Use pattern

Pattern of Utilization	Present/Existing land use pattern in (Ha)
Mining Activities	0.00
Offices/ Store /crusher/ Magazine etc.	0.00

Dumping	0.00
Mining Road	0.00
Garland drain	0.00
Settling pond	0.00
Green belt/Safety Zone	0.00
Unutilized	2.64
Total	2.64

Land Use Pattern for Proposed Plan Period of five Years:

Pattern of Utilization	Present/Existing land use pattern in (Ha)
Mining Activities	1.82
Offices/ Store /crusher/ Magazine etc.	0.01
Dumping	0.15
Mining Road	0.02
Garland drain	0.02
Settling pond	0.01
Green belt/Safety Zone	0.47
Unutilized	0.14
Total	2.64

Land Use at the Conceptual stage i.e. end of mine :

Pattern of Utilization	Land used at the conceptual stage ie end of mine life in (Ha)	Area to be converted in the conceptual period.
Mining Activities	1.82	Water body
Offices/ Store etc.	0.01	-
Dumping	0.15	Plantation
Mining Road	0.02	Water body
Garland drain	0.02	-
Settling pond	0.01	-
Green belt/Safety Zone	0.47	Plantation
Unutilized	0.14	Plantation
Total	2.64	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone		0.47 Ha	1175
2	Along Approach Road		0.18 km	120
3	Other Reclaimed area		0.29 Ha.	725
TOTAL				**2020**

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

During first and second year 36,225 cum. Morrum will be removed. 5400 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.

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 Dhowapahari Stone Mine of M/s Mandal Stone Works, Village : Dhowapahari, Thana no. : 70, Thana : Hiranpur, Distt. : Pakur, Jharkhand (2.64 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. **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.**

II. **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.**

III. **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.**

IV. **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.**

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

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

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6. **Jiyapani Stone Mine of Shri Avinash Kumar Bhakat, Village : Jiyapani, Thana no. : 60, Thana : Maheshpur, Distt. : Pakur, Jharkhand (2.65 Ha).**

(Proposal No : SIA/JH/MIN/ 472913/2024)

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

This is a new project which has been taken for appraisal on 17.05.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of reference (ToR). Proposed Capacity- 39,475 cum/annum or 1,14,478 TPA

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Jiyapani Stone Mine	
2	Lessee:	:	Shri Avinash Kumar Bhakat	
3	Lessee Address	:	Village- Rajgram, P.O.- Rajgram, Thana-Muraroi, District- Birbhum, West Bengal	
4	Lease Area	:	2.65 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost		Capital: 165.09 Lakhs	Recurring: 19.654 Lakhs per year
7	EMP Budget	:	Capital: 10.59 Lakhs	Recurring: 5.454 Lakhs per year
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 318086 cum	Tonnes: 922449 tons
10	Mine Life	:	10 years.	
11	Man power	:	35Person	
12	Water Requirement	:	15.11 KLD (Drinking:0.52 KLD, Dust Suppression: 4 KLD, Plantation: 10.59 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	20 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Bansloi River – 4 km towards South direction	
17	Nearest Habitation	:	Jiyapani Village, at 0.55 KM towards South direction.	
18	Nearest Rail Station	:	Murarai Railway Station, at 18 km in South-East direction	
19	Nearest Air Port	:	Deoghar Airport, 105 km in West direction.	

20	Nearest Forest	:	DFO Pakur letter no.-1735 Dated- 25.11.2022certified that the distance of reserved / protected forest is more than 250 m from proposed project site.
21	Road & Highways	:	SH-18 (Litipara-Dumka road), at 16km in West Direction

CO-ORDINATES

Point	Latitude	Longitude
1	24° 32' 55.435" N	87° 43' 17.433" E
2	24° 32' 56.044" N	87° 43' 18.088" E
3	24° 32' 56.492" N	87° 43' 18.929" E
4	24° 32' 57.558" N	87° 43' 19.679" E
5	24° 32' 57.943" N	87° 43' 20.130" E
6	24° 32' 58.687" N	87° 43' 20.706" E
7	24° 32' 58.844" N	87° 43' 21.380" E
8	24° 32' 59.008" N	87° 43' 21.664" E
9	24° 32' 59.706" N	87° 43' 22.394" E
10	24° 32' 59.698" N	87° 43' 22.713" E
11	24° 32' 59.068" N	87° 43' 23.628" E
12	24° 32' 58.363" N	87° 43' 24.665" E
13	24° 32' 57.742" N	87° 43' 25.744" E
14	24° 32' 57.528" N	87° 43' 25.619" E
15	24° 32' 57.614" N	87° 43' 25.415" E
16	24° 32' 56.729" N	87° 43' 24.868" E
17	24° 32' 56.022" N	87° 43' 24.505" E
18	24° 32' 56.551" N	87° 43' 23.603" E
19	24° 32' 55.549" N	87° 43' 22.836" E
20	24° 32' 54.525" N	87° 43' 22.129" E
21	24° 32' 53.688" N	87° 43' 21.213" E
22	24° 32' 52.668" N	87° 43' 20.041" E
23	24° 32' 52.279" N	87° 43' 19.455" E
24	24° 32' 51.894" N	87° 43' 18.869" E
25	24° 32' 53.707" N	87° 43' 17.343" E

LAND DETAILS

Khata no.	Plot no.
15	01 (P)
19	02 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 378/M, dated 19.03.2024.
2	CO	:	The CO, Maheshpur vide letter no. 150/Ra., dated 17.02.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Pakur vide memo no. 500/M, dated 15.04.2024 certified that 03 other mining lease area (7.00 Acre, 3.16 Acre & 7.00 Acre) exists within 500 m radius from proposed project site and total area is 23.71 Acre (9.60 Ha).
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 534, dated 18.04.2023 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 memo no. 1815, dated 01.12.2022 certified that the minimum distance of forest is 700 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 501/M, dated 15.04.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 136, Page no. 130).
7	Gram Sabha	:	BDO, Maheshpur vide letter no. 1475/Vi., dated 27.07.2023 informed that Gram Sabha conducted on 13.07.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 591/M, dated 09.05.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi-Mechanized Method	
2	Quarry Area	:	2.46 Ha	Life of Mine – 10 year
3	Waste Generation	:	34129 cum	
4	Stripping Ratio	:	1:0.21	
5	Working Days	:	300	
6	Benches: size & No	:	6 m x 6 m, No. of benches -5	
7	Elevation of Mine	:	48 – 41 m AMSL	
8	Ground Level	:	41 m AMSL	

	Elevation		
9	Ultimate Working Depth	:	14m AMSL
10	Water Table	:	9 m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	40 kg Slurry explosives/day
13	Diesel/Fuel requirement	:	HSD – 1060 liters / day (318 KL/year)

Production Details

SUMMARY OF YEARWISE OF PRODUCTION						
Years	Production In Cum/Year	Production In Cum/Day	O.B Production in Tonnes/Year	Production In Tons/Year	Prod. In Tons. /Day	Bench RL in metre (AMSL)
1st	26715	89	13065	77474	258	46-44 (A-A') O.B. 44 - 38 (A-A')
2nd	39056	130	10614	113262	378	43-37 (B-B'), 38-32 (A-A')
3rd	39475	132	10450	114478	382	44-38 (C-C'), 38-32 (A-A')
4th	26216	87	0	76026	253	37 -31(B-B')
5th	26125	87	0	75763	253	38 - 32 (C-C')
Total	157587	132 (Max)	34129	457002	382 (Max)	15 (Including O.B.)

Land Use

Existing Land Use pattern

Sl. No.	Pattern of Utilization	Present/Existing land use pattern in (acres)
1	Mining Activities	0.00
2	Offices/ Store etc.	0.00
3	Dumping	0.00
4	Mining Road	0.00

5	Garland drain	0.00
6	Settling Tank	0.00
7	Green belt/Safety Zone	0.00
8	Unutilized	6.55
Total		6.55

Land Use Pattern for Current Plan Period:

Sl. No.	Pattern of Utilization	Proposed Land use for current plan period (acres)
1	Mining Activities	4.42
2	Offices/ Store etc.	0.01
3	Dumping	0.18
4	Mining Road	0.04
5	Garland drain	0.05
6	Settling Tank	0.06
7	Green belt/Safety Zone	1.17
8	Unutilized	0.62
Total		6.55

Land Use Pattern after Life of the Mine:

Sl. No.	Pattern of Utilization	Land used at the conceptual stage ie end of mine life in (acres)	Area to be converted in the conceptual period.
1	Mining Activities	4.42	Water body
2	Offices/ Store etc.	0.01	Plantation
3	Dumping	0.18	Plantation
4	Mining Road	0.04	Water body
5	Garland drain	0.05	-
6	Settling Tank	0.06	-
7	Green belt/Safety Zone	1.17	Green Belt
8	Unutilized	0.62	Plantation
Total		6.55	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.47 Ha	1175
2	Along Approach Road	0.20 km	133
3	Other Reclaimed area	0.324 Ha.	810
TOTAL			**2118**

- 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

During first, second, third year gritty soil & intercalated 11353 cum. waste will be removed.6000 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.
l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or Infection will be provided to working personnel.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 16, 17, 18 & 19.05.2024, 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 along with following specific condition :

I. The detailed EMP is to be prepared for the Habitation & Education Institute existing within an area of 500 meter radius of proposed project boundary. This EMP is to be included in EIA report.
II. Traffic study is to be conducted.

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7. **Expansion of Radisson Blu Hotel of M/s Jagmohan Lal Gupta Estates Pvt. Ltd., Village : Hindpiri / Siram, Tehsil : Sahar, Distt. : Ranchi, Jharkhand.**

(Proposal No : SIA/JH/INFRA2/ 471958/2024)

Project Category: 8(a) Category B2 – Application for Environment Clearance.

EC Application for: Expansion of Radisson Blu Hotel at Plot No. MS 1794 of M/s Jagmohan Lal Gupta Estates PVT. LTD.: Total built-up area 30663.86sqm (Existing =18945.50 & Proposed= 11718.36 sq.m).

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

This is an expansion project which has been taken for appraisal on 17.05.2024.

Project and Location Details:

Parameters	Description
Plot Area	6600.46 sq.m (0.66 ha / 1.63 acres)
Project Cost	INR 37.82 Crores
Built-up Area (@2.99 F.A.R)	30663.86sqm (Existing =18945.50 & Proposed= 11718.36 sq.m)
Green Belt (@ 15% of plot area)	990.06 sq m
Population	419
Water Requirement	56 KLD
Fresh Water Requirement	46 KLD
Wastewater Generation	40 KLD
Treatment facility if waste water	STP of 130 KLD or STP (sewage treatment plant facility)
Total Municipal Waste	124 kg/day
Power Requirement	Maximum power demand for the project during construction and operation phase is estimated to be 50 kVA and 1250 kVA respectively. Source of power will be Jharkhand State Electricity Board.
DG Sets	2 no. of DG set of Total 750 kVA Total 1500 KVA
RWH Pits	4 nos.
Parking Number	116 Nos.
Nearest Road	Mahatma Gandhi marg (approx 0.10 km, WNW) NH 20 (approx 0.23 km, SSE)
Nearest Railway Station	Ranchi Junction Railway station (approx 1.98 km, SE)
Nearest Airport	Birsa Munda Airport (Ranchi), (approx 4.92 km, SW)
Nearest Hospitals	Raj Hospital (approx1.72km , NW)
Nearest Water Bodies	Subarnarekha river (approx, 0.94 km, SE)

CO-ORDINATES

Point as in Maps	Latitude	Longitude
1.	23°21'4.09"N	85°19'25.76"E
2.	23°21'4.27"N	85°19'26.17"E

3.	23°21'4.82"N	85°19'26.19"E
4.	23°21'4.80"N	85°19'26.42"E
5.	23°21'6.32"N	85°19'26.45"E
6.	23°21'6.42"N	85°19'25.35"E
7.	23°21'5.71"N	85°19'25.17"E
8.	23°21'5.70"N	85°19'24.99"E
9.	23°21'5.41"N	85°19'24.85"E
10.	23°21'5,35"N	85°19'25.29"E
11.	23°21'5.39"N	85°19'25.71"E
12.	23°21'5.24"N	85°19'25.71"E
13.	23°21'5.21"N	85°19'25.88"E
Centre	23°21'5.65"N	85°19'25.84"E

Plot no. of the project :

MS Plot no.
1794

AREA STATEMENT

S. No.	Description	Area (sq m) Existing	Area (sq m) Proposed	Area (sq m) Total
1.	**Net Plot Area**	**6600.46**		
2.	Road Widening Area	194.55		
3.	Permissible Ground Coverage (@50% of net plot area)	2329.97	970.26	3300.23
4.	Proposed Ground Coverage (47.88% of net of plot area)	2231.17	871.09	3102.26
5.	Proposed FAR (@ 3.0 of net plot area)	12657.45	6243.83	18901.28
6.	Non-FAR Area	784.04	2833.73	3617.77

7.	**Built-up Area**	**18945.50**	**11718.36**	**30663.86**
8.	Commercial Area	1632.63		
9.	Proposed Green Belt (@15% of net plot area)	990.06		
10.	Nos. of Guest Rooms	112	42	154
11.	Nos of banquet halls	1	4	5
12.	Height (m)	45.45		
13.	Floor details	B1+B2+G+11		

STATUTORY CLEARANCES

1	DFO Wildlife	:	DFO, Wildlife Ranchi vide letter no. 308, dated 22.04.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
2	DFO Forest	:	DFO, Ranchi Forest Division vide letter no. 1389, dated 20.04.2024 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
3	CO certificate	:	The CO Shahar, Ranchi vide letter no. 377 (ii), dated 30.04.2024 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatiyan.
4	AAI NOC	:	Airport Authority of India NOC for height clearance vide NOC RANC/EAST/B/032324/955268, dated 01.05.2024 valid up to 29.04.2032.
5	Fire Department	:	A fire advisory has been issued by Fire Department, Jharkhad, Ranchi vide memo no. 2661/Tech./2024, dated 20.04.2024.
6	Building Plan	:	Conceptual Plan submitted.
7	Consent to Establish (CTE) of Existing Building	:	**CTE** issued by JSPCB vide memo no. : 519, dated 05.02.2011.
8	Consent to Operate (CTO) of Existing Building	:	**CTO** issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTO-10281839/2021/1189, dated 28.09.2021.

9	RMC Letter for water supply	:	Ranchi Municipal Corporation has confirmed the supply the water vide letter no 127/W.B Dated – 04.09.2010.

Water Requirement Details

Category	Population/Area (sq m)/Capacity	Standard (LPCD)	Water Requirement (KLD)	Fresh Water Requirement (KLD)	Recycled Water requirement(KLD)
Domestic					
Guests	121	320	38.72	27.104	11.616
Staff	84	45	3.78	2.646	1.134
Visitors	214		3.21	0.963	2.247
Total Domestic Water Demand			**46**	**31**	**15**
Landscape	664.53sqm	6ltr/sqm	4	-	4
Fire Fighting			1	-	1
DG cooling	750KVA	0.9l/kVA/ hr	5	-	5
Total		-	**56**	**31**	**25**

(D.G. sets operation period is 8 hrs.)

Wastewater Calculations

Category	Total Quantity (KLD)
Domestic(fresh) water Req.	**31**
Flushing water Req.	**15**
Sewage generation (@80% of the Domestic + 100% flushing water requirement)	40
Capacity of STP	150
Recovered water from STP (90% of Waste water)	36
1. Flushing	15
2. Landscaping	4
3. Fire Fighting	1
4. DG cooling	5
5. Sewer	11

Solid Waste Requirement

S. No	Description	Occupancy/ Area	kg/capita /day	Total Solid Waste Generation (kg/day)	Recyclable (kg/day)	Non-Recyclable (kg/day)
1.	Guests	121	0.5	60.5	42.35	18.15
2.	Staff	84	0.25	21	14.7	6.3
3.	Visitors	214	0.15	32.1	9.63	22.47
5.	Landscape waste	0.16 acres	2.74 kg/acres	0.43	0.43	-
5.	STP sludge	150KLD	--	10	10	-
Total Waste Generated				**124**	**77**	**47**

ENVIRONMENT MANAGEMENT

Green Belt Development

- Combination of local trees and shrubs are planned within the project site.
  - Total green Belt provided at the site is 990.06 sq m (15% of the plot area) which will enhance the beauty of the site and help combat air and noise pollution.
- The plant species will be selected on the basis of Guidelines for Developing Green Belts, CPCB March 2000.

Solid Waste Management

During Construction Phase

- Construction yards are proposed for storage of construction material.
- Excavated top soil will be stored in temporary constructed soil bank and will be reused for landscaping of the project.
- Remaining soil will be utilized for refilling/road work/raising of site level at locations.
- There will be "Refuse Containers" at site for the management of domestic waste generated by the construction labourers and these containers will be emptied at least once daily.
- Cement bags, waste paper and packing material (cardboard) will be sold off to recyclers.

During Operation Phase

- The solid waste will be segregated at source & collected.
- Adequate number of colored bins (green, white & Black) separate for bio-degradable, non-biodegradable and Hazardous waste are proposed to be provided at the strategic location within site.

- Bio-degradable (will be composted through organic waste converter).
- Recyclable wastes will be disposed to govt. or SPCB approved third party vendors.
- Dewatered sludge can be buried underground in a sanitary landfill. It also may be spread on agricultural land in order to make use of its value as a soil conditioner and fertilizer.
- The Hazardous waste generated will be managed as per the Hazardous and Other Wastes (Management and Trans boundary Movement) Rules, 2016.
- Horticultural Waste is composted and used for gardening purposes.

Water Quality Management

During Construction Phase

- The site drainage will be planned in such a way that there is no accumulation of water/wastewater within the project premises or in the vicinity of the site.
- Mobile toilets to be provided for construction Laborers.
- Generated waste water will be collected through tankers and dispose to septic tank for treatment.

During Operation Phase

- STP of capacity i.e. 130 KLD or STP (sewage treatment plant facility) is proposed for treatment of wastewater.
- Treated waste water would be reused for Flushing, Landscaping, Road Washing &Misc
- Use of water efficient plumbing fixtures to conserve water.
- Approx. 31 KLD of fresh water is required during operational phase of the project.

Air Quality Management

- Warehouse/stock yard will be provided for storage of construction material
- Covering of stored construction materials with tarpaulin covers which will be resold to authorized construction material handling agency for reuse.
- Covering of trucks carrying construction materials.
- Dust suppression by water sprinkling.
- Adequate maintenance of construction equipment & vehicles.
- Wheel wash facility at the entry/exit of the site to prevent dust emissions.
- Periodical Ambient Air Quality Monitoring.
- PUC Certified vehicles.
- Glow signs Speed Limits to 20 kmph to reduce emissions on site will be displayed at the important junctions.

Energy conservation

- Energy will be conserved via solar power & LED of at least 10% of the total power requirement.

Undertaking

- An affidavit stating that no construction work.
- An undertaking that 40 KLD recycles waste water generated at Expansion of Radisson Blu Hotel of M/s Jagmohan Lal Gupta Estates PVT. LTD. at Plot No. MS 1794, village-Siram/Hindpiri, Thana-Chutia, Ranchi, Jharkhand-834001.
- An undertaking that 1250 kVA Power requirement in Expansion of Radisson Blu Hotel of M/s Jagmohan Lal Gupta Estates PVT. LTD at Plot No. MS 1794, village-Siram/Hindpiri, Thana-Chutia, Ranchi, Jharkhand-834001.

Based on the presentation made and information provided, the Committee decided that the proposal for Expansion of Radisson Blu Hotel of M/s Jagmohan Lal Gupta Estates Pvt. Ltd., Village : Hindpiri / Siram, Tehsil : Sahar, Distt. : Ranchi, Jharkhand is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure –III along with the following specific conditions :

I. Ground water to be drawn for use in the project only after obtaining permission from the Competent Authority.

II. 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.

III. All raw material to be stored only under covered shed.

IV. PAs to offset (upto20%) consumption of conventional energy sources by promoting use of solar energy, passive energy utilization, optimum fenestration, shading effect and heat islands.

V. Developers to promote energy conservation measures such that it offsets not less than 02 % of connected load. It is to be achieved by solar panels etc meeting ECBC norms.

VI. Trees should be developed & maintained not less than 15% of project area.

VII. Organic Waste Converter (OWC) to be installed of sufficient capacity such that all organic waste (bio degradable) generated is composted at source only.

VIII. Developers/Company to install STP of sufficient capacity such that all the sewer produced is treated and reused.

IX. Developers/Company to install Rain water harvesting structures such that all the roof top water runoff is collected and harvested including reuse on 100% basis.

X. Developers/Company to conduct and submit carbon footprint and carbon sequestration study report including mitigation measures as a part of EC compliance.

XI. Water runoff originating from open non constructed areas of project premises to be harvested /guided in such a way that it does not create water logging condition outside.

XII. Sufficient number of EV fast charging points to be installed.

XIII. MSW Collection centre should be located in isolated and preferably unmanned area. Movement of the vehicle carrying waste should be under tarpaulin covered condition only. Route of vehicle should be such that it avoids residential areas as far as practical.

XIV. ISO 14k EMS system standard to be followed for implementation of EMPs with MRM in place for feedback to Sr management.

XV. A cycling tract to be provided in residential complex so as to save on fuel and make in campus movement environment friendly.

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8. Puregara Stone Deposit of M/s Gannayak Coal and Construction Pvt. Ltd., Village : Puregara, Thana : Ranka, Thana no. : 101, Distt. : Garhwa, Jharkhand (2.12 Ha).

(Proposal No : SIA/JH/MIN/ 472242/2024)

Project Category: B2 – Application for Environment Clearance

EC Application for: Proposed Capacity 54103 cum/annum or 151489 TPA

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

This is a new project which has been taken for appraisal on 17.05.2024.

Project and Location Details :

Sl	Parameter		Details
1	Project Name	:	Puregara Stone Deposit
2	Lessee:	:	M/s Gannayak Coal And Construction Pvt. Ltd. At - Flat No. 102, Uma Bhavan, 3591/A, Road No. 04, Ashok Nagar, Ranchi, State – Jharkhand, 834002 Representative: Sri Dharmendra Kumar Singh At – Arya Nagar, Ranchi Patna Road, Near Patratu Chowk, Sadar, P.O. + P.S. + District – Hazaribagh, State – Jharkhand. 825301

3	Lease Address	:	Mouza – Puregara,Thana – Ranka, Thana No- 101, District- Garhwa, Jharkhand	
4	Lease Area	:	2.12 ha	Acres- 5.25 Acres
5	Type of Land	:	Non-Forest (Raiyati land)	
6	Project Cost	:	Rs. 50 Lakhs	
7	EMP Budget	:	Capital: 10.14 Lakhs	Recurring: 7.35 Lakh / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 270351	Tonnes: 756983
10	Mine Life	:	5 years	
11	Man power	:	38	
12	Water Requirement	:	16.00 KLD (Drinking:0.38 KLD,Dust Suppression: 6.63KLD, Plantation:8.99 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Lilbatwa Nadi is flowing near about 714m away in the North direction from the applied area.	
17	Nearest Habitation	:	Puregara- Approx 0.86 km towards NW direction.	
18	Nearest Rail Station	:	Daltonganj Railway Station is situated approx. 26.43 Km aerial distance away in North East direction.	
19	Nearest Air Port	:	Gaya International Airport, BodhGaya, Bihar is situated approx. 143.68 Km aerial distance away in North East direction.	
20	Nearest Forest	:	Siswa PF approx 1.0 km in ESE direction. Chete PF approx 4.0 km in ESE direction. PF approx 4.0 km in NE direction. Nawadih PF approx 4.0 km in SE direction. Manpur PF approx 4.5 km in North direction.	
21	Road & Highways	:	NH-343 – Approx 7.03 km in WNW direction.	

CO-ORDINATES

1	Latitude		From 23'56'30.82" N	To 23'56'37.72" N
2	Longitude		From 83'49'52.19" E	To 83'50'01.75" E

LAND DETAILS

Khata no.	Plot no.
Old – 01	Old – 434 (P)
New - 25	New – 957, 958, 961 (P) & 962 (P)

STATUTORY CLEARANCES

1	LOI/Lease docs	The Letter of Intent (LOI) has been issued by Assistant Mining Officer, Garhwa vide letter no. 707/M, dated 30.05.2023.
2	CO	The CO, Ranka vide letter no.: 203, dated 02.05.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster Certificate	District Mining Officer, Garhwa vide memo no. 785/M., dated 14.06.2023 certified that there is 01 other mining lease area (6.36 Acre) exists within 500 m periphery from proposed project site and total area is 11.61 Acre.
4	DFO Wild Life	Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no.: 558, dated 10.05.2023 certified that the proposed project site is outside Eco Sensitive Zone of Betla National Park, Mahuadanr Wolf Sanctuary & Palamau Tiger Reserve.
5	DFO Forest Distance	DFO, Garhwa South Forest Division vide letter no.: 1052, dated 19.04.2023 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 Garhwa District (Sl. No. 15, Page no. 77).
7	Gram Sabha	BDO, Ranka vide letter no. 396, dated 28.04.2023 informed that Gram Sabha conducted on 24.04.2023.
8	Mine Plan Approval	Approved by Assistant Mining Officer, Garhwa vide memo no. 775/M, dated 13.06.2023.
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 mechanised method	
2	Quarry Area	:	2.12 Ha	Life of Mine – 5 years
3	Waste Generation	:	22589 cum	
4	Stripping Ratio	:	1: 0.08	
5	Working Days	:	300	
6	Benches: size & No	:	6m to 6m	
7	Elevation of Mine	:	320mRL to 322 mRL	
8	Ground Level Elevation	:	320 mRL	
9	Ultimate Working	:	292 mRL	

	Depth		
10	Water Table	:	283m to 274m
11	Topography of Mine	:	Area represents a gently sloping land with rock mass of Granite-Gneiss.
12	Explosive Requirement	:	110 kg/day
13	Diesel/Fuel requirement	:	110 litre/day

Production Details

Year	Production of Stone in in (cum)	Production of Stone in in (Tonnes)	Intercalated waste in Cum	Removal of Gritty soil in cum	Removal of Gritty soil in tonnes	Bench RL in Meters
1st	54060	151367	2845	1560	2340	322 mRL - 304 mRL
2nd	54103	151489	2848	4240	6360	322 mRL - 310 mRL
3rd	54060	151367	2845	2560	3840	322 mRL - 310 mRL
4th	54068	151393	2846	Nil	Nil	316 mRL - 304 mRL
5th	54060	151367	2845	Nil	Nil	310 mRL - 292 mRL
Total	270351	756983	14229	8360	12540	

Land Use

Type of Land	Present End of Plan Period (In ha.)	At the End OfPlan Period (In Ha)	At the end of Mine (In Ha)	Conceptual Period (In Ha)		
				Back fill	Water Body	Plantation
Quarry	Nil	1.35 (Including backfilling 0.24 ha)	1.35 (Including backfilling 0.24 ha)	-	1.35	-
Greenbelt within saftey barrier	Nil	0.75	0.75	-	-	0.75
Road	0.01	-	-	-	-	-
Total Area in Use	**0.01**	**2.10**	**2.10**	**-**	**1.35**	**0.75**
Blocked area due to road saftey	0.02	0.02	0.02	-	-	0.02
Balanced area unused	2.09	Nil	Nil	-	-	-

Total applied area	2.12	2.12	2.12	2.12

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.75/1875	1875
2	Along Approach Road	480m	322
3	Blocked Area Plantation	--	50

- 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

Removal of 8360Cum gritty soil & 14229 Cum intercalated waste will be generated during plan period. The area is covered with a layer of gritty soil. During quarry development in 1st & 2nd gritty soil and intercalated waste will be removed and this will be temporarily dumped [1st year area – 0.088 Ha, (L x W x H = 30m x 28m x 5m), 2nd year area – 0.142 Ha, (L x W x H = 46m x 35m x 5m)] at the north east part of the project area with suitable precautions like constructing parapet wall, garland drain & in 3rd year removed gritty soil, intercalated waste & existing dumped materials will be backfill within the exhausted quarry & in onward 4th & 5th year removal gritty soil & intercalated waste will be backfilled within the exhausted quarry.

Water Quality Management

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

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

Air Quality Management

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

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

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

Severity/Impact Intensity

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

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

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone Mining operation

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

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

Preventive Measures:

Face Stability

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

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

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

Undertaking submitted affirming:

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Puregara Stone Deposit of M/s Gannayak Coal and Construction Pvt. Ltd., Village : Puregara, Thana : Ranka, Thana no. : 101, Distt. : Garhwa, Jharkhand (2.12 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

I. 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.

II. 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.

III. 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.

IV. 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.

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

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

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9. Charakmara Stone Deposit of M/s Singh Mines and Construction (Prop. : Shri Dhirendra Kumar Singh), Village : Charakmara, Circle : Baharagora, Distt. : East Singhbhum, Jharkhand (2.65 Ha).

(Proposal No : SIA/JH/MIN/ 472858/2024)

Project Category: B2 – Application for Environment Clearance

EC Application for: Proposed Capacity- 22338.12 cum/annum or 60312.92 TPA.

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

This is a new project which has been taken for appraisal on 17.05.2024.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Charakmara Stone Deposit (Area- 2.65 ha. or 6.56 Acre)	
2	Lessee:	:	M/s Singh Mines & Construction, At-NH-18, Baharagora, P.O/P.S- Baharagora Dist. - East Singhbhum, Jharkhand, 832101	
3	Lease Address	:	Village – Charakmara, Circle - Baharagora, District – East Singhbhum, State- Jharkhand	
4	Lease Area	:	2.65 ha.	Acres- 6.56 Acre
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 50 Lakhs	
7	EMP Budget	:	Capital: 6.75 Lakhs	Recurring: 4.27 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	600940.99 tons	
10	Mine Life	:	10 years	
11	Man power	:	17	
12	Water Requirement	:	12.57 ~ 13.0 KLD (Drinking: 0.17 KLD, Dust Suppression: 7.9 KLD, Plantation: 4.5 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Subarnarekha River, Approx. 1.81 km towards West direction of mine site.	
17	Nearest Habitation	:	Charakmara village, Approx. 460 meters towards East direction.	
18	Nearest Railway Station	:	Rajalukah Railway station, approx. 15.66 km towards SSW direction.	
19	Nearest Air Port	:	Birsa Munda Airport, approx. 180 km towards NW direction.	

20	Nearest Forest	:	Open Scrub, Approx. 3.44 km towards WSW direction of mine site.
21	Road & Highways	:	NH-18 - Approx. 3.18 km. in ENE direction.

CO-ORDINATES

1	Latitude		From 22°16'52.82378" N	To 22°17'00.85913" N
2	Longitude		From 86°40'42.25818" E	To 86°40'53.49378" E

LAND DETAILS

Khata No.	Plot No.
33	1375
34	1376, 1379, 1517, 1518
32	1377, 1378
13	1499, 1564, 1673
59	1503, 1578, 1582, 1583, 1672
58	1505(P), 1506, 1508, 1509, 1511(P), 1512, 1513(P), 1563, 1569, 1579, 1580, 1581, 1585, 1587, , 1592, 1594
35	1515, 1568,
60	1565, 1566, 1577
228	1588
287	1562

STATUTORY CLEARANCES

1	LOI/Lease docs	The Letter of Intent (LOI) has been issued by District Mining Officer, East Singhbhum, Jamshedpur vide letter no. 207/Khanan, dated 09.03.2024.
2	CO	The CO, Bahragora vide letter no.: 958, dated 29.12.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster Certificate	District Mining Officer, East Singhbhum, Jamshedpur vide memo no. 426/Khanan, dated 09.05.2024 certified that there is 01 other mining lease area (4.55 Acre) exists within 500 m periphery from proposed project site and total area is 11.11 Acre.
4	DFO Wild Life	DFO, Dalma Elephant Project vide letter no.: 517, dated 04.04.2024 certified that the proposed project site is outside Eco Sensitive Zone of Dalma Wildlife Sanctuary.
5	DFO Forest Distance	DFO, Jamshedpur Forest Division vide letter no. : 2850, dated 29.11.2023 certified that the distance of reserved / protected Forest is more than 250 meter from proposed project site.

6	DSR	The District Magistrate – cum –DC, East Singhbhum, Jamshedpur vide letter no. 434/Khanan, dated 10.05.2024 has informed that this project is part of District Survey Report (DSR) of East Singhbhum district and accordingly necessary action with regard to Environmental Clearance can be taken.
7	Gram Sabha	BDO, Bahragora vide letter no. 04, dated 02.01.2024 informed that Gram Sabha conducted on 27.12.2023.
8	Mine Plan Approval	Approved by District Mining Officer, East Singhbhum, Jamshedpur vide memo no. 427/Khanan, dated 09.05.2024.
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	:	Open caste other than fully mechanized method (OTFM)	
2	Quarry Area	:	2.65 Ha / 6.56 Acre	Life of Mine – 10 Years
3	Waste Generation	:	15230.60 cum	
4	Stripping Ratio	:	1:0.10	
5	Working Days	:	300	
6	Benches: size & No	:	6m to 6m	
7	Elevation of Mine	:	74 mRL to 88 mRL	
8	Ground Level Elevation	:	74mRL	
9	Ultimate Working Depth	:	59mRL	
10	Water Table	:	54mRL	
11	Topography of Mine	:	Area represents undulating topography.	
12	Explosive Requirement	:	110kg/day	
13	Diesel/Fuel requirement	:	110 litre/day	

Production Details

Year	Total excavation	Production of Stone		Total waste in cum	Bench RL in Meters
		In cum	in tons		
1st	22680.00	22226.40	60011.28	6753.60	77 mRL - 77 mRL
2nd	22794.00	22338.12	60312.92	6041.88	77 mRL - 65 mRL
3rd	22728.00	22273.44	60138.29	454.56	80 mRL - 59 mRL
4th	22713.00	22258.74	60098.60	1526.26	74 mRL - 74 mRL
5th	22715.00	22260.70	60103.89	454.30	74 mRL - 68 mRL
Total	**113630.00**	**111357.40**	**300664.98**	**15230.60**	

Land Use

Type of Land	Existing Land use (Ha)	At the end of Plan period (Ha)	At Conceptual Period (Ha)
Excavation	Nil	0.953	1.435(0.189ha are shall be Excavation Backfilled, 0.50ha converted in to water reservoir & 0.746ha shall be left as dead benches)
Waste Dump	Nil	0.199	Nil
Road	Nil	0.004	--
Infrastructure	Nil	Nil	Nil
Plantation (Green Belt)	Nil	0.50 (Within safety zone)	1.215 (Within safety zone)
Used Area	Nil	**1.656**	**2.650**
Unused Area	-	**0.994**	-
Total Applied Area	**2.65**	**2.65**	**2.65**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone		0.50/1250	1250
2	Along Approach Road		900m	900
3	No. of plants distributed with consultation local authorities /village Panchayat		--	100

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

Solid Waste Management

Total 15230.60 cum waste shall be generated during the plan period, Part of the waste shall be utilized for maintenance the village road and making of approach road, haul road and part of the waste shall be temporarily dump on the NW side 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, injuryor system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2

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

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone Mining operation

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

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

Preventive Measures:

Face Stability

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

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

Control Measures

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

Dust generation during drilling

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

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole

continuously and discharges the same in a dust collector specially provided for the purpose.

- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept. The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

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

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

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

Transportation

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

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

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

Undertaking submitted affirming:

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

i. If any tree felling than necessary permission shall be taken from the competent authority.

j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.

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

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Charakmara Stone Deposit of M/s Singh Mines and Construction (Prop. : Shri Dhirendra Kumar Singh), Village : Charakmara, Circle : Baharagora, Distt. : East Singhbhum, Jharkhand (2.65 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

I. **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.**

II. **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.**

III. **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.**

IV. **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.**

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

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

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10. Dugdugia Stone Block of M/s Satendra Kumar Singh (Prop. : Shri Satendra Kumar Singh), Village : Dugdugia, Thana : Khunti, Distt. : Khunti, Jharkhand (2.35 Ha).

(Proposal No : SIA/JH/MIN/ 472901/2024)

Project Category: **B2 – Application for Environment Clearance**

EC Application for: **Proposed Capacity- 8944 cum/annum or 24147 TPA.**

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

This is a new project which has been taken for appraisal on 17.05.2024.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Dugdugia Stone Block (Area- 2.35 Ha / 5.80 Acre)	
2	Lessee:	:	M/s Satendra Kumar Singh Proprietor – Satyendra Kumar Singh AT- Tongritola, New Sai Mandir, Power Station Road, Ratu, P.S. – Ratu, District – Ranchi, State - Jharkhand Pin Code – 835222	
3	Lease Address	:	Village – Dugdugia, Thana - Khunti, District – Khunti, State- Jharkhand	
4	Lease Area	:	2.35 ha.	Acres- 5.80 Acre
5	Type of Land	:	Non-Forest – G.M. Land	
6	Project Cost	:	Rs. 70 Lakhs	
7	EMP Budget	:	Capital: 5.53 Lakhs	Recurring: 4.27 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	184391.085 Cum or 497855.931 tonnes	
10	Mine Life	:	21 years	
11	Man power	:	32	
12	Water Requirement	:	9.44~ 9.5KLD (Drinking: 0.32 KLD, Dust Suppression: 4.59 KLD, Plantation: 4.53 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	500 kVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Kachi Nadi Approx. 3.20 km towards North direction of mine site.	
17	Nearest Habitation	:	Dugdugia village, Approx. 470 meters towards NNW direction.	
18	Nearest Railway Station	:	Karra Railway station, approx. 16.80 km towards West direction.	

19	Nearest Air Port	:	Birsa Munda Airport Ranchi, approx. 18.43 km towards North direction.
20	Nearest Forest	:	Open Sal- Approx. 0.46 Km in East direction of mine site. Open Sal- Approx. 0.93 Km in East direction of mine site. Open Jungle Mainly Sal- Approx. 3.52 Km in NE direction of mine site.
21	Road & Highways	:	NH-20 - Approx. 2.96 km in West direction.

CO-ORDINATES

1	Latitude		From 23°08'26.95301" N	To 23°08'34.48972" N
2	Longitude		From 85°17'43.65218" E	To 85°17'53.29093" E

LAND DETAILS

Khata no.	Plot no.
51	1245 (P)

STATUTORY CLEARANCES

1	LOI/Lease docs	The Letter of Intent (LOI) has been issued by Director, Mines, Deptt. of Mines & Geology, Govt. of Jharkhand vide letter no. Kha. Ni (Nilami)-69/2022 - 849, dated 24.04.2023.
2	CO	The CO, Sadar, Khunti vide letter no.: 310/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 and also mentioned that the distance of water body is 100 m and habitation of 8 Kacha houses within 500 m of proposed project site, accordingly PAs has submitted EMP for the same.
3	DMO Cluster Certificate	District Mining Officer, Khunti vide memo no. 363/M, dated 02.05.2024 certified that there is 01 other mining lease area (2.67 Acre) exists within 500 m periphery from proposed project site and total area is 8.47 Acre.
4	DFO Wild Life	DFO, Wildlife Division, Ranchi vide letter no.: 569, dated 23.06.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.

5	DFO Forest Distance	DFO, Khunti Forest Division vide letter no. : 878, dated 27.05.2023 certified that the distance of reserved / protected Forest is more than 250 meter from proposed project site.
6	DSR	The DMO, Khunti has been certified vide letter no. 341/M, dated 27.04.2024 that this project is mentioned in approved DSR of Khunti District as a list of runnin mining lease (Sl. no. 23).
7	Gram Sabha	BDO, Khunti vide letter no. 1363(ii), dated 03.11.2023 informed that Gram Sabha conducted on 19.10.2023.
8	Mine Plan Approval	Approved by Assistant Mining Officer –cum- District Mining Officer, Khunti vide memo no. 205/M, dated 09.03.2024.
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	:	2.35 Ha / 5.80 Acre	Life of Mine – 21Years
3	Waste Generation	:	2344 cum intercalated waste shall be generated during the plan period	
4	Stripping Ratio	:	01:0.05	
5	Working Days	:	300	
6	Benches: size & No	:	6m to 6m	
7	Elevation of Mine	:	620mRL to 614mRL	
8	Ground Level Elevation	:	614mRL	
9	Ultimate Working Depth	:	608mRL	
10	Water Table	:	582mRL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	110kg/day	
13	Diesel/Fuel requirement	:	110 litre/day	

Production Details

Year	Total Waste (in cum)	Production of stone (cum)	Production of stone (tons)	Bench RL in Meters
1st	467	8873	23954	620mRL -614mRL

2nd	468	8901	24031	620mRL -614mRL
3rd	470	8924	24093	620mRL - 614mRL
4th	468	8901	24031	620mRL - 608mRL
5th	471	8944	24147	614mRL - 608mRL
Total	**2344**	**44543**	**120256**	

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	At the end of mine (Ha)	Conceptual Period (in Ha)		
				Public Use	Water Body	Plantation
Quarry	0.71 (including water logged)	1.23	1.51	--	1.27	0.24 (Dead bench plantation)
Greenbelt within Safety Barrier	Nil	0.84	0.84	--	--	0.84
Road	0.15	Nil	--	--	--	--
Temporary Labour House	0.02	Nil	--	--	--	--
Total Area in Use	**0.88**	**2.07**	**2.35**	**--**	**1.27**	**1.08**
Balanced Area unused	**1.47**	0.28	Nil	--	--	--
Total Applied Area	**2.35**	**2.35**	**2.35**	**2.35**		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone		0.84/2100	2100
2	Along Approach Road		65m	65
3	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

It has been calculated that total 2344 cum intercalated waste shall be generated during the plan period. During quarry development in 1st, 2nd, 3rd, 4th & 5th year removed intercalated waste will be used in haul road dressing. In conceptual period total removal intercalated waste will be used in haul road dressing.

Water Quality Management

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

Air Quality Management

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

- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

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

Severity/Impact Intensity

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

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone Mining operation

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

		(Bodily Injury)			
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

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 Dugdugia Stone Block of M/s Satendra Kumar Singh (Prop. : Shri Satendra Kumar Singh), Village : Dugdugia, Thana : Khunti, Distt. : Khunti, Jharkhand (2.35 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. **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.**
II. **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.**
III. **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.**

IV. **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.**

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

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

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11. Murgadanga Stone Deposit of M/s Sai Construction (Partners : Shri Bijay Pratap Singh & Shri Deshratna), Village : Murgadanga, P.S. : Hiranpur, Distt. : Pakur, Jharkhand (2.165 Ha).

(Proposal No : SIA/JH/MIN/ 472853/2024)

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

This is an expansion project which has been taken for appraisal on 17.05.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of reference (ToR).

The Murgadanga Stone Deposit has been previously granted for Environment clearance on 13.08.2022 with production capacity 22446.67 cum/year or 65095.33 TPA. Now, the proposal has been applied for the Terms of Reference (Expansion, Category B1) under production capacity of 47608 cum/year or 138063.20 TPA within same mining lease area.

Project and Location Details :

Sl	Parameter		Details	
1	Project Name	:	Murgadanga Stone Deposit	
2	Lessee:	:	M/s Sai Construction Partners-Sri Bijay Pratap Singh & Sri Deshratna Both Address- Gali No.-7, Jayprakash Nagar, District -Dhanbad, State- Jharkhand	
3	Lease Address	:	Village – Murgadanga, P.S - Hiranpur, District – Pakur, State :- Jharkhand	
4	Lease Area	:	2.165 ha	Acres- 5.35 Acres
5	Type of Land	:	Non- Forest (Raiyati Land)	
6	Project Cost	:	Rs. 60 Lakhs	
7	EMP Budget	:	Capital: Rs. 3.934 Lakhs	Recurring: Rs. 5.10 Lakh / year
8	New or Expansion	:	Expansion	
9	Mineable Reserves	:	cum.: 476800	Tonnes: 1382720

10	Mine Life	:	10 years
11	Man power	:	20
12	Water Requirement	:	14 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. 2.12 km. in SSE direction.
17	Nearest Habitation	:	Murgadanga- Approx 0.72 km towards South direction.
18	Nearest Rail Station	:	Tilbhita Railway station, approx. 6.88 km towards East direction.
19	Nearest Air Port	:	Birsa Munda Airport, Ranchi approx. 292 km towards WSW direction.
20	Nearest Forest	:	Protected Forest, approx 3.19 km in WNW direction Protected Forest, approx 5.62 km in NNW direction
21	Road & Highways	:	NH- 133A, Approx. 2.80 km. in WSW direction.

CO-ORDINATES

1	Latitude		From 24°41'04.16" N	To 24°41'10.82" N
2	Longitude		From 87°46'23.86" E	To 87°46'31.30" E

LAND DETAILS

Khata no.	Plot no.
14	804 (P), 805, 806, 825 (P) & 826 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed : Date 05.01.2024 to 04.01.2034.
2	CO	:	The CO, Hiranpur vide letter no. 526/Ra., dated 16.12.2020 has mentioned the plot nos. of the project is not recorded as "Jangle Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Pakur vide memo no. 562/M, dated 30.04.2024 certified that 05 other mining lease area (6.92 Acre, 5.15 Acre, 6.97 Acre, 6.22 Acre & 5.21 Acre) exists within 500 m radius from proposed project site and total area is 35.82 Acre (14.50 Ha).

4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribagh vide letter no. 788, dated 13.05.2021 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Forest Distance	:	DFO, Pakur Forest Division vide letter no. 366, dated 23.02.2021 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, Hiranpur vide letter no. 47/Vi., dated 15.01.2021 informed that Gram Sabha conducted on 24.12.2020.
8	Mine Plan Approval	:	Approved by Deputy Director Mines, Santhal Pargana Circle, Dumka vide Letter No. 45/DDM, dated 24.04.2024.
9	Previous Environmental Clearance (EC)	:	Previous EC granted by SEIAA vide letter no. EC/SEIAA/ 2021-22/ 2413 /2021/188, dated 02.08.2022.
10	Compliance report of previous EC	:	Self certified compliance report.
11	Production Report	:	Production figure issued by DMO, Pakur vide memo no. 561/M, dated 30.04.2024.
12	Consent to Estblish (CTE)	:	CTE issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-18092000 /2024 /38, dated 12.02.2024.
13	Consent to Operate (CTO)	:	CTO issued by JSPCB vide Ref. no. : JSPCB/RO/DMK/CTO-18504817 /2024/41, dated 22.02.2024.
14	Qualified Person	:	Shri Tapan Kumar Chakravarty was present through Video Conference and personally affirmed that the mine plan has been prepared by him.
15	Public Hearing	:	Public Hearing was conducted on 07.04.2022 for previous EC granted by SEIAA vide letter no. EC/SEIAA/2021-22/2413 /2021/188, dated 02.08.2022. As per MOEF & CC, Govt. of India O.M. dated 22.08.2014 Public hearing for the present proposal is exempted.
16	Baseline Data	:	Baseline data generation has been carried out between October,

	Monitoring		2021 to December, 2021.

Working Details

1	Mining Method	:	Opencast Mechanised Method	
2	Quarry Area	:	2.165 Ha	Life of Mine – 10years
3	Waste Generation	:	3843.00 cum or 11144.7 tons	
4	Stripping Ratio	:	1: 0.01	
5	Working Days	:	300	
6	Benches: size & No	:	6m to 6m	
7	Elevation of Mine	:	50 mRL to 49 mRL	
8	Ground Level Elevation	:	25 mRL	
9	Ultimate Working Depth	:	20 mRL	
10	Water Table	:	10 mRL (15mbgl)	
11	Topography of Mine	:	Area represents flat topography.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	110 litre/day	

Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Waste (cum) in plan period	Waste (cum) in ultimate
1st Year	42000.00	121800.00	1251.00	
2nd Year	43000.00	124700.00	1285.00	
3rd Year	47300.00	137170.00	1307.00	-
4th Year	47520.00	137808.00	-	
5th Year	47608.00	138063.20	-	
Total	**227428.00**	**659541.20**	**3843.00**	**-**

Land Use

Pattern of Utilization	Existing (Ha)	Plan period (Ha)	Conceptual stage (Ha)
Quarry	-	1.678	1.678 (Entire area Rain water Harvesting)
Road	0.011	Comes under quarry	Comes under quarry
Safety Zone Plantation	-	0.487	0.487
Total	**0.011**	**2.165**	**2.165**

Balance	2.154	-	-
Total	**2.165**	**2.165**	**2.165**

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Area for Greenbelt in Hectare/No. of Plants	Plantation along both sides of Approach road	Anganwadi, School, Panchayat office etc	Name of the Species to be planted
1st Year	0.487 ha/1217	150	100	Khair, Bel, Sisam, Neem, Mango, etc.
2nd year	Care and Maintenance			
Total	**1217**	**150**	**100**	
Total	**1467**			

- 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 3843.00 cum waste generated during this plan period which is used for village & haul road maintenance.

Water Quality Management

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

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- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
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- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
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Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (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

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

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

Preventive Measures:

Face Stability

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

- Overall slope angles of benches will be maintained at 45°

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

Falls from the edge of a bench

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

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

Control Measures

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

Dust generation during drilling

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

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

- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

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

Undertaking submitted affirming:

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

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

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 16, 17, 18 & 19.05.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of TOR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure IV.

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12. Kanke Khurd Sand Deposit (In the River bed of Amanat) of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Kanke Khurd, Block : Patan, Distt. : Palamau, Jharkhand (4.08 Ha).

(Proposal No : SIA/JH/MIN/ 471627/2024)

Project Category: **B2 – Application for Environment Clearance**

EC Application for: **Proposed Capacity- 76980 Cum/Annum or 123938 TPA.**

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

This is a new project which has been taken for appraisal on 17.05.2024.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Kanke Khurd Sand Deposit (River Bed of Amanat)	
2	Lessee:	:	M/s Jharkhand State Mineral Development Corporation Limited	
3	Lessee Address	:	Khanij Nigam Bhawan, Doranda, Ranchi – 834002, Jharkhand.	
4	Lease Area	:	4.08 ha.	Acres- 10.08 Acres
5	Type of Land	:	Non-Forest land (Govt.waste land- River)	
6	Project Cost	:	Rs. 50 Lakhs	
7	EMP Budget	:	Capital: 3.35 Lakhs	Recurring: 3.47 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	177485 Cum or 285751 Tonnes.	
10	Mine Life	:	Upto 15.08.2025 or as per provisions of Jharkhand State Sand Mining Policy 2017 & its amendment.	

11	Man power	:	21
12	Water Requirement	:	6.03 ~ 6.10 KLD(Drinking: 0.21 KLD, Dust Suppression: 4.2 KLD, Plantation: 1.62 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	NA
15	Crusher	:	NA
16	Nearest Water Body	:	Project lies on Amanat River.
17	Nearest Habitation	:	Kanke Khurd village, Approx. 680 meters towards North direction.
18	Nearest Railway Station	:	Daltonganj Railway Station, approx. 9.33 Km in WSW direction.
19	Nearest Air Port	:	Birsa Munda Airport, approx. 146.78 km towards ESE direction.
20	Nearest Forest	:	Open Scrub approx. 2.75 km in NNW direction from mining lease.
21	Road & Highways	:	SH-10, Approx. 2.40 Km in South direction from mining lease. NH-139, Approx. 7.51 Km in West direction from mining lease.

CO-ORDINATES

1	Latitude		From 24°05'04.473"N	To 24°05'09.720"N
2	Longitude		From 84°08'52.872"E	To 84°09'09.685"E

LAND DETAILS

Khata no.	Plot no.
29	617

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, Patan (Palamau) vide letter no. 408, dated 26.04.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Palamau, Medininagar vide memo no. 699/M, dated 19.04.2024 certified that no other mining lease area exists within 500 m radius from proposed project site.

4	DFO Wild Life	:	Deputy Director, Palamau Tiger Project, South Division vide letter no. : 393, dated 09.05.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palamu Wildlife Sanctuary, Betla National Park and Mahuadanr Wolf Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Medininagar Forest Division, Medininagar vide letter no. 1303, dated 19.04.2023 certified that the distance of forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved District Survey Report (DSR) of Palamau District (Sl. No. 13, Page no. 82).
7	Gram Sabha	:	BDO, Patan (Palamau) vide letter no. 525, dated 24.04.2024 informed that Gram Sabha conducted on 24.04.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Palamau vide Letter No. 436/M, dated 21.03.2024.
9	Qualified Person	:	Shri Vidya Bhusan 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	:	4.08 ha. or 10.08 Acres	Life of Mine – 5 Years
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 – 2.0m & Bench width - 20.0 m.	
7	Elevation of Mine	:	204 mRL to 208 mRL. (maximum2m)	
8	Ground Level Elevation	:	204 mRL	
9	Ultimate Working Depth	:	2.0 m	
10	Water Table	:	NA	
11	Topography of Mine	:	Area lying in river plain.	
12	Explosive Requirement	:	NA	
13	Diesel/Fuel requirement	:	NA	

Production Details

Year	Thickness (m)	Average Replenishment Rate	Production of sand (Cum)	Production of sand –MT
1st	2	100%	76980	123938

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)	4.08
Residential area	Nil
Company land	Nil
Private Land	Nil
Total	**4.08**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Plantation along both sides of approach road		700m	700
3	No. of Plants distributed with consultation local authorities/ village Panchayat		--	100

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

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
m. Transportation from the river bed to the NH 139 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.

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

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

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

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

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

Road accidents

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

Preventive Measures;

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

Dust generation

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

Noise Generation

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

Preventive measures

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

Health Hazards

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

Measures

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

- Regular water sprinkling on haulage roads
- Tree plantation on both sides of haulage road
- Tippers / Tractors carrying sand would be covered

- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

Accident at Site

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

Preventive measures

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

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

Transportation

The usual method of transporting minerals from the working face is by 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 Kanke Khurd Sand Deposit (In the River bed of Amanat) of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Kanke Khurd, Block : Patan, Distt. : Palamau, Jharkhand (4.08 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. 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.

II. 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.

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

IV. Pre-employment Occupational health 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.

V. 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.

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

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

VIII. 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.

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

X. 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.

XI. 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.

XII. 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.

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

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

XV. 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.

XVI. 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.

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

XVIII. No labour camp shall be allowed in riverbed.

XIX. 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.

XX. 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.

XXI. 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.

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

XXIII. 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.

XXIV. 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.

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

XXVI. 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.

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

XXVIII. 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.

XXIX. 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.

XXX. 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 and decided by regulatory authority while granting Environmental Clearance in consultation with irrigation department. 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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13. North Koyal Sand Ghat - 8 (In the River bed of North Koyal) of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Bakoia & Chheriaha, Block : Majhiaon, Distt. : Garhwa, Jharkhand (4.38 Ha).

(Proposal No : SIA/JH/MIN/ 471916/2024)

Project Category: **B2 – Application for Environment Clearance**

EC Application for: **Proposed Capacity- 82679 Cum/Annum or 132286 TPA (dry basis).**

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

This is a new project which has been taken for appraisal on 17.05.2024.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	North Koyal Sand Ghat-8 (in the river bed of North Koyal)	
2	Lessee:	:	M/s Jharkhand State Mineral Development Corporation Limited. (A Govt. of Jharkhand Enterprises)	
3	Lessee Address	:	Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand)	
4	Lease Area	:	4.38 ha.	Acres- 10.82 Acre
5	Type of Land	:	Non-Forest Government waste Land (River Bed)	
6	Project Cost	:	Rs. 65 Lakhs	
7	EMP Budget	:	Capital: 4.475Lakhs	Recurring: 3.97Lakhs / year
8	New or Expansion	:	New	

9	Mineable Reserves	:	Cum: 412574 Cum	Tonnes: 660119 tonnes
10	Mine Life	:	Upto 15.08.2025 or as per provisions of Jharkhand State Sand Mining Policy 2017 & its amendment.	
11	Man power	:	21	
12	Water Requirement	:	8.01KLD (Drinking: 0.21 KLD, Dust Suppression: 5.7 KLD, Plantation: 2.10 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	NA	
15	Crusher	:	NA	
16	Nearest Water Body	:	On North Koyal River bed sand mining is proposed.	
17	Nearest Habitation	:	Bakoiya village, Approx. 630 meters towards West direction.	
18	Nearest Railway Station	:	Karkatta Railway Station approx. 2.07 Km in East direction.	
19	Nearest Air Port	:	Birsa Munda Airport approx.187.85 km towards ESE direction.	
20	Nearest Forest	:	Open Mixed Jungle, Approx. 9.20 Km in WSW direction from mining lease. Kholra P.F, Approx. 8.95 Km in SW direction from mining lease.	
21	Road & Highways	:	NH-39, Approx. 15.80 Km in South direction from mining lease.	

CO-ORDINATES

1	Latitude		From 24°18'00.7019"N	To 24°18'19.1258"N
2	Longitude		From 83°49'02.8931"E	To 83°49'11.0244"E

LAND DETAILS

Plot no.	
Bakoia	917 & 1549
Chheriaha	146

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, Majhiaon vide letter no. 166, dated 24.04.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan.
3	DMO	:	DMO, Garhwa vide memo no. 255/M, dated 15.04.2024 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	Deputy Director, Palamau Tiger Project, South Division vide letter no. : 394, dated 09.05.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palamu Wildlife Sanctuary, Betla National Park and Mahuadanr Wolf Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Garhwa North Forest Division vide letter no. 572 & 573, dated 28.03.2023 certified that the distance of forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved District Survey Report (DSR) of Garhwa District (Sl. No. 16).
7	Gram Sabha	:	Nagar Panchayat, Majhiaon vide letter no. 392, dated 03.05.2024 informed that Gram Sabha conducted on 03.05.2024.
8	Mine Plan Approval	:	Approved by Assistant Mining Officer, Garhwa vide Letter No. 254, dated 15.04.2024.
9	Qualified Person	:	Shri Vidya Bhusan 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	:	4.38 ha. or 10.82 Acre	Life of Mine – 5Years
3	Waste Generation	:	00 cum	
4	Stripping Ratio	:	0:0	
5	Working Days	:	200 Days	
6	Benches: size & No	:	Bench Height – 2.02m	
7	Elevation of Mine	:	155mRL to 160mRL (Maximum 2.02m)	
8	Ground Level Elevation	:	155mRL	
9	Ultimate Working Depth	:	2.02m	
10	Water Table	:	NA	
11	Topography of Mine	:	Area lying in river plain.	
12	Explosive Requirement	:	None. No blasting required.	

13	Diesel/Fuel requirement	:	Not required for mining.

Production Details

Year	Productionof sand(Cum)	Production of sand –tonne	Bench RL in Meters
1st	81860	130976	NA

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

Land Use

Type of Land	Area in (ha)
Forest Land	Nil
Govt. waste land (River)	4.38
Residential area	Nil
Company land	Nil
Private Land	Nil
Total	**4.38**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Plantation along both sides of approach road		950 m	950
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.

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
m. Transportation from the river bed to the NH 39 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.

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

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

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

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

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

Road accidents

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

Preventive Measures;

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

Dust generation

No drilling involved

- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

Noise Generation

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

Preventive measures

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

Health Hazards

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

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 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 North Koyal Sand Ghat - 8 (In the River bed of North Koyal) of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.),

Village : Bakoia & Chheriaha, Block : Majhiaon, Distt. : Garhwa, Jharkhand (4.38 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. 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.

II. 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.

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

IV. Pre-employment Occupational health 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.

V. 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.

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

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

VIII. 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.

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

X. 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.

XI. 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.

XII. 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.

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

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

XV. 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.

XVI. 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.

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

XVIII. No labour camp shall be allowed in riverbed.

XIX. 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.

XX. 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.

XXI. 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.

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

XXIII. 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.

XXIV. 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.

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

XXVI. 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.

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

XXVIII. 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.

XXIX. 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.

XXX. 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 and decided by regulatory authority while granting Environmental Clearance in consultation with irrigation department. 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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14. Bankata Sand Deposit (In the River bed of Subarnarekha) of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Bankata, Tehsil : Bahargora, Distt. : East Singhbhum, Jharkhand (4.40 Ha).

(Proposal No : SIA/JH/MIN/ 472833/2024)

Project Category: **B2 – Application for Environment Clearance**

EC Application for: **Proposed Capacity- 46575.00 Cum/Annum or 121793.63 TPA.**

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

This is a new project which has been taken for appraisal on 17.05.2024.

Project and Location Details:

Sl	Parameter		Details	
1	Project Name	:	Bankata Sand Deposit	
2	Lessee:	:	M/s Jharkhand State Mineral Development Corporation Limited	
3	Leasee Address	:	Khanij Nigam Bhawan, Doranda, Ranchi, Jharkhand-834002	
4	Lease Area	:	4.40 Ha	Acres- 10.87 Acre
5	Type of Land	:	Non-Forest – Govt. Waste Land (River)	

6	Project Cost	:	Rs. 1.4 Crores	
7	EMP Budget	:	Capital: 4.56 Lakhs	Recurring: 3.97 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	Cum: 232875 Cum	Tonnes: 608968.15 Tonnes
10	Mine Life	:	Upto 15.08.2025 or as per provisions of Jharkhand State Sand Mining Policy 2017 & its amendment.	
11	Man power	:	17	
12	Water Requirement	:	13.81~13.8 KLD (Drinking: 0.17 KLD, Dust Suppression: 10.08 KLD, Plantation: 3.56 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	:	Bankata village, Approx. 1.66Km towards North direction.	
18	Nearest Railway Station	:	Rajaloka Railway Station, approx. 10.47 Km in SW direction.	
19	Nearest Airport	:	Birsa Munda Airport approx. 184.47 km towards NW direction.	
20	Nearest Forest	:	Open Jungle Approx. 3.77 Km in East direction from mining lease. Open Scrub Approx. 2.53 Km in East direction from mining lease	
21	Road & Highways	:	NH-49, Approx. 2.62 Km in East direction from mining lease.	

CO-ORDINATES

1	Latitude		From 22° 13' 21.57"N	To 22° 13' 25.35" N
2	Longitude		From 86° 41' 09.59"E	To 86° 41' 24.45" E

LAND DETAILS

Khata no.	Plot no.
573	3161 (P) & 3162 (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, Bahragora vide letter no.: 812, dated 03.11.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	District Mining Officer, East Singhbhum, Jamshedpur vide memo no. 431/Khanan, dated 09.05.2024 certified that there is no other mining lease area exists within 500 m periphery from proposed project site.
4	DFO Wild Life	:	DFO, Dalma Elephant Project vide letter no.: 575, dated 16.04.2024 certified that the proposed project site is outside Eco Sensitive Zone of Dalma Wildlife Sanctuary.
5	DFO Forest Distance	:	DFO, Jamshedpur Forest Division vide letter no. : 2601, dated 11.11.2023 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 East Singhbhum, Jamshedpur District (Sl. No. 10, Page no. 61)
7	Gram Sabha	:	BDO, Bahragora vide letter no. 1717, dated 30.10.2023 informed that Gram Sabha conducted on 18.10.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, East Singhbhum, Jamshedpur vide memo no. 428/Khanan, dated 09.05.2024.
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	:	4.40 Ha or 10.87Acre	Life of Mine – 5 Years
3	Waste Generation	:	00 Cum	
4	Stripping Ratio	:	0:0	
5	Working Days	:	200 Days per year	
6	Benches: size & No	:	1.50m	
7	Elevation of Mine	:	45mRL to 50mRL	
8	Ground Level Elevation	:	45mRL to 50mRL	
9	Ultimate Working Depth	:	1.50 m	
10	Water Table	:	NA	
11	Topography of Mine	:	Area lying in river plain.	
12	Explosive Requirement	:	None. No blasting required.	

13	Diesel/Fuel requirement	:	Not required for mining.

Production Details

Year	Production ofsand (Cum)	Production of Sand (tonne)	Bench RL in Meters
1st	46575.00	121793.63	NA

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

Land Use

Type of Land	Area in (ha)
Forest Land	Nil
Govt. waste land (River)	4.40
Residential area	Nil
Company land	Nil
Private Land	Nil
Total	**4.40**

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Plantation along both sides of approach road		1680m	1680
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.

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

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

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

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- 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.

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

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- Proper maintenance of haulage roads

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

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 Bankata Sand Deposit (In the River bed of Subarnarekha) of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Bankata, Tehsil : Bahargora, Distt. : East Singhbhum, Jharkhand (4.40 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

I. 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.

II. 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.

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

IV. Pre-employment Occupational health 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.

V. 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.

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

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

VIII. 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.

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

X. 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.

XI. 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.

XII. 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.

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

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

XV. 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.

XVI. 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.

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

XVIII. No labour camp shall be allowed in riverbed.

XIX. 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.

XX. 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.

XXI. 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.

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

XXIII. 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.

XXIV. 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.

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

XXVI. 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.

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

XXVIII. 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.

XXIX. 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.

XXX. 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 and decided by regulatory authority while granting Environmental Clearance in consultation with irrigation department. 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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Day 3 : May 18th, 2024 [Saturday]

Consideration of proposals

1. **Proposed Multistoried Residential Project "AHANA" of M/s ADLN Superstructure LLP, Village : Sonari, P.O. + P.S. : Sonari, Distt. : East Singhbhum, Jharkhand.**

   (Proposal No : SIA/JH/INFRA2/ 472702/2024)

   Project Category: 8(a) Category B2 – Application for Environment Clearance.

   Name of the consultant: Visiontek Consultancy Services Pvt. Ltd., Bhubaneshwar, Odisha

   This is a new project which has been taken for appraisal on 18.05.2024.

Item	Details
Project Name	**"AHANA" Proposed Multistoried Residential Project [B+G+11] with other Utility over Revenue Khata no. 439 with Khesra No. 54&56 at Village-Sonari, P.O. Sonari, District – East Singhbhum- Jharkhand by M/s. ADLN Superstructure LLP.**
Location	Revenue Khata no. 439 with Khesra No. 54&56 at Village-Sonari, P.O. Sonari, District – East Singhbhum- Jharkhand.

Sl.	Latitude	Longitude
1	22°49'30.51"N	86°10'29.93"E
2	22°49'32.23"N	86°10'31.17"E
3	22°49'32.51"N	86°10'31.36"E
4	22°49'31.85"N	86°10'31.96"E
5	22°49'32.51"N	86°10'32.61"E
6	22°49'29.98"N	86°10'33.22"E
7	22°49'32.07"N	86°10'34.06"E
8	22°49'30.28"N	86°10'34.11"E
9	22°49'31.13"N	86°10'34.65"E
10	22°49'32.11"N	86°10'35.11"E
11	22°49'31.68"N	86°10'35.31"E
12	22°49'30.77"N	86°10'37.01"E

	13	22°49'31.41"N	86°10'37.06"E

Total Built-Up Area & its break - up

S. No.	Description	Total Area (S.qm.)
1	Plot Area	7169.57 m^2 or 1.771 Ac or 0.717
2	Proposed Ground Coverage	1731.46 sqm (24.15 % of the plo area)
3	Green belt/Plantation Area	1482.82 sqm (20.68 % of the plo area)
4	Internal Road & Paved Area	1676.84 sqm (23.39 % of the plo area)
5	Other services	2278.75 sqm (31.78% of the plo area)
6	Total Built Up Area	30572.39 sqm
7	F.A.R	Proposed: 2.98 (permissible: 3.0
8	Maximum height of building	41.73 m (45.26 m including stair/lift cabin)
9	Total no. of Dwelling Units	Total: 88 (Residential flats: 3BHK-44 no. & 4BHK-44 Units)
10	No. of Floors	Basement, Ground Floor and 11 Floors

Height	41.73m	45.26 m including stair/lift cabin
Number of Block	Four Towers (A, B, C & D)	
Population	Total No. of Occupancy: 572	Floating Population: 57
Municipal Solid Waste	Total Waste =266 Kg/day (~ 0.266 T/day) Bio-Degradable = 106 Kg/day or say 0.106 T/day Non-Biodegradable= 160 Kg/day or say 0.160 T/day	
Parking	Total 153 ECS (Equivalent Car Space Provided) provided for residential area and visitors. Total no. of parking provided for Two-wheeler are 181.	

	Vehicle Type	Reqd.		Proposed	
		No. of ECS	Area in m^2	No. of ECS	Area in m^2
	Car parking for residential	132	1650.0	134	3347.74
	Car parking for Visitors	14	175.0	19	266.0
	Two-Wheeler - Residential	88	176.0	164	1714.3
	Two-Wheeler - Visitors	9	18.0	17	266.0
	Total Parking	Cars – 146 Two-wheelers – 97	2019.0	Cars – 153 Two-wheelers – 181	5594.04
Power Requirement	Total Power Required: 781 KW. Connected Load – 1 MVA DG Set: 03 no. of DG sets 2x250 KVA + 1x100 KVA Total Solar Power/Lighting 80 KW (10% of electricity consumption)				
RWH Pits	2 Nos of Recharge pit				
Total no. of Dwelling Units	Total: 88				
No. of Floors	B+G+11				
Total Project Cost	Rs. 98.18 Crores.				
EMP Cost (Construction Phase)	Capital Cost: Rs. 39.60 Lakh Recurring Cost: Rs. 4.80 Lakh				
EMP Cost (Operational Phase)	Capital Cost: Rs. 94.05 Lakh Recurring Cost: Rs. 12.00 Lakh				
Disaster Management	Separate Assembly Points will be marked for each section. Residents will be made aware of the safety protocols and escape routes.				

Khata & Plot no. of the project :

Khata no.	Plot no.
New - 439	New - 54 & 56
Old - 7	Old – 536, 537, 538, 539, 540 & 541

❖ **Water & Wastewater**

S. No.	Description	Type of flats	Number of flats	Total Population	Domestic water requirement @ 67lpcd	Flushing water requirement @ 33lpcd	Total water requirement
1	Tower A	3 BHK	22	132	8844	4356	13200
2	Tower B	4 BHK	22	154	10318	5082	15400
3	Tower C	4 BHK	22	154	10318	5082	15400
4	Tower D	3 BHK	22	132	8844	4356	13200
5	Floating population @ 10 %			57	570	285	855
	Total			**629**	**38894**	**19161**	**58055**

STP: STP of capacity 100KLD, based on MBBR technology will be installed.Wastewater generated 51 KLD will be treated in the STP and recovered water 43 KLD will be reused for various purposes, such as flushing, horticulture, washing etc. During rainy season 12 KLD of treated wastewater will be discharge to nearest Drain /Public sewer as per CPCB Standards.

❖ **Connectivity**

Sl.	Areas	Distance in Kilometers / Details
1	River/Spring/ Water Reservoir etc.	Subarnarekha River-0.34 km, NE Sitarampur Reservoir-8.12 km, SW Dimna Reservoir-7.57 km, NE
2	Nearest Road Bridge	Domuhani Bridge (Kandarbera-Sonari Road over Swarnarekha River) – 1.07 Km (NNW)
3	Railway Station	Adityapur railway station - 4.98 km, South Tatanagar railway station - 6.75 km, SSE
4	Nearest National Highway	NH-23-3.18 km, NE NH-33-4.06 km, NNE
5	Nearest Airport	Sonari- 1.25 Km S Birsa Munda, Ranchi-105 Km NW
6	Nearby Town	Jamshedpur – site within the town
7	Hospitals/Schools	Carmel Junior College – 0.59 Km WSW Tata Memorial Hospital (TMH) – 2.68 Km SSE

8	Monuments/Archaeological Site	Nil within 500m
9	Forest (PF/RF)	Dobo Forest-1.66 km, NW Dalma Forest-3.72 km, N
10	Nat. Park, Wildlife Sanctuary	Dalma Wildlife Sanctuary - 3.72 km, N
11	Interstate Boundary	Not within 10 Km

❖ **Project Surroundings**

Project site is located in Sonari, Jamshedpur Notified Area.

Nearest Airport - Sonari Airport

Nearest Highways - NH-33

Nearest Railway Station - Adityapur Railway Station

Nearest City - Jamshedpur- site within the town

River Body - Subarnarekha River

Site Topography - mostly flat with slight undulation

Archaeological Site - None within 10 km Radius

National Parks - None within 10 km Radius

Protect / Reserve Forest - Dalma Forestsituated within 10 km Radius

Seismicity - Zone II

❖ **Solid Waste Management**

Construction Phase

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

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

Demolition of existing 10 nos. hutments in the site will be done along with the construction work. Brickbats, wastes of concrete would also be stored for road construction, plinth filling, etc. Surplus C & D waste would be handed over to Municipal Waste Management Facility. E-Waste &Hazardous waste (cans of paints would be collected in separate coveredareas and handed over to registered recyclers. Recyclable wastes including bags, packing, pieces of steel rods etc. will be sold to scrap dealers.

Operational Phase

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

- ✓ Recyclable Waste - Blue
- ✓ Wet (Bio-Degradable) Waste - Green
- ✓ E-Waste - Yellow
- ✓ Hazardous Waste - Red
- ✓ Inert Waste - Blue

- E-Waste & Hazardous Wastes generated, if any, would be handed over to authorized recyclers/re-processors.
- Total Municipal Solid Waste generation will be approx. 0.266 T/day.
- Biodegradable Waste – 0.106 T/day (waste vegetables and foods etc.)
- The biodegradable organic wastes will be treated inside the premises by OWC (Organic Waste Converter) having capacity of 130 kg/day.
- Non-biodegradable or recyclable –0.160 T/day. (Papers, cartons, thermo-cool, plastics, glass etc.)
- Non-recyclable wastes will be disposed through Govt. approved agency with help of local body.
- Total area for storage and segregation of waste =10 M^2
- Total area requirement for organic waste composting = 7M^2

❖ **Energy Saving Measures:**

- Use of local building material to reduce pollution & transportation energy.
- All the pumps shall have minimum efficiency as per ECBC norms.
- Energy efficient building envelope-use of fly ash bricks/AAC blocks for external wallsInsulation to roof.
- Programmable switching arrangement for external lighting to prevent wastage of energy.
- Energy efficient lighting fixture LED lamps to be provided in common areas.
- Total Solar Power/Lighting 80 KW (10% of electricity consumption)

STATUTORY CLEARANCES

1	DFO Wildlife	:	DFO, Dalma Elephant Project vide letter no. 80, dated 13.01.2024 certified that the proposed project site is outside Eco Sensitive Zone of Dalma Wildlife Sanctuary.
2	DFO Forest	:	DFO, Jamshedpur Forest Division, Jamshedpur vide letter no. 143, dated 12.01.2024 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
3	CO certificate	:	The CO, Jamshedpur, East Singhbhum vide letter no. 1446, dated 28.08.2023 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatiyan & Register II.
4	AAI NOC	:	Airport Authority of India NOC for height clearance vide NOC Id-JAMS/EAST/B/100923/802160, dated 07.11.2023.
5	Fire Department	:	A fire advisory has been issued by Fire Department, Jharkhad, Ranchi vide memo no. 1219/Tech./2024, dated 18.02.2024.
6	Application for permission of Tree felling	:	Application for permission of Tree felling vide acknowledgment no. ACK379372INS & ACK551115INS. Tree felling will be done only after permission from concerned DFO.
7	Building Plan	:	Application for approval of building plan vide application no. JNAC/GH/0051/W1/2024

Based on the presentation made and information provided, the Committee decided that the proposal for Proposed Multistoried Residential Project "AHANA" of M/s ADLN Superstructure LLP, Village : Sonari, P.O. + P.S. : Sonari, Distt. : East Singhbhum, Jharkhand is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure –III alongwith the following specific conditions :

I. Ground water to be drawn for use in the project only after obtaining permission from the Competent Authority.

II. 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.

III. All raw material to be stored only under covered shed.

IV. PAs to offset (upto20%) consumption of conventional energy sources by promoting use of solar energy, passive energy utilization, optimum fenestration, shading effect and heat islands.

V. Developers to promote energy conservation measures such that it offsets not less than 02 % of connected load. It is to be achieved by solar panels etc meeting ECBC norms.

VI. Trees should be developed & maintained not less than 15% of project area.

VII. Organic Waste Converter (OWC) to be installed of sufficient capacity such that all organic waste (bio degradable) generated is composted at source only.

VIII. Developers/Company to install STP of sufficient capacity such that all the sewer produced is treated and reused.

IX. Developers/Company to install Rain water harvesting structures such that all the roof top water runoff is collected and harvested including reuse on 100% basis.

X. Developers/Company to conduct and submit carbon footprint and carbon sequestration study report including mitigation measures as a part of EC compliance.

XI. Water runoff originating from open non constructed areas of project premises to be harvested /guided in such a way that it does not create water logging condition outside.

XII. Sufficient number of EV fast charging points to be installed.

XIII. MSW Collection centre should be located in isolated and preferably unmanned area. Movement of the vehicle carrying waste should be under tarpaulin covered condition only. Route of vehicle should be such that it avoids residential areas as far as practical.

XIV. ISO 14k EMS system standard to be followed for implementation of EMPs with MRM in place for feedback to Sr management.

XV. A cycling tract to be provided in residential complex so as to save on fuel and make in campus movement environment friendly.

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2. **Integrated Municipal Solid Waste Management Processing Facility for Bundu Nagar Panchayat, Village : Bundu, Tehsil : Bundu, Distt. : Ranchi, Jharkhand.**

(Proposal No. : SIA/JH/INFRA2/454392/2023).

Name of the consultant : Wolkem India Ltd., Udaipur.

The ToR application was filed as a new proposal for processing of the Municipal Solid Waste along with Secured Land Fill (SLF). Accordingly, ToR was granted by SEIAA, Jharkhand vide letter no. EC/SEIAA/2021-22/2436/2021/224, dated 06.08.2022 as a green field project for Common Municipal Solid Waste Management Facility.

At a time of appraisal for EC, SEAC came to know that the construction and installation of the processing facilities has already been completed, whereas the ToR was granted for a green field project. This fact was not declared by PAs / Consultant at the time of final ToR application.

The consultants categorically accepted that the constructions and installation of processing facilities has been completed.

The SEAC thus concludes that this is a violation project.

As per OM F.No. IA3-3/4/2024-IA.III[E230791] dated 08.01.2024 of MoEF&CC, Govt. of India there is a stay by the Hon'ble Supreme Court of India for consideration of any violation project for grant of EC.

In view of the above this project is being recommended for rejection and delisting and action against the PAs to be initiated by JSPCB under section 19 of Environment (Protection) Act, 1986.

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3. **Integrated Municipal Solid Waste Management Processing Facility for Godda Nagar Panchayat, Village : Dharmudih, Distt. : Godda, Jharkhand.**

   (Proposal No. : SIA/JH/ INFRA2/405826/2022).

   Name of the consultant : Wolkem India Ltd., Udaipur.

   The ToR application was filed as a new proposal for processing of the Municipal Solid Waste along with Secured Land Fill (SLF). Accordingly, ToR was granted by MoEF&CC, Govt. of India vide F. No. 10-14/2020-IA-III, dated 19.03.2020 as a green field project for Common Municipal Solid Waste Management Facility.

   At a time of appraisal for EC, SEAC came to know that the construction and installation of the processing facilities has already been completed, whereas the ToR was granted for a green field project. This fact was not declared by PAs / Consultant at the time of final ToR application.

   The consultants categorically accepted that the constructions and installation of processing facilities has been completed.

   The SEAC thus concludes that this is a violation project.

   As per OM F.No. IA3-3/4/2024-IA.III[E230791] dated 08.01.2024 of MoEF&CC, Govt. of India there is a stay by the Hon'ble Supreme Court of India for consideration of any violation project for grant of EC.

   In view of the above this project is being recommended for rejection and delisting and action against the PAs to be initiated by JSPCB under section 19 of Environment (Protection) Act, 1986.

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4. **Dugdugia – A Stone Mine of M/s Vivaan Enterprises (Partner : Shri Ishan), Village : Dugdugia, Thana : Khunti, Distt. : Khunti, Jharkhand (1.08 Ha).**

(Proposal No : SIA/JH/MIN/ 471957/2024)

Project Category: **B2 – Application for Environment Clearance**

EC Application for: **Proposed Capacity: 12250 Cum Per Annum/33075 Ton Per 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 18.05.2024.

Project and Location Details:

S.No	Parameter		Details	
1	Project Name	:	Dugdugia-A stone mine	
2	Lessee	:	M/S- Vivaan Enterprises, Partner – Shri Ishan	
3	Lessee Address	:	R/O Shop no.4, R.N. Complex, upper bazar Ranchi, District Ranchi, Jharkhand – 834001	
4	Lease Area	:	Ha: 1.08 Ha	Acres: 2.67 Acres
5	Type of Land	:	Non-Forest Govt. Land	
6	Project Cost	:	36.50 Lakhs	
7	EMP Budget	:	Capital: 5.82Lakhs	Recurring: 2.4 Lakh / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	1,22,412 Cum	3,30,512 Ton
10	Mine Life	:	10.0 Years	
11	Man power	:	17	
12	Water Requirement	:	Total water requirement is about 6.77 KLD=0.77 KLD (Drinking & Domestic Uses) + 3.0 (Plantation) KLD + 3.0 KLD (Dust Suppression).	
13	Water Source	:	by Authorised hired water tankers	
14	DG Set / power	:	125KVA (Temporary setup for Backup)	
15	Crusher	:	Yes (Capacity-50ton/h)	
16	Nearest Water Body	:	Pond near Dugdugia Village is about 0.18 km in NNE direction.	
17	Nearest Habitation	:	Nearest Habitation is about 0.54 km in NNW direction	
18	Nearest Rail Station	:	Lodhma Railway Station is about 13.36 km in NW direction.	
19	Nearest Airport	:	Birsa Munda Airport, Ranchi is about 18.96 km in N direction.	
20	Nearest Forest	:	Kala Pahad Forest is about 7.5 km in NW direction.	
21	Road & Highways	:	Gulma Khunti Road is about 3.22 km in NW direction.	

CO-ORDINATES

P.NO	LATITUDE	LONGITUDE	P.NO	LATITUDE	LONGITUD
1	23°08'31.793"N	85°17'48.401"E	7	23°08'28.819"N	85°17'49.239"E
2	23°08'31.392"N	85°17'51.681"E	8	23°08'29.513"N	85°17'48.914"E
3	23°08'29.492"N	85°17'51.78[illegible]E	9	23°08'29.422"N	85°17'47.094"E

4	23°08'28.365"N	85°17'51.578"E	10	23°08'31.104"N	85°17'46.962"E
5	23°08'28.451"N	85°17'49.985"E	11	23°08'31.032"N	85°17'48.216"E
6	23°08'28.896"N	85°17'49.770"E			

LAND DETAILS

Khata no.	Plot no.
51	1245 (P)

STATUTORY CLEARANCES

1	LOI/Lease docs	The Letter of Intent (LOI) has been issued by Director, Mines, Deptt. of Mines & Geology, Govt. of Jharkhand vide letter no. Kha. Ni (Nilami)-68/2022 - 852, dated 24.04.2023.
2	CO	The CO, Sadar, Khunti vide letter no.: 483, dated 22.07.2023 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 distance of habitation of 15 houses at a distance of 260 m of proposed project site, accordingly PAs has submitted FMP for the same.
3	DMO Cluster Certificate	District Mining Officer, Khunti vide memo no. 355/M, dated 30.04.2024 certified that there is 01 other mining lease area (5.80 Acre) exists within 500 m periphery from proposed project site and total area is 8.47 Acre.
4	DFO Wild Life	DFO, Wildlife Division, Ranchi vide letter no.: 465, dated 24.05.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	DFO, Khunti Forest Division vide permission letter no. : LETTER20230608, dated 08.06.2023 certified that the distance of reserved / protected Forest is more than 250 meter from proposed project site.
6	DSR	The DMO, Khunti has been certified vide letter no. 342/M, dated 27.04.2024 that this project is mentioned in approved DSR of Khunti District as a list of runnin mining lease (Sl. no. 22).
7	Gram Sabha	BDO, Khunti vide letter no. 1327(ii), dated 30.10.2023 informed that Gram Sabha conducted on 26.10.2023.
8	Mine Plan Approval	Approved by Assistant Mining Officer –cum- District Mining Officer, Khunti vide memo no. 245/M, dated 23.03.2024.

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	:	1.08 ha/2.67Acre	Life of Mine – 10.0 years
3	Waste Generation	:	5 years–Nil	
4	Stripping Ratio	:	1:0.0	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m (3 No. of Benches)	
7	Highest Elevation of lease Area	:	633 AMSL	
8	Lowest Elevation of lease Area		631 AMSL	
9	Ultimate Working Depth	:	602 AMSL	
10	Water Table	:	594 Amsl (37BGL) (from Lowest elevation)	
11	Topography of Mine	:	almost flat and minedout land	
12	Explosive Requirement	:	Tentative 13 to 14kg/per day	
13	Diesel/Fuel requirement		324 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	00	12232	33026	Construction & Road
2nd	00	12243	33056	Construction & Road
3rd	00	12241	33051	Construction & Road
4th	00	12250	33075	Construction & Road
5th	00	12246	33064	Construction & Road
Total	**00**	**61212**	**165272**	
Maximum Production proposed- 12250CUM/33075TPA				
Stripping Ration in (m3/t)- 1:0.0				

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	0.44	0.70	0.74(rain water accumulate in open pit 122412cum)
Haul Road	0.01	0.01	0.01
Proposed Crusher	0.00	0.04	Remove from lease area
Green belt in Safety Zone	0.00	0.33	0.37

Dump with Parapet wall & Garland drain	0.00	0.00	0.00
Total area in use	0.45	**1.08**	**1.08**
Balance unused area	0.63	0.00	0.00
Balance used area	0.00	0.00	0.00
Total Applied Lease Area	**1.08**	**1.08**	**1.08**

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.37 Ha	528 trees @ 1600 trees per ha
2	Other Identified area i.e Plantation in Government School Village Dugdugia in consultation with Gram Panchayat	:	NIL	100 trees
3	Haul /Approach Road	:	100m	133 Approach Rd.- **(2 row Plantation)** 100 Meter 100/3 x 2 x2=133plant

- 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

- There is no Mine waste generation.

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 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 between5 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.

During the presentation the following documents were sought :

i. Revised Green belt plan with provision of 2 row plantation and fruit bearing trees shall be submitted by the PP.

ii. Water table depth representation shall be updated with proposed Mining area instead of Mined out word.

iii. Risk Management Plan to be updated and submitted.

iv. Undertaking regarding statuary clearance and other points related to project site shall be updated and submitted.

The Project Authorities have submitted the above mentioned documents.

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 Dugdugia – A Stone Mine of M/s Vivaan Enterprises (Partner : Shri Ishan), Village : Dugdugia, Thana : Khunti, Distt. : Khunti, Jharkhand (1.08 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. **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.**
II. **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.**

III. 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.

IV. 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.

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

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

****

5. **Gasedag Stone Deposit of Shri Sumit Jaiswal, Mouza : Gasedag, Thana : Ranka, Distt. : Garhwa, Jharkhand (1.517 Ha).**

(Proposal No : SIA/JH/MIN/ 472302/2024)

Project Category: **B2 – Application for Environment Clearance**

EC Application for: **Stone: 62,934.84 MT PER YEAR**

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 18.05.2024.

Project and Location Details:

S. No	Parameter		Details	
1	Project Name	:	Gasedag Stone Deposit	
2	Lessee	:	Shri Sumit Jaiswal S/o Shri Rohit Jaiswal	
3	Lease Address	:	R/O- Jatrahibag College Road, Thana- Chatra, District- Chatra, Jharkhand	
4	Lease Area	:	Ha: 1.517 Ha	Acres: 3.75 Acres
5	Type of Land	:	Non-Forest – Raiyati Land	
6	Project Cost	:	38 Lakhs	
7	EMP Budget	:	Capital: 4.23 Lakhs	Recurring: 3.0 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	Cu.M.: 2,33,112.9 Cum	Tonnes: 6,29,404.83 Tons
10	Mine Life	:	9 Years 11 month	
11	Man power	:	22	

12	Water Requirement	:	Total water requirement is about 6.99 KLD, Drinking water (human) about 0.99, water sprinkling (Source-Near Canal/Water Tanker) 3.02 about, Plantation about 3.0 KLD
13	Water Source	:	By Authorised hired water tankers
14	DG Set / power	:	Not Required
15	Crusher	:	No
16	Nearest Water Body	:	Pond near Gasedag Village is about 0.60 km in W direction.
17	Nearest Habitation	:	Daltonganj is about 25.82 km in NE direction.
18	Nearest Rail Station	:	Barwadih Junction Railway Station is about 27.75 km in ESE
19	Nearest Airport	:	Gaya International Airport is about 144.93 km in NE direction.
20	Nearest Forest	:	Kasmar Protected Forest is about 1.50 km in SE direction.
21	Road & Highways	:	NH- 343 is about 10.25 km in NW direction.

CO-ORDINATES

Pillar No.	Latitude	Longitude
1	23°54' 9.864" N	83°51' 6.185" E
2	23°54' 10.788" N	83°51' 6.051" E
3	23°54' 12.256" N	83°51' 6.314" E
4	23°54' 12.267" N	83°51' 7.153" E
5	23°54' 12.466" N	83°51' 7.144" E
6	23°54' 12.741" N	83°51' 6.700" E
7	23°54' 13.427" N	83°51' 6.748" E
8	23°54' 13.556" N	83°51' 7.367" E
9	23°54' 14.070" N	83°51' 7.584" E
10	23°54' 14.711" N	83°51' 7.804" E
11	23°54' 14.061" N	83°51' 9.100" E
12	23°54' 13.349" N	83°51' 10.309" E
13	23°54' 13.083" N	83°51' 10.776" E
14	23°54' 12.460" N	83°51' 10.554" E
15	23°54' 11.247" N	83°51' 10.221" E
16	23°54' 10.628" N	83°51' 10.590" E
17	23°54' 9.980" N	83°51' 10.433" E

18	23°54' 9.365" N	83°51' 9.303" E
19	23°54' 9.653" N	83°51' 8.172" E
20	23°54' 9.745" N	83°51' 7.449" E

LAND DETAILS

Khata no.	Plot no.
183	518/2546 (P) & 518

STATUTORY CLEARANCES

1	LOI/Lease docs	The Letter of Intent (LOI) has been issued by Assistant Mining Officer, Garhwa vide letter no. 695/M, dated 30.05.2023.
2	CO	The CO, Ranka vide letter no.: 177, dated 17.04.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster Certificate	District Mining Officer, Garhwa vide memo no. 375/M., dated 10.05.2023 certified that there is 01 other mining lease area (4.90 Acre) exists within 500 m periphery from proposed project site and total area is 8.65 Acre.
4	DFO Wild Life	Deputy Director, Palamau Tiger Project, North Division, Medininagar vide letter no.: 566, dated 11.05.2023 certified that the proposed project site is outside Eco Sensitive Zone of Betla National Park, Mahuadanr Wolf Sanctuary & Palamau Tiger Reserve.
5	DFO Forest Distance	DFO, Garhwa South Forest Division vide letter no.: 1054, dated 19.04.2023 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 Garhwa District (Sl. No. 16, Page no. 78).
7	Gram Sabha	BDO, Ranka vide letter no. 386, dated 25.04.2023 informed that Gram Sabha conducted on 24.04.2023.
8	Mine Plan Approval	Approved by Assistant Mining Officer, Garhwa vide memo no. 866/M0, dated 27.06.2023.
9	Qualified Person	Shri Vidya Bhusan Mishra vide email dated 18.05.2024 confirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast & Semi Mechanized	
2	Lease Area	:	1.517 HA.	Life of Mine – 10 years
3	Waste Generation	:	5 years– 33634.80 Cu.M	
4	Stripping Ratio	:	1:0.04	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Highest Elevation of lease Area	:	360 mRL	
8	Lowest Elevation of lease Area		349 mRL	
9	Ultimate Working Depth	:	337 mRL	
10	Water Table	:	322.65 mRL	
11	Topography of Mine	:	Undulating Small Hillocks	
12	Explosive Requirement	:	Tentative 13 to 14kg/per day	
13	Diesel/Fuel requirement		268 Litre/Day	

Production Details

Year	Production of stone In (Tonnes)	Overburden in cum	Intercalated waste in cum	Total waste in cum
1st	62934.84	22400.00	1226.80	**23626.80**
2nd	62791.20	0.00	1224.00	**1224.0**
3rd	62688.60	5120.00	1222.00	**6342.0**
4th	62791.20	0.00	1224.00	**1224.0**
5th	62483.40	0.00	1218.00	**1218.0**
Total	**313689.34**	**27520.00**	**6114.80**	**33634.80**

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	0.597	1.155 (0.305 ha. area shall be backfilled & 0.701 ha. area shall be left as water reservoir)
Road	0.00	0.004	0.00
Waste dump	0.00	0.288	Nil (Waste dump to be removed and backfilled)
Safety Zone	0.00	0.362	0.362

Plantation			
Total	0.00	1.251	1.517
Unused Area	0.00	0.266	0.00
Lease hold area	1.517	1.517	1.517

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.362 Ha	578 trees @ 1600 trees per ha
2	Other Reclaimed Area	:	NIL	NIL
3	Haul /Approach Road	:	565 m	753 Approach Rd.- **(2 row Plantation)** 565 Meter 565/3 x 2= 753 plant

- 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

During first, second, third, fourth- and fifth-year overburden & intercalated waste will be removed (33634.80m^3) this soil and waste will be temporarily backfilling.

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.

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would be diverted to settling sump for desilting.

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✓ 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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✓ 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.

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✓ It will be ensured that the drilling equipment is suitable for the job.

✓ The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.

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✓ Rough access roads

✓ Time pressure

✓ Inadequate brakes (Possibly from lack of maintenance)

✓ Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)

✓ Untrained drivers

✓ Overturning vehicles

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

Transportation

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

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

✓ Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.

✓ Mine road will be made sufficiently wide to keep two-way traffic.

✓ Mine roads will be designed as per the specifications given under MMR 1961.

✓ Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.

✓ All transportation within the mine lease area should be carried out directly under the supervision and control of management.

✓ The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.

✓ Navigation signs will be provided at each and every turning point up to the main road (wherever required)

✓ To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.

✓Only trained drivers will be hired.

Undertaking submitted affirming:

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.

During the presentation the following documents were sought :

i. Revised Green belt plan with provision of 2 row plantation and fruit bearing trees shall be submitted by the PP.

ii. Land Agreement copy shall be submitted.

iii. Water table depth representation shall be updated with proposed Mining area instead of Mined out word.

iv. Risk Management Plan to be updated and submitted.

v. Undertaking regarding statuary clearance and other points related to project site shall be updated and submitted.

The Project Authorities have submitted the above mentioned documents.

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 Gasedag Stone Deposit of Shri Sumit Jaiswal, Mouza : Gasedag, Thana : Ranka, Distt. : Garhwa, Jharkhand (1.517 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. **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.**

II. **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.**

III. **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.**

IV. **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.**

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

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

****

6. **Gasedag Stone Deposit of Shri Prabhat Kumar Azad, Mouza : Gasedag, Thana : Ranka, Distt. : Garhwa, Jharkhand (1.983 Ha).**

(Proposal No : SIA/JH/MIN/ 472360/2024)

Project Category: **B2 – Application for Environment Clearance**

EC Application for: **Stone 81275.87 TONS PER YEAR/ 270.92TPD.**

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 18.05.2024.

Project and Location Details:

S. No	Parameter		Details	
1	Project Name	:	Gasedag Stone Deposit	
2	Lessee	:	Shri Prabhat Kumar Azad S/o- Shri Rameshwar Tiwari	
3	Lessee Address	:	R/O: Gram- Dhangartoli, Thana- Chatra, District- Chatra, Jharkhand	
4	Lease Area	:	Ha: 1.983 Ha	Acres: 4.90 Acres
5	Type of Land	:	Non-Forest – Raiyati Land	
6	Project Cost	:	43.0 Lakhs	
7	EMP Budget	:	Capital: 6.34 Lakhs	Recurring: 4.5 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	Cu.M.: 3,00,857 Cum	Tonnes: 812314.99 Tones
10	Mine Life	:	9 Years 11 Month	
11	Man power	:	25	
12	Water Requirement	:	Total water requirement is about 13.875 KLD= 0.875 (Drinking Water & Domestic Uses, 25 persons @35 LPCD) + 8.00 KLD (Water sprinkling) + 5.00 KLD (plantation).	
13	Water Source	:	By Authorised hired water tankers	
14	DG Set / power	:	Not Required	
15	Crusher	:	No	

16	Nearest Water Body	:	Tahle River is about 1.37 km in W direction.
17	Nearest Habitation	:	about 0.75 km in SSW direction
18	Nearest Rail Station	:	Mangra- Train station is about 26.81 km in E direction.
19	Nearest Airport	:	Gaya International Airport, is about 144.93 km in NE direction.
20	Nearest Forest	:	Kasmar Protected Forest is about 1.87 km in SE direction.
21	Road & Highways	:	NH-343 is about 10.48 km in NW direction.

CO-ORDINATES

Pillar No.	Latitude	Longitude	Pillar No.	Latitude	Longitude
1	23°54'13.1794"N	83°51'10.2256"E	15	23°54'08.2579"N	83°51'12.7269"E
2	23°54'12.9938"N	83°51'10.7642"E	16	23°54'08.4060"N	83°51'12.3021"E
3	23°54'12.6413"N	83°51'11.4778"E	17	23°54'08.4698"N	83°51'11.8789"E
4	23°54'11.9514"N	83°51'12.5143"E	18	23°54'08.5071"N	83°51'11.1275"E
5	23°54'11.7177"N	83°51'12.4124"E	19	23°54'08.5076"N	83°51'10.1447"E
6	23°54'11.5046"N	83°51'14.1023"E	20	23°54'08.4603"N	83°51'08.8772"E
7	23°54'11.4929"N	83°51'14.4878"E	21	23°54'08.5586"N	83°51'08.2391"E
8	23°54'11.3118"N	83°51'15.9785"E	22	23°54'08.9387"N	83°51'08.3100"E
9	23°54'11.2539"N	83°51'16.2168"E	23	23°54'09.6094"N	83°51'08.6215"E
10	23°54'10.9593"N	83°51'16.3133"E	24	23°54'10.2942"N	83°51'09.7638"E
11	23°54'10.6036"N	83°51'16.3152"E	25	23°54'10.7560"N	83°51'09.8296"E
12	23°54'07.8778"N	83°51'14.5651"E	26	23°54'11.0045"N	83°51'09.5681"E
13	23°54'07.4738"N	83°51'14.2154"E	27	23°54'11.3380"N	83°51'09.5142"E
14	23°54'08.0489"N	83°51'13.1265"E	28	23°54'12.0610"N	83°51'09.6350"E

LAND DETAILS

Khata no.	Plot no.
234	525 & 517
95	516 (P)

STATUTORY CLEARANCES

1	LOI/Lease docs	The Letter of Intent (LOI) has been issued by Assistant Mining Officer, Garhwa vide letter no. 750/M, dated 06.06.2023.
2	CO	The CO, Ranka vide letter no.: 227, dated 20.05.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO Cluster Certificate	District Mining Officer, Garhwa vide memo no. 754/M., dated 06.06.2023 certified that there is 01 other mining lease area (4.90 Acre) exists within 500 m periphery from proposed project site and total area is 8.65 Acre.
4	DFO Wild Life	Deputy Director, Palamau Tiger Project, North Division, Medininagar vide letter no.: 565, dated 11.05.2023 certified that the proposed project site is outside Eco Sensitive Zone of Betla National Park, Mahuadanr Wolf Sanctuary & Palamau Tiger Reserve.
5	DFO Forest Distance	DFO, Garhwa South Forest Division vide letter no.: 1053, dated 19.04.2023 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 Garhwa District (Sl. No. 17, Page no. 78).
7	Gram Sabha	BDO, Ranka vide letter no. 385, dated 25.04.2023 informed that Gram Sabha conducted on 24.04.2023.
8	Mine Plan Approval	Approved by Assistant Mining Officer, Garhwa vide memo no. 867/M0, dated 27.06.2023.
9	Qualified Person	Shri Vidya Bhusan Mishra vide email dated 18.05.2024 confirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast & Semi Mechanized	
2	Lease Area	:	1.983 ha	Life of Mine – 10.0 years
3	Waste Generation	:	5 years–38887.40 Cu.M	
4	Stripping Ratio	:	1:0.20	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m (3 No. of Benches)	
7	Highest Elevation of lease Area	:	362 Amsl	

8	Lowest Elevation of lease Area		352 Amsl
9	Ultimate Working Depth	:	337 RL(m)
10	Water Table	:	322.65 mRL
11	Topography of Mine	:	Small Hillock
12	Explosive Requirement	:	Tentative 13 to 14kg/per day
13	Diesel/Fuel requirement	:	268 Litre per day

Production Details

Year	Production of stone in tones	Overburden in cum	Intercalated waste in cum	Total waste in cum
1st Year	81113.00	14351.00	1581.15	15932.15
2nd Year	80787.24	16637.00	1574.80	18211.80
3rd Year	81275.87	0.00	1584.33	1584.33
4th Year	81113.00	0.00	1581.15	1581.15
5th Year	80950.12	0.00	1577.98	1577.98
Total	405239.22	30988.00	7899.40	38887.40

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	0.830	1.511 (0.450 ha area shall be backfilled & 0.661 ha area shall be left as water reservoir)
Road	0.00	0.007	0.0
Waste dump	0.00	0.346	NIL (Waste dump to be removed and backfilled)
Safety zone Plantation	0.00	0.472	0.472
Total	0.00	1.655	1.983
Unused Area	0.00	0.328	0.0
Lease hold area	1.983	1.983	1.983

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION			Area/Length	No of Trees
1	Safety Zone		:	0.472 Ha	754 trees @ 1600 trees per Ha
2	Other Reclaimed Area		:	NIL	NIL
3	Haul /Approach Road		:	492m	656

- 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

During first, second, third, fourth and fifth year overburden & intercalated waste will be removed (38887.40m3) this soil and waste will be temporarily backfilling.

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 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 between5 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.

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✓ Blast site shall be wetted before and after blasting operations are completed.

✓ Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.

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✓ Rough access roads

✓ Time pressure

✓ Inadequate brakes (Possibly from lack of maintenance)

✓ Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)

✓ Untrained drivers

✓ Overturning vehicles

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

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

✓ Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.

✓ Mine road will be made sufficiently wide to keep two-way traffic.

✓ Mine roads will be designed as per the specifications given under MMR 1961.

✓ Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.

✓ All transportation within the mine lease area should be carried out directly under the supervision and control of management.

✓ The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.

✓ Navigation signs will be provided at each and every turning point up to the main road (wherever required)

✓ To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.

✓Only trained drivers will be hired.

Undertaking submitted affirming:

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

During the presentation the following documents were sought :

i. Tree Inventory shall be submitted by PP for the trees existing at the site.

ii. Revised Green belt plan with provision of 2 row plantation and fruit bearing trees shall be submitted by the PP.

iii. Water table depth representation shall be updated with proposed Mining area instead of Mined out word.

iv. Risk Management Plan to be updated and submitted.

v. Land Agreement copy shall be submitted.

vi. Undertaking regarding statuary clearance and other points related to project site shall be updated and submitted.

The Project Authorities have submitted the above mentioned documents.

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 Gasedag Stone Deposit of Shri Prabhat Kumar Azad, Mouza : Gasedag, Thana : Ranka, Distt. : Garhwa, Jharkhand (1.983 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. **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.**

II. **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.**

III. **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.**

IV. **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.**

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

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

****

7. **Pindra Stone Mine of Shri Amit Kumar Sinha, Mouza : Pindra, Thana : Ranka, Distt. : Garhwa, Jharkhand (2.03 Ha).**

(Proposal No : SIA/JH/MIN/ 447397/2024)

Project Category: **B2 – Application for Environment Clearance**

EC Application for: **Stone: 1,02,101 CUM/ANNUM /2,85,883 TONS PER YEAR**

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 18.05.2024.

Project and Location Details:

S.No	Parameter		Details	
1	Project Name	:	Pindra Stone Mine	
2	Lessee	:	Amit Kumar Sinha	
3	Lessee Address	:	R/O- Near Police Line Shantipuri, Ward No. 20, Daltonganj Post & Thana – Daltonganj District - Palamu, Jharkhand- 822101	
4	Lease Area	:	Ha: 2.03 Ha	Acres: 5.0 Acres
5	Type of Land	:	Non Forest – Raiyati Land	
6	Project Cost	:	43.0 Lakhs	
7	EMP Budget	:	Capital: 5.62 Lakhs	Recurring: 3.0 Lakh / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	Cu.M. : 5,59,084 Cum	Tonnes: 15,65,435 Ton
10	Mine Life	:	4 Years 11 month	
11	Man power	:	25	
12	Water Requirement	:	Total water requirement is about 7.13 KLD= 1.13 KLD (Drinking Water & Domestic Uses, 25 persons @45 LPCD) + 3.0 KLD (Water sprinkling) + 3.0 KLD (plantation).	
13	Water Source	:	by Authorised hired water tankers	
14	DG Set / power	:	Not Required	
15	Crusher	:	No	
16	Nearest Water Body	:	Chatakman village pond is about 1.13 km in NE direction.	
17	Nearest Habitation	:	about 0.85 km in ENE direction	
18	Nearest Rail Station	:	Daltonganj Railway Station is about 30.06 km in ENE direction.	
19	Nearest Airport	:	Chainki Airport, is about 31.44 km in ENE direction.	
20	Nearest Forest	:	Ulka Pahad PF is about 2.24 km in WNW direction.	
21	Road & Highways	:	NH-343 is about 7.19 km in NW direction.	

CO-ORDINATES

Pillar No.	Latitude	Longitude
1	23°54'21.19"N	83°48'49.52"E
2	23°54'21.30"N	83°48'50.71"E
3	23°54'20.74"N	83°48'53.13"E
4	23°54'19.20"N	83°48'52.54"E
5	23°54'18.06"N	83°48'53.58"E
6	23°54'16.90"N	83°48'52.95"E
7	23°54'17.21"N	83°48'51.88"E
8	23°54'15.95"N	83°48'52.77"E
9	23°54'14.78"N	83°48'54.23"E
10	23°54'14.21"N	83°48'54.00"E
11	23°54'15.08"N	83°48'51.78"E
12	23°54'17.03"N	83°48'50.52"E
13	23°54'15.86"N	83°48'48.11"E
14	23°54'17.04"N	83°48'48.09"E
15	23°54'19.20"N	83°48'47.83"E

LAND DETAILS

Khata no.	Plot no.
6	138 & 149
45	110 (P) & 139
33	136 (P)

STATUTORY CLEARANCES

1	LOI/Lease docs	The Letter of Intent (LOI) has been issued by Assistant Mining Officer, Garhwa vide letter no. 1049/M, dated 27.07.2023.
2	CO	The CO, Ranka vide letter no.: 259, dated 08.06.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.

3	DMO Cluster Certificate	District Mining Officer, Garhwa vide memo no. 296/M., dated 30.04.2024 certified that there is 01 other mining lease area (6.97 Acre) exists within 500 m periphery from proposed project site and total area is 11.97 Acre.
4	DFO Wild Life	Deputy Director, Palamau Tiger Project, North Division, Medininagar vide letter no.: 699, dated 22.06.2023 certified that the proposed project site is outside Eco Sensitive Zone of Betla National Park, Mahuadanr Wolf Sanctuary & Palamau Tiger Reserve.
5	DFO Forest Distance	DFO, Garhwa South Forest Division vide letter no.: 1459, dated 15.06.2023 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 Garhwa District (Sl. No. 19, Page no. 78).
7	Gram Sabha	BDO, Ranka vide letter no. 642, dated 25.07.2023 informed that Gram Sabha conducted on 25.07.2023.
8	Mine Plan Approval	Approved by Assistant Mining Officer, Garhwa vide letter no. 1151, dated 24.08.2023.
9	Qualified Person	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been made by him.

Working Details

1	Mining Method	:	OCM	
2	Lease Area	:	2.03 ha	Life of Mine – 5.5 years
3	Waste Generation	:	5 years–17634 Cu.M	
4	Stripping Ratio	:	1:0.03	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m (4 No. of Benches)	
7	Highest Elevation of lease Area	:	416Amsl	
8	Lowest Elevation of lease Area		413Amsl	
9	Ultimate Working Depth	:	389Amsl	
10	Water Table	:	377Amsl (35BGL)	
11	Topography of Mine	:	almost flat land	
12	Explosive Requirement	:	120 Kg/Day	
13	Diesel/Fuel requirement	:	512 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	8442	100890	282492	Construction & Road
2nd	6851	101934	285415	Construction & Road
3rd	2341	101492	284178	Construction & Road
4th	00	101812	285074	Construction & Road
5th	00	102101	285883	Construction & Road
Total	**17634**	**508229**	**1423042**	
Maximum Production proposed- 102101Cum/285883Ton				
Stripping Ration in (m3/t)- 1:0.03				

Land Use

LAND USE PATTERN			
	Existing	First to Fifth	After Life to Mine
Category	**Area in Hectares**	**Area in Hectares**	**Area in Hectares**
Quarry	0.00	1.36	1.36 ha (Rain,Water Accumulate in pit 1565435cum)
Haul Road	0.00	0.02	0.00
Proposed Crusher	0.00	0.00	0.00
Greenbelt in Safety Zone	0.00	0.60	0.67
Dump with Parapet wall & Garland drain	0.00	0.00	0.00
Total area in use	0.00	**1.98**	2.03
Balance unused area	0.00	0.05	0.00
Balance used area	0.00	0.00	0.00
Total Applied Lease Area	**0.00**	**2.03**	2.03

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.60 Ha	960 trees @ 1600 trees per ha
2	Other Reclaimed Area	:	NIL	NIL
3	Haul /Approach Road	:	80 m	Approach Rd.- (2 row Plantation) 80 Meter 80/3*2*2= 107 plant

- 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

During first, second and third, year gritty soil & intercalated waste will be removed (33634.80m3). During plan period, gritty soil removed will be dumped at southern side with suitable precaution.

Some quantity of the removed gritty soil would also be used for road dressing and plantation.

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 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 between5 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.

During the presentation the following documents were sought :

i. Revised Green belt plan with provision of 2 row plantation and fruit bearing trees shall be submitted by the PP.

ii. Land Use table should be revised and submitted.
iii. Water table depth representation shall be updated with proposed Mining area instead of Mined out word.
iv. Risk Management Plan to be updated and submitted.

v. Land Agreement copy shall be submitted.

vi. Undertaking regarding statuary clearance and other points related to project site shall be updated and submitted.

The Project Authorities have submitted the above mentioned documents.

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 Pindra Stone Mine of Shri Amit Kumar Sinha, Mouza : Pindra, Thana : Ranka, Distt. : Garhwa, Jharkhand (2.03 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. **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.**

II. **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.**

III. **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.**

IV. **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.**

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

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

****

8. **Mahadevpur Stone Mine of Shri Lutfal Haque, Village : Mahadevpur, Thana : Pakur, Distt. : Pakur, Jharkhand (1.895 Ha).**

(Proposal No : SIA/JH/MIN/ 472616/2024)

Project Category: **B2 – Application for Environment Clearance**

EC Application for: **Stone: 51699 Cum/Annum /144757 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 18.05.2024.

Project and Location Details:

S.No	Parameter		Details	
1	Project Name	:	Mahadevpur Stone Mine	
2	Lessee	:	Shri Lutfal Haque	
3	Lessee Address	:	R/O- Badi Aliganj District- Pakur Jharkhand	
4	Lease Area	:	Ha: 1.895 Ha	Acres: 4.682 Acres
5	Type of Land	:	Non Forest – Raiyati Land	
6	Project Cost	:	55.0 Lakhs	
7	EMP Budget	:	Capital: 6.96 Lakhs	Recurring: 3.5 Lakh / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	Cu.M. : 4,13,392 Cum	Tonnes: 11,57,497 Ton
10	Mine Life	:	8.0 Years	
11	Man power	:	21	
12	Water Requirement	:	Total water requirement is about 7.63 KLD=0.63 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	:	125KVA (Temporary setup for Backup)	
15	Crusher	:	Yes (Capacity-50ton/h)	
16	Nearest Water Body	:	A Canal is about 0.22 km in S direction.	
17	Nearest Habitation	:	Nearest Habitation is about 0.50 km in E direction	
18	Nearest Rail Station	:	Kotalpukur - Train station is about 4.0 km in NNE direction.	
19	Nearest Airport	:	Malda Airport, West Bengal is about 44.61 km in NE direction.	
20	Nearest Forest	:	Baramasla PF is about 5.80 km in NNE direction.	
21	Road & Highways	:	NH-133A is about 7.2 km in S direction.	

CO-ORDINATES

S. No.	Latitude	Longitude
1	24°42'17.559" N	87°48'53.471" E
2	24°42'18.355" N	87°48'53.688" E
3	24°42'19.358" N	87°48'53.968" E
4	24°42'20.489" N	87°48'54.344" E
5	24°42'21.346" N	87°48'54.738" E
6	24°42'21.925" N	87°48'53.314" E
7	24°42'22.435" N	87°48'51.945" E
8	24°42'23.314" N	87°48'49.427" E
9	24°42'22.479" N	87°48'49.156" E
10	24°42 21.221" N	87°48'48.749" E
11	24°42 21.017" N	87°48'49.332" E
12	24°42'20.349" N	87°48'49.280" E
13	24°42'20.116" N	87°48'50.347" E
14	24°42'17.653" N	87°48'49.533" E
15	24°42'17.439" N	87°48'49.833" E
16	24°42'17.739" N	87°48'50.347" E
17	24°42'17.482" N	87°48'51.610" E
18	24°42'17.599" N	87°48'52.499" E

LAND DETAILS

Khata no.	Plot no.
03	151 (P)
07	153, 154, 155 (P), 163 (P), 164, 165, 166, 167, 168 & 169
10	152 (P)
33	170 & 171 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 371/M, dated 19.03.2024.
2	CO	:	The CO, Pakur vide letter no. 1589/Ra., dated 20.12.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Pakur vide memo no. 473/M, dated 08.04.2024 certified that 01 other mining lease area (5.22 Acre) exists within 500 m radius from proposed project site and total area is 9.902 Acre (4.01 Ha).
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1595, 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. 187, dated 30.01.2023 certified that the distance of reserved / protected forest land is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 14, Page no. 149) and same has been also certified by DMO, Pakur vide memo no. 481/M, dated 09.04.2024.
7	Gram Sabha	:	BDO, Pakur vide letter no. 1769/Vi., dated 11.09.2023 informed that Gram Sabha conducted on 09.09.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 594/M, dated 09.05.2024.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been made by him.

Working Details

1	Mining Method	:	OCM &Mechanized	
2	Lease Area	:	1.895 ha	Life of Mine – 8.0 years
3	Waste Generation	:	5 years–40713 Cu.M	
4	Stripping Ratio	:	1:0.06	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Highest Elevation of lease Area	:	33Amsl	

8	Lowest Elevation of lease Area		31Amsl
9	Ultimate Working Depth	:	01Amsl
10	Water Table	:	-09Amsl (40BGL)
11	Topography of Mine	:	almost flat land
12	Explosive Requirement	:	66.15 Kg/Day
13	Diesel/Fuel requirement		576Litre/Day

Production Details

Year	Generation of Waste/O.B in cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	20945	44863	125616	Construction & Road
2nd	19768	48516	135845	Construction & Road
3rd	00	51690	144732	Construction & Road
4th	00	51699	144757	Construction & Road
5th	00	51440	144032	Construction & Road
Total	**40713**	**248208**	**694982**	
Maximum Production proposed- 79184cum/ 1157498Ton				
Stripping Ration in (m3/t)- 1:0.06				

Land Use

LAND USE PATTERN			
	Existing	First to Fifth Years	After Life of Mine
Category	Area in Hectares	Area in Hectares	Area in Hectares
Quarry	0	1.06	1.46ha area will be convert as water reservoir 413392cum
Haul Road	0	0.01	0
Proposed Mobile Crusher	0	0.07	Remove from lease area
Green belt in Safety Barrier	0	0.44	0.44
Dump with Parapet wall & Garland drain	0	0.11	Top soil used for plantation and gritty soil will be used for backfilling
Total area in use	0	1.69	1.895
Balance unused area	1.895	0.205	0
Balance used area	0	0	0
Total Applied Lease Area	**1.895**	**1.895**	**1.895**

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.44 Ha	704 trees @ 1600 trees per ha
2	Other Reclaimed Area	:	NIL	NIL
3	Haul /Approach Road	:	450 m	450 meter both sides(2 row Plantation) 450/3 x 2 x 2= 600 plants

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

Solid Waste Management

During first and second year gritty soil & intercalated waste will be removed (40713m3) 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.

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 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 between5 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.

During the presentation the following documents were sought :

i. Revised Green belt plan with provision of 2 row plantation and fruit bearing trees shall be submitted by the PP.

ii. Revised Authorization letter to be submitted.

iii. Water table depth representation shall be updated with proposed Mining area instead of Mined out word.

iv. Risk Management Plan to be updated and submitted.

v. Land Agreement copy shall be submitted.

vi. Undertaking regarding statuary clearance and other points related to project site shall be updated and submitted.

The Project Authorities have submitted the above mentioned documents.

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 Mahadevpur Stone Mine of Shri Lutfal Haque, Village : Mahadevpur, Thana : Pakur, Distt. : Pakur, Jharkhand (1.895 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. **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.**

II. **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.**

III. **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.**

IV. **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.**

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

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

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9. **Beldiha Stone Mine of M/s Beldiha Stone Works (Partners : Shri Rajeebul Shaikh & Shri Manish Kr. Agarwal), Village : Beldiha, P.S. : Hiranpur, Thana no. : 64, Distt. : Pakur, Jharkhand (2.583 Ha).**

(Proposal No : SIA/JH/MIN/ 471683/2024)

Project Category: **B2 – Application for Environment Clearance**

EC Application for: **Stone: 65,600Cum Per Annum/1,83,680 Ton Per 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 18.05.2024.

Project and Location Details:

S.No	Parameter		Details	
1	Project Name	:	Beldiha Stone Mine	
2	Lessee	:	Shri Rajeebul Shaikh & Shri Manish kumar Agrawal (Partner)	
3	Lessee Address	:	R/O- Adwait Nagar, Baro Jama Masjid, Post- Bhasai Paikar District- Murshidabad, West Bengal- 742202	
4	Lease Area	:	Ha: 2.583 Ha	Acres: 6.38 Acres
5	Type of Land	:	Non Forest – Raiyati Land	
6	Project Cost	:	52.0 Lakhs	
7	EMP Budget	:	Capital: 6.76 Lakhs	Recurring: 3.0 Lakh / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	Cu.M. : 4,58,252 Cum	Tonnes: 12,83,106 Ton
10	Mine Life	:	7.0 Years	
11	Man power	:	24	
12	Water Requirement	:	Total water requirement is about 4.99 KLD=1.08 KLD (Drinking & Domestic Uses) + 3.76 (Plantation) KLD + 0.15 KLD (Dust Suppression).	
13	Water Source	:	by Authorised hired water tankers	
14	DG Set / power	:	125KVA (Temporary setup for Backup)	
15	Crusher	:	Yes (Capacity-50ton/h)	
16	Nearest Water Body	:	Village Pond Maharo is about 0.56 km in ENE direction.	
17	Nearest Habitation	:	Nearest Habitation is about 0.19 km in E direction	
18	Nearest Rail Station	:	Kotalpukur - Train station is about 7.31 km in ENE direction.	
19	Nearest Airport	:	Malda Airport, West Bengal is about 49.38 km in NE direction.	
20	Nearest Forest	:	Guma Pahad PF is about 10.04 km in NW direction.	
21	Road & Highways	:	NH-133A is about 3.21 km in SW direction.	

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24°42'57.946"	87°45'21.839"	15	24°42'48.412"	87°45'27.616"
2	24°42'57.072"	87°45'20.477"	16	24°42'49.740"	87°45'27.820"
3	24°42'56.366"	87°45'20.169"	17	24°42'49.633"	87°45'28.483"
4	24°42'55.954"	87°45'19.089"	18	24°42'50.361"	87°45'28.612"
5	24°42'55.036"	87°45'20.400"	19	24°42'50.971"	87°45'28.094"
6	24°42'53.387"	87°45'21.289"	20	24°42'51.139"	87°45'27.400"
7	24°42'53.644"	87°45'22.156"	21	24°42'52.670"	87°45'27.504"
8	24°42'52.428"	87°45'24.415"	22	24°42'53.125"	87°45'26.855"
9	24°42'51.924"	87°45'24.618"	23	24°42'52.996"	87°45'25.655"
10	24°42'51.336"	87°45'24.832"	24	24°42'53.318"	87°45'24.820"
11	24°42'50.757"	87°45'25.121"	25	24°42'54.367"	87°45'25.227"
12	24°42'49.365"	87°45'25.175"	26	24°42'55.072"	87°45'24.726"
13	24°42'48.991"	87°45'25.624"	27	24°42'56.413"	87°45'23.264"
14	24°42'48.305"	87°45'26.353"			

LAND DETAILS

Khata no.	Plot no.
05	313 (P), 314, 315, 316, 317, 318, 410, 411, 412 & 413

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 2368/M, dated 31.10.2023.
2	CO	:	The CO, Hiranpur vide letter no. 18/Ra., dated 12.01.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Pakur vide memo no. 2441/M, dated 09.11.2023 certified that 01 other mining lease area (5.89 Acre) exists within 500 m radius from proposed project site and total area is 12.27 Acre (4.97 Ha).
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1597, 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. 1051, dated 14.07.2021 certified that the distance of reserved / protected forest land is more than 250 meter from proposed project site.

6	DSR	:	This project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 34, Page no. 118) and same has been also certified by DMO, Pakur vide memo no. 180/M, dated 01.02.2024.
7	Gram Sabha	:	BDO, Pakur vide letter no. 177/Vi., dated 28.01.2023 informed that Gram Sabha conducted on 24.01.2023.
8	Mine Plan Approval	:	Approved by Deputy Director Mines, Santhal Pargana Circle, Dumka vide Memo No. 10/DDM, dated 08.01.2024.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been made by him.

Working Details

1	Mining Method	:	OCM & MECHANIZED	
2	Lease Area	:	2.583 ha	Life of Mine – 7.0 years
3	Waste Generation	:	5 years–98129 Cu.M	
4	Stripping Ratio	:	1:0.10	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Highest Elevation of lease Area	:	55Amsl	
8	Lowest Elevation of lease Area		53Amsl	
9	Ultimate Working Depth	:	29Amsl	
10	Water Table	:	23Amsl (30BGL)	
11	Topography of Mine	:	almost flat land	
12	Explosive Requirement	:	77 Kg/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	49808	65152	182426	Construction & Road
2nd	48321	65600	183680	Construction & Road
3rd	00	65450	183260	Construction & Road
4th	00	65588	183646	Construction & Road
5th	00	65416	183165	Construction & Road
Total	**98129**	**327206**	**916177**	
Maximum Production proposed- 65600CUM/183680TPA				
Stripping Ration in (m3/t)- 1:0.10				

Land Use

LAND USE PATTERN			
Category	Existing Area in Hectares	First to Fifth Years Area in Hectares	After Life of Mine Area in Hectares
Quarry	00	1.64	1.89ha Area will be convert as water reservior (Water Accumulated 458252cum)
Haul Road	00	0.02	0.0
Proposed Crusher	00	0.12	Remove from lease area
Green belt in Safety Zone	00	0.69	0.69
Dump with Parapet wall & Garland drain	00	0.11	Waste/O.B will be used for backfilling
Total area in use	**00**	**2.58**	**2.58**
Balance unused area	2.58	0.00	0.00
Balance used area	00	00	0.00
Total Applied Lease Area	**2.58**	**2.58**	**2.58**

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.69 Ha	1104 trees @ 1600 trees per ha
2	Other Reclaimed Area	:	NIL	NIL
3	Haul /Approach Road	:	75m	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

During first and second, year Gritty soil & intercalated waste will be removed (98129m3).
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.

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 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 between5 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.

During the presentation the following documents were sought :

i. Revised Green belt plan with provision of 2 row plantation and fruit bearing trees shall be submitted by the PP.

ii. Land Use table should be revised and submitted.

iii. Water table depth representation shall be updated with proposed Mining area instead of Mined out word.

iv. Risk Management Plan to be updated and submitted.

v. Land Agreement copy shall be submitted.

vi. Undertaking regarding statuary clearance and other points related to project site shall be updated and submitted.

The Project Authorities have submitted the above mentioned documents.

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 Beldiha Stone Mine of M/s Beldiha Stone Works (Partners : Shri Rajeebul Shaikh & Shri Manish Kr. Agarwal), Village : Beldiha, P.S. : Hiranpur, Thana no. : 64, Distt. : Pakur, Jharkhand (2.583 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. 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.
II. 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.

III. 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.

IV. 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.

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

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

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10. **New Sawang Coking Coal Washery (1.5 MTPA) of M/s Central Coalfields Limited (CCL), Village : Sawang, Block : Gumia, Distt. : Bokaro, Jharkhand (7.82 Ha).**

(Proposal No : SIA/JH/CMIN/ 418208/2024)

Name of the consultant: CMPDI, Kanke Road, Ranchi

This is a new project which has been taken for appraisal on 18.05.2024.

Project Category : B1 – 2(a) Coal washeries : Application for Terms of reference (ToR).

EC Application for: Coking Coal Washery with ROM Coal Feed of 1.5 MTY

The proposal was considered by the committee to determine the "Terms of Reference (ToR)" for undertaking detailed EIA study for the purpose of obtaining environmental clearance in accordance with the provisions of the EIA Notification, 2006 and amendments thereafter. For this purpose the Project Proponent has submitted the prescribed Form - I & PFR the proposed project falls under item 2(a) Coal washeries as per EIA Notification, 2006.

In order to meet the requirement of increasing demand of steel sector and reduce the import of coking coal, CCL intends to set up a coking coal washery near existing Sawang Washery at Kathara Area, East Bokaro Coalfield, Distt- Bokaro with raw coal linkage from Pipradih-Sawang, Jarangdih & Godo OCP. The assured raw coal throughput capacity of the washery will be 1.5 Mtpa on 'arb' (as received basis).

The proposed site of the washery is located in the vicinity of existing Sawang Washery of CCL in East Bokaro Coalfield, Kathara Area, District- Bokaro, Jharkhand. An area of about 6.32 Ha land

(including green belt) for construction of New Sawang Washery and 1.50 Ha for temporary 3rd product storage has been identified by CCL.

The New Sawang Coking Coal washery is proposed to be set up on Build-Own-Operate (BOO) concept. The washery has been envisaged to produce three products viz. metallurgical clean coal for use in steel plants, middlings for use in thermal power stations and 3rd product. The washing process has been selected keeping in view the qualitative requirement of steel plants. It has been envisaged to crush entire coal down to (-) 13mm. Treatment of 13-0.5 mm coal in two stage HM cyclone and beneficiation of -0.5mm size fraction by froth flotation have been envisaged.

Project & Location Details:

Sl	Parameter		Details	
1	Project Name	:	New Sawang Coking Coal Washery	
2	Project Proponent	:	Shri Umesh Kumar, Project Officer, Sawang Washery	
3	Address	:	Village: Sawang, Block: Gumia, Distt. : Bokaro, Jharkhand	
4	Area	:	Ha: 7.82 ha	Acres: 19.33 Acres
5	Type of Land	:	Non-Forest Land: 7.82 Ha	
6	Project Cost	:	338 Crore	
7	New or Expansion	:	New	
8	Raw Coal Linkage	:	Pipradih-Sawang, Jarangdih, Godo	
9	Product Linkage	:	Steel Plants of SAIL & RNIL (Washed Coal) Thermal Power Plants of NTPC, DVC, BTPS (Washed Power Coal & 3rd Product)	
10	Project Life	:	21 years including construction period being 3 years	
11	Man power	:	150	
12	Water Requirement	:	800 KL/Day	
13	Water Source	:	Mine seepage & rain water stored in mine sump of Pipradih OCP	
14	DG Set / power	:	5.0 MVA for operation & maintenance of the proposed washery will be provided through Sawang colliery sub-station (voltage-11kV) at a distance of 200 m (approx.) from the proposed washery site.	
15	Crusher	:	Yes (within washery building)	
16	Nearest Water Body	:	Konar River (0.5 KM)	
17	Nearest Habitation	:	Gomia (4 KM)	
18	Nearest Rail Station	:	Gomia (4 KM)	
19	Nearest Airport	:	Ranchi (110 KM)	
20	Nearest Forest	:	Notified Forest (2 KM)	
21	Road & Highways	:	NH320 (29 KM)	

CO-ORDINATES

1	Latitude		From 23° 47' 42.560'' N	To 23° 47' 57.396'' N
2	Longitude		From 85° 50' 50.12'' E	To 85° 51' 8.672'' E

LAND DETAILS:

SN	Khata No	Plot No	Area in Ha	SN	Khata No	Plot No	Area in Ha
1	80	1446	0.016	37	19	1575	0.008
2	32	1453	0.036	38	21	1601	0.077
3	33	1454	0.024	39	16	1602	0.065
4	40	1455	0.02	40	19	1603	0.105
5	92	1456	0.008	41	17	1604	0.105
6	43	1457	0.02	42	19	1617	0.142
7	71	1458	0.186	43	16	1618	0.008
8	70	1459	0.049	44	16	1619	0.097
9	71	1460	0.004	45	16	1620	0.032
10	19	1481	0.008	46	16	1621	0.061
11	16	1483	0.008	47	16	1622	0.049
12	27	1484	0.008	48	19	1623	0.109
13	19	1487	0.02	49	16	1625	0.105
14	24	1488	0.02	50	19	1627	0.012
15	21	1489	0.008	51	19	1628	0.073
16	19	1490	0.004	52	16	1629	0.085
17	27	1491	0.024	53	92	1630	0.012
18	71	1494	0.081	54	92	1631	0.004
19	71	1495	0.024	55	16	1632	0.004
20	71	1496	0.02	56	21	1633	0.121
21	19	1497	0.004	57	16	1636	0.016
22	24	1498	0.057	58	92	1637	0.214
23	16	1505	0.024	59	71	1638	0.38
24	24	1506	0.032	60	32	1639	0.15
25	19	1507	0.008	61	32	1640	0.016
26	63	1508	0.024	62	19	1642	0.004
27	32	1509	0.04	63	19	1643	0.085
28	70	1510	0.069	64	19	1644	0.085
29	71	1511	0.057	65	21	1645	0.004
30	32	1512	0.024	66	21	1646	0.032
31	40	1513	0.008	67	21	1647	0.231
32	40	1514	0.04	68	19	1648	0.065
33	37	1515	0.008	69	19	1649	0.028
34	63	1516	0.069	70	19	1650	0.008
35	27	1541	0.04	71	24	1651	0.065
36	24	1569	0.121	72	19	1652	0.024

SN	Khata No	Plot No	Area in Ha	SN	Khata No	Plot No	Area in Ha
73	21	1653	0.045	109	18	1547 (P)	0.028
74	27	1654	0.045	110	24	1564 (P)	0.036
75	21	1656	0.049	111	24	1566 (P)	0.004
76	27	1657	0.073	112	93	1568 (P)	0.162
77	27	1658	0.085	113	27	1570 (P)	0.02
78	24	1660	0.081	114	19	1572 (P)	0.004
79	24	1661	0.065	115	21	1574 (P)	0.008
80	24	1662	0.125	116	19	1578 (P)	0.016
81	70	1663	0.376	117	27	1580 (P)	0.02
82	40	1669	0.008	118	21	1581 (P)	0.016
83	43	1677	0.194	119	93	1582 (P)	0.085
84	37	1682	0.13	120	92	1583 (P)	0.008
85	27	1684	0.154	121	21	1584 (P)	0.004
86	16	1685	0.194	122	27	1594 (P)	0.028
87	19	1686	0.065	123	24	1595 (P)	0.02
88	16	1687	0.081	124	16	1596 (P)	0.024
89	19	1688	0.036	125	21	1597 (P)	0.024
90	16	1689	0.081	126	16	1598 (P)	0.065
91	27	1690	0.04	127	16	1605 (P)	0.02
92	24	1692	0.081	128	93	1608 (P)	0.02
93	66	1699	0.045	129	16	1613 (P)	0.032
94	80	1700	0.045	130	21	1616 (P)	0.053
95	80	1701	0.016	131	27	1626 (P)	0.166
96	19	1702	0.04	132	93	1664 (P)	0.089
97	63	1127 (P)	0.081	133	37	1676 (P)	0.061
98	69	1403 (P)	0.032	134	69	1678 (P)	0.036
99	54	1404 (P)	0.073	135	24	1681 (P)	0.032
100	80	1448 (P)	0.02	136	27	1691 (P)	0.121
101	37	1449 (P)	0.012	137	43	1695 (P)	0.016
102	66	1452 (P)	0.028	138	43	1696 (P)	0.061
103	19	1492 (P)	0.016	139	66	1704 (P)	0.004
104	24	1493 (P)	0.125	**Total (in Ha)**			**7.82**
105	27	1500 (P)	0.004				
106	30	1517 (P)	0.012				
107	66	1539 (P)	0.012				
108	70	1540 (P)	0.065				

Process Details:

The washery has been designed for a throughput capacity of 1.5 Mty of raw coal per annum. The washery will produce three products viz. clean coal for steel plants, washed coal (power) for thermal power stations and 3rd product (Tertiary Product).

It has been planned to crush entire coal down to (-) 13mm. Treatment of 13-0.5mm coal in two stage HM cyclone and beneficiation of -0.5mm size fraction by froth flotation have been envisaged.

The proposed balance of product is given below:

Product	Wt%	Ash%	Qty (Mty)
Clean coal	40.8	18	0.61
Washed Coal Power	36.2	34	0.54
3rd Product	23.0	63.2	0.35
Total	**100**	**34.2**	**1.50**

Process Description:

Raw Coal Section:

a) Supply of RoM coal from linked mines by road to washery premises.
b) Receiving of RoM coal in the receiving hopper at washery premises.
c) Reclaiming -100mm coal from receiving hopper by vibro-feeder and conveying the same to screening & crushing house.
d) Screening of (-)100 mm coal in double deck vibrating screen at 50/13mm aperture to obtain two size fraction i.e. 100-13 mm & -13mm size fraction.
e) Crushing of 100-13 mm size coal down to 50mm size in primary Double Roll Crusher.
f) Screening of crushed coal at 13mm aperture vibrating screen, (+)13mm fraction is further crushed to (-)13 mm in secondary crusher (Double Roll) & (-)13m fraction is mixed with undersize product obtained from double deck vibrating screen.
g) Crushed coal obtained from secondary crusher is recirculated back to 13mm aperture vibrating screen to check oversize fraction.
h) Storage of entire -13 mm size fraction in a 3000 t stack tube (ground storage) with reclamation arrangement.

Washing Section:

a) Conveying of -13mm coal from raw coal storage to washery building and conveying the same to coal tank.

b) Desliming of -13mm coal from coal tank in desliming screens to produce two size fractions viz. 13-0.5 mm & -0.5 mm.

c) Washing of 13-0.5 mm size fraction in Primary HM cyclones to produce clean coal (i.e. overflow of Primary HM cyclone) & sinks (i.e. underflow of Primary HM cyclones).

d) Washing sinks from Primary HM Cyclones in Secondary HM cyclone to produce washed coal (power) (i.e. overflow of secondary HM cyclone) & 3rd product (i.e. underflow of Secondary HM cyclones).

e) Dewatering of clean coal from Primary HM cyclones in sieve bend-cum-drain & rinse screens followed by further dewatering in centrifuge.

f) Dewatering of washed coal (power) in sieve bend-cum-drain & rinse screen followed by further dewatering in centrifuge.

g) Dewatering of 3rd products from Secondary HM cyclones in D&R screen.

h) Recovery of media by magnetic separators.

i) Slimes (-0.5mm) obtained from underflow of desliming screens & screen drain of centrifuges is taken to fine coal tank and fed to Froth Flotation (FF) Plant for treatment of fine coal.

j) Beneficiation of -0.5 mm coal (fine coal) by froth flotation to produce concentrate (clean coal) and tailings.

k) Thickening of concentrate in concentrate thickener followed by dewatering in Horizontal Travelling Vacuum Belt Filter

l) Dewatered product of HTVBF is mixed with the clean coal obtained from Primary HM Cyclones and effluent is recycled to concentrate thickener.

m) Thickening of tailings in tailing thickener followed by dewatering in Multi Roll Belt Filter.

n) Dewatered product is mixed either with washed coal (power) or 3rd product based on the quality (ash%) of the tailings and effluent is recycled to tailing thickener.

o) Recycling of clarified water (i.e., overflow of thickeners) for plant re-use.

p) Conveying of dewatered 13-0.5 mm clean coal from Primary HM cyclone along with -0.5 mm dewatered fine clean coal from froth flotation and stocking of clean coal in covered clean coal storage (4,000 t).

q) Conveying of dewatered 13-0.5 mm washed coal (power) from Secondary HM cyclones and stocking the same in separate washed coal (power) storage (4,000 t).

r) Conveying of 3rd product from washery building by belt conveyor to 3rd product hopper / Temporary 3rd product storage site adjacent to the proposed washery site prior to sale/disposal of 3rd product.

s) Reclamation of clean coal and washed coal (power) from their respective covered storage and conveying the same by a set of two nos. of parallel belt conveyors (common for both washed coal and power coal-operating simultaneously) to respective loading hoppers of Fast Loading Systems on the railway line of Sawang Railway Siding which is approximately 500 meters from proposed washery site. Clean coal and washed coal (power) will be loaded into Railway wagons through separate Fast Loading Systems (3600 tph each) for onward dispatch to consumers.

Process Material Consumption:

Magnetite consumption (t/hr)

Sl. No.	Name of Product	Magnetite Losses in product (t/hr)
1	Clean Coal	0.05

2	Washed Coal (Power)	0.07
3	3rd Product	0.03
Total		0.15

Overall magnetite consumption = 0.5 kg/t of raw coal feed

Reagent consumption for fine coal beneficiation (50 tph) in froth flotation

Sl. No.	Name of Product	Losses (kg/hr)	
		Frother	Collector
1	Clean Coal	3	10
2	3rd Product	2	10
Total		5	20

Frother consumption= 0.1 kg/t of fine coal treated

Collector consumption= 0.4 kg/t of fine coal treated

Receiving of ROM Coal & Dispatch of Products:

ROM Coal from Mine to Washery	Raw coal linkage is proposed from Pipradih-Sawang, Jarangdih & Godo by Road.
Dispatch of Clean Coal & Washed Power Coal	Clean coal and washed coal (power) from their respective covered storage facilities will be reclaimed and conveyed by a set of two nos. of parallel belt conveyors to be operated simultaneously through two numbers Rapid Loading System on railway line of Sawang which is about 500m from washery site. Separate fast loading system and surge bins of 500 te capacity each have been provided for clean coal and middling.
Dispatch of 3rd Product	The average quantity of 3rd product to be produced from the washery has been estimated as about 0.35 MTY. The 3rd product will be conveyed by belt conveyor to 3rd product hopper/Temporary 3rd product Storage site adjacent to the proposed washery site. The average gross calorific value of the 3rd product from proposed coal washery is expected to fall under G-14 Grade (3100-3400 kcal/kg) which will be disposed or sold by CCL through MoU/e-auction route in line with prevailing MoEF&CC guidelines.

Requirement of Water:

Tentative requirement of Water is around 800 KLD. No groundwater to be utilized, instead water stored in the nearby mining pits is to be utilized which will suffice the washery operation. The quantity of water will be replenished through storm-water during monsoon.

Land Type Breakup:

SL	Pattern	Area (in Ha)
1	Non-Forest Land	7.82

Land Use During Mining:

SN	Component	Total Area
1	Main Plant & Allied infrastructure	3.75
2	Stock pile and loading bunker	0.33
3	Slurry pond	0.34
4	Site for 3rd Product Storage	0.79
5	Green Belt	2.61
Total (in Ha)		**7.82**

Risk and Hazard Mitigation measures :

a) Electrical installations will be designed in accordance with prescribed safety rules to ensure that electrical fire possibility is minimized.

b) At the operational stage, all safety rules will be followed.

c) Display of warning signs in operational area against fire and proper storage of inflammable material like diesel, etc.

d) Provision of adequate firefighting arrangements with a ground water tank dedicated to firefighting exclusively.

e) Organizing firefighting drills on regular basis and Installation of Portable fire fighters at strategic locations all over the plant.

f) Installation of smoke detectors with Fire Alarm.

g) Details of Risk Management Plan shall be prepared and presented in EIA/EMP report.

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Land has been acquired vide S.O no. 5222R dt 04.05.1922.
2	CO	:	The CO, Gomia vide letter no. 350, dated 01.03.2023 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 Division, Hazaribagh vide letter no. 1262, dated 03.07.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Sanctuary.
4	DFO Forest Distance	:	Division Forest Officer, Bokaro Forest Division vide letter no. 73, dated 11.01.2024 certified that the distance of reserved / protected forest land is more than 250 meter from proposed project site.
5	Pre-Feasibility Report Approval	:	Pre-Feasibility Report approved by Company Secretary of Central Coalfields Ltd., Darbhanga House, Ranchi vide Ref. no. C.S./B.M. / 537 / 2024 /67, dated 12.03.2024.

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 16, 17, 18 &19.05.2024, the Committee for issuing of TOR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure V along with following specific conditions :

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

II. **Detailed water balance to be provided.**

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

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

V. **Details of settling pond and cycle of concentration.**

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

VII. **Details of fire control management plan.**

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The meeting concluded with thanks to all present.

Ashok Kumar Dubey, IFS (Retd.)
Member

Dr. Ajay Govind Bhatt
Member

Niranjan Lal Agarwalla
Member

Dr. Raju Kumar
Member

Srikant Verma, IFS
Member Secretary

Ashok Kumar Singh, IFS (Retd.)
Chairman

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. 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 ".

iii. The Project proponent complies with all the statutory requirements and judgement of Hon'ble Supreme Court dated 2nd August,2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors before commencing the mining operations.

iv. The Hon'ble Supreme Court vide order dated 08.01.2020 in W.P. (Civil) No.114/2014 in the matter of Common Cause vs. Union of India has directed that the area which has been mined should be restored so that grass and other vegetation including trees can grow in the mining area for the benefit of animals.

> *"The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.*

v. The State Government concerned shall ensure that mining operation shall not be commenced till the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of Judgement of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors.

vi. This Environmental Clearance shall become operational only after receiving formal NBWL Clearance from MoEF&CC subsequent to the recommendations of the Standing Committee of National Board for Wildlife, if applicable to the Project.

vii. This Environmental Clearance shall become operational only after receiving formal Forest Clearance (FC) under the provision of Forest Conservation Act, 1980, if applicable to the Project.

viii. Project Proponent (PP) shall obtain Consent to Operate after grant of EC and effectively implement all the conditions stipulated therein. The mining activity shall not commence prior to obtaining Consent to Establish / Consent to Operate from the concerned State Pollution Control Board/Committee.

ix. The PP shall adhere to the provision of the Mines Act, 1952, Mines and Mineral (Development & Regulation), Act, 2015 and rules & regulations made there under. PP shall adhere to various circulars issued by Directorate General Mines Safety (DGMS) and Indian Bureau of Mines from time to time.

x. The Project Proponent shall obtain consents from all the concerned land owners, before start of mining operations, as per the provisions of MMDR Act, 1957 and rules made there under in respect of lands which are not owned by it.

xi. The Project Proponent shall follow the mitigation measures provided in MoEF&CC's Office Memorandum No. Z-11013/57/2014-IAJI (M), dated 29th October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area".

xii. The Project Proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and from CGWA for withdrawal of ground water for the project.

xiii. A copy of EC letter will be marked to concerned Panchayat / local NGO etc. if any, from whom suggestion / representation has been received while processing the proposal.

xiv. State Pollution Control Board/Committee shall be responsible for display of this EC letter at its Regional office, District Industries Centre and Collector's office/ Tehsildar's Office for 30 days.

xv. The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded EC and copy of the EC letter is available with the State Pollution Control Board/Committee and web site of the Ministry of Environment, Forest and Climate Change (www. Environment clearance.nic.in). A copy of the advertisement may be forwarded to the concerned MoEF & CC Regional Office for compliance and record.

xvi. The Project Proponent shall inform the MoEF&CC for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred than mining operation shall only be carried out after transfer of EC as per provisions of the para 11 of EIA Notification, 2006 as amended from time to time.

II. Air quality monitoring and preservation

i. The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an angle of 120° is made between the monitoring locations to monitor critical parameters, relevant for mining operations, of air pollution viz. PM10, PM2.5, NO2; CO and SO2 etc. as per the methodology mentioned in NAAQS Notification No. B-29016/20/90/PCUI, dated 18.11.2009 covering the aspects of transportation and use of heavy machinery in the impact zone. The ambient air quality shall also be monitored at prominent places like office building, canteen etc. as per the site condition to ascertain the exposure characteristics at specific places. The above data shall be digitally displayed within 03 months in front of the main Gate of the mine site.

ii. Effective safeguard measures for prevention of dust generation and subsequent suppression (like regular water sprinkling, metalled road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM10 and PM2.5 are evident such as haul road, loading and unloading point and transfer points. The Fugitive dust emissions from ail sources shall be regularly controlled by installation of required equipments/ machineries and preventive maintenance: Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEF&CC/ Central Pollution Control Board.

III. Water quality monitoring and preservation

i. In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEF&CC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area.

ii. Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintain. The natural water bodies and or streams which are flowing in an around the village, should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug wall located in village should be incorporated to ascertain the impact of mining over ground water table. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.

iii. Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central Ground Water Authority/ State Ground Water Department. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.

iv. The Project Proponent shall undertake regular monitoring of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease and maintain its records. The project proponent shall undertake regular monitoring of water quality upstream and downstream of water bodies passing within and nearby/ adjacent to the mine lease and maintain its records. Sufficient number of gullies shall be provided at appropriate places within the lease for

management of water. PP shall carryout regular monitoring w.r.t. pH and included the same in monitoring plan. The parameters to be monitored shall include their water quality vis-à-vis suitability for usage as per CPCB criteria and flow rate. It shall be ensured that no obstruction and/ or alteration be made to water bodies during mining operations without justification and prior approval of MoEF&CC. The monitoring of water courses/ bodies existing in lease area shall be carried out four times in a year viz. pre- monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the record of monitored data may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on six-monthly basis.

v. Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off; acid mine drainage and metal contamination in runoff shall be monitored along with Total Suspended Solids (TDS), Dissolved Oxygen (DO), pH and Total Suspended Solids (TSS). The monitored data shall be uploaded on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J- 20012/1/2006-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 PP shall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.

V. Mining Plan

i. The Project Proponent shall adhere to the working parameters of mining plan which was submitted at the time of EC appraisal wherein year-wise plan was mentioned for total excavation i.e. quantum of mineral, waste, over burden, inter burden and top soil etc.. No change in basic mining proposal like mining technology, total excavation, mineral & waste production, lease area and scope of working (viz. method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode, ultimate depth of mining etc.) shall not be carried out without prior approval of the Ministry of Environment, Forest and Climate Change, which entail adverse environmental impacts, even if it is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form to Short Term Permit (STP), Query license or any other name.

ii. The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance approved from Indian Bureau of Mines/Department of Mining & Geology as required under the Provision of the MMDR Act, 1957 and Rules/ Guidelines made there under. A copy of approved final mine closure plan shall be submitted within 2 months of the approval of the same from the competent authority to the concerned Regional Office of the Ministry of Environment, Forest and Climate Change for record and verification.

iii. The land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis-à-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self sustaining. The compliance status shall be submitted half-yearly to the MoEF&CC and its concerned Regional Office.

VI. Land reclamation

i. The Overburden (O.B.) generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by D.G.M.S w.r.t. safety in mining operations shall be strictly adhered to

maintain the stability of top soil/OB dumps. The topsoil shall be used for land reclamation and plantation.

ii. The reject/waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of the waste dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of waste dumps.

iii. The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.

iv. The slope of dumps shall be vegetated in scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and help in adaptation of plant species to the microclimate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer/ compactors thereby ensuring proper filling/ leveling of dump mass. In critical areas, use of geo textiles/ geo-membranes / clay liners / Bentonite etc. shall be undertaken for stabilization of the dump.

v. The Project Proponent shall carry out slope stability study in case the dump height is more than 30 meters. The slope stability report shall be submitted to concerned regional office of MoEF&CC.

vi. Catch drains, settling tanks and ponds of appropriate size shall be constructed around the mine working, mineral yards and Top Soil/OB/Waste dumps to prevent run off of water and flow of sediments directly into the water bodies (Nallah/ River/ Pond etc.). The collected water should be utilized for watering the mine area, roads, green belt development, plantation etc. The drains/ sedimentation sumps etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly.

vii. Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining area which shall also help in providing adequate retention time period thereby allowing proper settling of sediments/ silt material. The sedimentation pits/ sumps shall be constructed at the corners of the garland drains.

viii. The top soil, if any, shall temporarily be stored at earmarked site(s) within the mine lease only and should not be kept unutilized for long. The physical parameters of the top soil dumps like height, width and angle of slope shall be governed as per the approved Mining Plan and as per the guidelines framed by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of dumps. The topsoil shall be used for land reclamation and plantation purpose.

VII. Transportation

i. No Transportation of the minerals shall be allowed in case of roads passing through villages/ habitations. In such cases, PP shall construct a 'bypass' road for the purpose of transportation of the minerals leaving an adequate gap (say at least 200 meters)

so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers.

ii. The Main haulage road within the mine lease should be provided with a permanent water sprinkling arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipments like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.

VIII. Green Belt

i. The Project Proponent shall develop greenbelt in 7.5m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 years starting from windward side of the active mining area. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.

ii. The Project Proponent shall carryout plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall also be adhered. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for protection and care of trees.

iii. The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensate those areas which are coming within the mine lease. The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide

mid-day shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted.

iv. The Project Proponent shall undertake all precautionary measures for conservation and protection of endangered flora and fauna and Schedule-I species during mining operation. A Wildlife Conservation Plan shall be prepared for the same clearly delineating action to be taken for conservation of flora and fauna. The Plan shall be approved by Chief Wild Life Warden of the State Govt.

v. And implemented in consultation with the State Forest and Wildlife Department. A copy of Wildlife Conservation Plan and its implementation status (annual) shall be submitted to the Regional Office of the Ministry.

IX. Public hearing and human health issues

i. The Project Proponent shall appoint an Occupational Health Specialist for Regular as well as Periodical medical examination of the workers engaged in the mining activities, as per the DGMS guidelines. The records shall be maintained properly. PP shall also carryout Occupational health check-ups in respect of workers which are having ailments like BP, diabetes, habitual smoking, etc. The check-ups shall be undertaken once in six months and necessary remedial/ preventive measures be taken. A status report on the same may be sent to MoEF&CC Regional Office and DGMS on half-yearly basis.

ii. The Project Proponent must demonstrate commitment to work towards 'Zero Harm' from their mining activities and carry out Health Risk Assessment (HRA) for identification workplace hazards and assess their potential risks to health and determine appropriate control measures to protect the health and wellbeing of workers and nearby community. The proponent shall maintain accurate and systematic records of the HRA. The HRA for neighborhood has to focus on Public Health Problems like Malaria, Tuberculosis, HIV, Anaemia, Diarrhoea in children under five, respiratory infections due to bio mass cooking. The proponent shall also create awareness and educate the nearby community and workers for Sanitation, Personal Hygiene, Hand washing, not to defecate in open, Women Health and Hygiene (Providing Sanitary Napkins), hazard of tobacco and alcohol use. The Proponent shall carryout base line HRA for all the category of workers and thereafter every five years.

iii. The Proponent shall carry out Occupational health surveillance which be a part of HRA and include Biological Monitoring where practical and feasible, and the tests and investigations relevant to the exposure (e.g. for Dust a X-Ray chest; For Noise Audiometric; for Lead Exposure Blood Lead, For Welders Full Ophthalmologic Assessment; for Manganese Miners a complete Neurological Assessment by a Certified Neurologist, and Manganese (Mn) Estimation in Blood; For Inorganic Chromium- Fortnightly skin inspection of hands and forearms by a responsible person. Except routine tests all tests would be carried out in a Lab accredited by NABH. Records of Health Surveillance must be kept for 30 years, including the results of and the records of Physical examination and tests. The record of exposure due to materials like Asbestos, Hard Rock Mining, Silica, Gold, Kaolin, Aluminium,

Iron, Manganese, Chromium, Lead, Uranium need to be handed over to the Mining Department of the State in case the life of the mine is less than 30 years. It would be obligatory for the State Mines Departments to make arrangements for the safe and secure storage of the records including X-Ray. Only conventional X-Ray will be accepted for record purposes and not the digital one). X-Ray must meet ILO criteria (17 x14 inches and of good quality).

iv. The Proponent shall maintained a record of performance indicators for workers which includes (a) there should not be a significant decline in their Body Mass Index and it should stay between 18.5 -24.9, (b) the Final Chest X-Ray compared with the base line X-Ray should not show any capacities ,(c) At the end of their leaving job there should be no Diminution in their Lung Functions Forced Expiratory Volume in one second (FEV1),Forced Vital Capacity (FVC), and the ratio) unless they are smokers which has to be adjusted, and the effect of age, (d) their hearing should not be affected. As a proof an Audiogram (first and last need to be presented), (e) they should not have developed any Persistent Back Pain, Neck Pain, and the movement of their Hip, Knee and other joints should have normal range of movement, (f) they should not have suffered loss of any body part. The record of the same should be submitted to the Regional Office, MoEF&CC annually along with details of the relief and compensation paid to workers having above indications.

v. The Project Proponent shall ensure that Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.

vi. Project Proponent shall make provision for the housing for workers/labors or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project related infrastructure. The domestic waste water should be treated with STP in order to avoid contamination of underground water.

vii. The activities proposed in Action plan prepared for addressing the issues raised during the Public Hearing shall be completed as per the budgetary provisions mentioned in the Action Plan and within the stipulated time frame. The Status Report on implementation of Action Plan shall be submitted to the concerned Regional Office of the Ministry along with District Administration.

X. Corporate Environment Responsibility (CER)

i. The activities and budget earmarked for Corporate Environmental Responsibility (CER) as per Ministry's O.M No 22-65/2017-IA. II (M) dated 01.05.2018 or as proposed by EAC should be kept in a separate bank account. The activities proposed for CER shall be implemented in a time bound manner and annual report of implementation of the same along with documentary proof viz. photographs, purchase documents, latitude & longitude of infrastructure developed & road constructed needs to be submitted to Regional Office MoEF&CC annually along with audited statement.

ii. Project Proponent shall keep the funds earmarked for environmental protection measures in a separate account and refrain from diverting the same for other purposes. The Year wise expenditure of such funds should be reported to the MoEF&CC and its concerned Regional Office.

XI. Miscellaneous

i. The Project Proponent shall prepare digital map (land use & land cover) of the entire lease area once in five years purpose of monitoring land use pattern and submit a report to concerned Regional Office of the MoEF&CC.

ii. The Project Authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.

iii. It shall be mandatory for the project management to submit six (06) monthly compliance report in respect of the stipulated prior environmental clearance terms and conditions in hard copies and soft copies to the regulatory authority concerned Regional Office of MoEF & CC at Ranchi and Jharkhand State Pollution Control Board (J.S.P.C.B.), Ranchi / CPCB / SEIAA.

iv. A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEF&CC.

v. The concerned Regional Office of the MoEF&CC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEF&CC officer(s) by furnishing the requisite data / information / monitoring reports.

vi. Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.

vii. The Ministry / SEIAA / SEAC may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

viii. The Ministry / SEIAA / SEAC reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.

ix. The Environmental Clearance accorded shall be valid for the period of lease of the mine. The PP shall not increase production rate and alter lease area during the validity of Environmental Clearance.

x. Any appeal against this Environmental Clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under section 16 of the National Green Tribunal Act, 2010.

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.

Annexure – III

I. Statutory Compliance

i. The project proponent shall obtain all necessary clearance/ permission from all relevant agencies including town planning authority before commencement of work. All the construction shall be done in accordance with the local building byelaws.

ii. The approval of the Competent Authority shall be obtained for structural safety of buildings due to earthquakes, adequacy of fire fighting equipment etc as per National Building Code including protection measures from lightening etc.

iii. The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1980, in case of the diversion of forest land for non-forest purpose involved in the project.

iv. In the writ petition (Civil) no. 202/1995, T.N. Godaverman Thirumulpad vs union of India and ors. the Hon'ble Supreme Court passed an order dated 03.06.2022 " National Park or Wildlife Sanctuary must have an ESZ of minimum 01 km in which the activities prescribed and prescribed in the guidelines of 09th February, 2011 shall be strictly adhered to ".

v. The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.

vi. The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.

vii. The project proponent shall obtain the necessary permission for drawl of ground water / surface water required for the project from the competent authority.

viii. A certificate of adequacy of available power from the agency supplying power to the project along with the load allowed for the project should be obtained.

ix. All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department shall be obtained, as applicable, by project proponents from the respective competent authorities.

x. The provisions of the Solid Waste (Management) Rules, 2016, e-Waste (Management) Rules, 2016, and the Plastics Waste (Management) Rules, 2016 shall be followed.

xi. The project proponent shall follow the ECBC/ECBC-R prescribed by Bureau of Energy Efficiency, Ministry of Power strictly.

xii. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel (kerosene/gas) for cooking,

safe drinking water, medical health care, etc. The housing may be in the form of temporary structures to be removed after completion of the project.

xiii. Provision of drinking water, waste water disposal, solid wastes management and primary health facilities shall be ensured for labour force. Proper sanitation facilities shall be provided at the construction site to prevent health related problems. Domestic as well as sanitary wastes from construction camps shall be cleared regularly.

xiv. All the labourers to be engaged for construction works shall be screened for health and adequately treated before issue of work permits. The contractor shall ensure periodic health check-up of construction workers.

xv. All vehicles/equipment deployed during construction phase shall be ensured in good working condition and shall conform to applicable air and noise emission standards. These shall be operated only during non-peaking hours.

xvi. Accumulation/stagnation of water shall be avoided ensuring vector control.

xvii. Water during construction phase should be preferred from Municipal supply.

xviii. Unskilled construction labourers shall be recruited from the local areas.

xix. Monitoring of ground water table and quality once in three months shall be carried out. Construction of tube wells, bore wells shall be strictly regulated.

xx. Adequate provision shall be made to cater the parking needs. Parking spaces standards as given in "Manual on Norms and Standards for Environmental Clearance of Large Construction Projects" issued by Ministry of Environment and Forests, Government of India shall be adopted.

xxi. Rest room facilities shall be provided for service population.

xxii. Water body falling within premises (if any) shall not be lined or no embankment shall be cemented. The water bodies, if any, shall be kept in natural conditions without disturbing the ecological habitat.

xxiii. Construction shall conform to the requirements of local seismic regulations. The project proponent shall obtain permission for the plans and designs including structural design, standards and specifications of all construction work from concerned authority.

II. Air quality monitoring and preservation

i. Notification GSR 94(E) dated 25.01.2018 of MoEF&CC regarding Mandatory Implementation of Dust Mitigation Measures for Construction and Demolition Activities for projects requiring Environmental Clearance shall be complied with.

ii. A management plan shall be drawn up and implemented to contain the current exceedance in ambient air quality at the site.

iii. The project proponent shall install system to carryout Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM10 and PM25) covering upwind and downwind directions during the construction period.

iv. Diesel power generating sets proposed as source of backup power should be of enclosed type and conform to rules made under the Environment (Protection) Act, 1986. The height of stack of DG sets should be equal to the height needed for the combined capacity of all proposed DG sets. Use of low sulphur diesel. The location of the DG sets may be decided with in consultation with State Pollution Control Board.

v. Construction site shall be adequately barricaded before the construction begins. Dust, smoke & other air pollution prevention measures shall be provided for the building as well as the site. These measures shall include screens for the building under construction, continuous dust/ wind breaking walls all around the site (at least 3 meter height). Plastic/tarpaulin sheet covers shall be provided for vehicles bringing in sand, cement, murram and other construction materials prone to causing dust pollution at the site as well as taking out debris from the site.

vi. Sand, murram, loose soil, cement, stored on site shall be covered adequately so as to prevent dust pollution.

vii. Wet jet shall be provided for grinding and stone cutting.

viii. Unpaved surfaces and loose soil shall be adequately sprinkled with water to suppress dust.

ix. All construction and demolition debris shall be stored at the site (and not dumped on the roads or open spaces outside) before they are properly disposed. All demolition and construction waste shall be managed as per the provisions of the Construction and Demolition Waste Rules 2016.

x. The diesel generator sets to be used during construction phase shall be low sulphur diesel type and shall conform to Environmental (Protection) prescribed for air and noise emission standards.

xi. The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution. Low sulphur diesel shall be used. The location of the DG set and exhaust pipe height shall be as per the provisions of the Central Pollution Control Board (CPCB) norms.

xii. For indoor air quality the ventilation provisions as per National Building Code of India.

III. Water quality monitoring and preservation

i. The natural drain system should be maintained for ensuring unrestricted flow of water. No construction shall be allowed to obstruct the natural drainage through the site, on wetland and water bodies. Check dams, bio-swales, landscape, and other

sustainable urban drainage systems (SUDS) are allowed for maintaining the drainage pattern and to harvest rain water.

ii. Buildings shall be designed to follow the natural topography as much as possible. Minimum cutting and filling should be done.

iii. Total fresh water use shall not exceed the proposed requirement as provided in the project details.

iv. The quantity of fresh water usage, water recycling and rainwater harvesting shall be measured and recorded to monitor the water balance as projected by the project proponent. The record shall be submitted to the Regional Office, MoEF&CC along with six monthly Monitoring reports.

v. A certificate shall be obtained from the local body supplying water, specifying the total annual water availability with the local authority, the quantity of water already committed, the quantity of water allotted to the project under consideration and the balance water available. This should be specified separately for ground water and surface water sources, ensuring that there is no impact on other users.

vi. At least 20% of the open spaces as required by the local building bye-laws shall be pervious. Use of Grass pavers, paver blocks with at least 50% opening, landscape etc. would be considered as pervious surface.

vii. Installation of dual pipe plumbing for supplying fresh water for drinking, cooking and bathing etc and other for supply of recycled water for flushing, landscape irrigation, car washing, thermal cooling, conditioning etc. shall be done.

viii. Use of water saving devices/ fixtures (viz. low flow flushing systems; use of low flow faucets tap aerators etc) for water conservation shall be incorporated in the building plan.

ix. Separation of grey and black water should be done by the use of dual plumbing system. In case of single stack system separate recirculation lines for flushing by giving dual plumbing system be done.

x. Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred.

xi. The local bye-law provisions on rain water harvesting should be followed. If local byelaw provision is not available, adequate provision for storage and recharge should be followed as per the Ministry of Urban Development Model Building Byelaws, 2016. Rain water harvesting recharge pits/storage tanks shall be provided for ground water recharging as per the CGWB norms.

xii. A rain water harvesting plan needs to be designed where the recharge bores of minimum one recharge bore per 5,000 square meters of built up area and storage capacity of minimum one day of total fresh water requirement shall be provided. In areas where ground water recharge is not feasible, the rain water should be harvested and stored for reuse. The ground water shall not be withdrawn without approval from the Competent Authority.

xiii. All recharge should be limited to shallow aquifer.

xiv. No ground water shall be used during construction phase of the project.

xv. Any ground water dewatering should be properly managed and shall conform to the approvals and the guidelines of the CGWA in the matter. Formal approval shall be taken from the CGWA for any ground water abstraction or dewatering.

xvi. The quantity of fresh water usage, water recycling and rainwater harvesting shall be measured and recorded to monitor the water balance as projected by the project proponent. The record shall be submitted to the Regional Office, MoEF&CC along with six monthly Monitoring reports.

xvii. Sewage shall be treated in the STP with tertiary treatment. The treated effluent from STP shall be recycled/re-used for flushing, AC make up water and gardening. As proposed, no treated water shall be disposed in to municipal drain.

xviii. No sewage or untreated effluent water would be discharged through storm water drains.

xix. Onsite sewage treatment of capacity of treating 100% waste water to be installed based on the MBBR/MBR/SBR technology. The installation of the Sewage Treatment Plant (STP) shall be certified by an independent expert and a report in this regard shall be submitted to the Ministry before the project is commissioned for operation. Treated waste water shall be reused on site for landscape, flushing, cooling tower, and other end-uses. Excess treated water shall be discharged as per statutory norms notified by Ministry of Environment, Forest and Climate Change. Natural treatment systems shall be promoted.

xx. Periodical monitoring of water quality of treated sewage shall be conducted. Necessary measures should be made to mitigate the odour problem from STP.

xxi. Sludge from the onsite sewage treatment, including septic tanks, shall be collected, conveyed and disposed as per the Ministry of Urban Development, Central Public Health and Environmental Engineering Organization (CPHEEO) Manual on Sewerage and Sewage Treatment Systems, 2013.

IV. Noise monitoring and prevention

i. Ambient noise levels shall conform to residential area/commercial area/industrial area/silence zone both during day and night as per Noise Pollution (Control and Regulation) Rules, 2000. Incremental pollution loads on the ambient air and noise quality shall be closely monitored during construction phase. Adequate measures shall be made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB / SPCB.

ii. Noise level survey shall be carried as per the prescribed guidelines and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.

iii. Acoustic enclosures for DG sets, noise barriers for ground-run bays, ear plugs for operating personnel shall be implemented as mitigation measures for noise impact due to ground sources.

V. Energy Conservation measures

i. Compliance with the Energy Conservation Building Code (ECBC) of Bureau of Energy Efficiency shall be ensured. Buildings in the States which have notified their own ECBC, shall comply with the State ECBC.

ii. Outdoor and common area lighting shall be LED.

iii. Concept of passive solar design that minimize energy consumption in buildings by using design elements, such as building orientation, landscaping, efficient building envelope, appropriate fenestration, increased day lighting design and thermal mass etc. shall be incorporated in the building design. Wall, window, and roof u-values shall be as per ECBC specifications.

iv. Energy conservation measures like installation of CFLs/ LED for the lighting the area outside the building should be integral part of the project design and should be in place before project commissioning.

v. Solar, wind or other Renewable Energy shall be installed to meet electricity generation equivalent to 1% of the demand load or as per the state level/ local building bye-laws requirement, whichever is higher.

vi. Solar power shall be used for lighting in the apartment to reduce the power load on grid. Separate electric meter shall be installed for solar power. Solar water heating shall be provided to meet 20% of the hot water demand of the commercial and institutional building or as per the requirement of the local building bye-laws, whichever is higher. Residential buildings are also recommended to meet its hot water demand from solar water heaters, as far as possible.

VI. Waste Management

i. A certificate from the competent authority handling municipal solid wastes, indicating the existing civic capacities of handling and their adequacy to cater to the M.S.W. generated from project shall be obtained.

ii. Disposal of muck during construction phase shall not create any adverse effect on the neighboring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.

iii. Separate wet and dry bins must be provided in each unit and at the ground level for facilitating segregation of waste. Solid waste shall be segregated into wet garbage and inert materials.

iv. Organic waste compost/ Vermiculture pit/ Organic Waste Converter within the premises with a minimum capacity of 0.3 kg /person/day must be installed.

v. All non-biodegradable waste shall be handed over to authorized recyclers for which a written tie up must be done with the authorized recyclers.

vi. Any hazardous waste generated during construction phase, shall be disposed off as per applicable rules and norms with necessary approvals of the State Pollution Control Board.

vii. Use of environment friendly materials in bricks, blocks and other construction materials, shall be required for at least 20% of the construction material quantity. These include Fly Ash bricks, hollow bricks, AACs, Fly Ash Lime Gypsum blocks, Compressed earth blocks, and other environment friendly materials.

viii. Fly ash should be used as building material in the construction as per the provision of Fly Ash Notification of September, 1999 and amended as on 27th August, 2003 and 25th January, 20L.6.,Ready mixed concrete must be used in building construction.

ix. Any wastes from construction and demolition activities related thereto shall be managed so as to strictly conform to the Construction and Demolition Rules, 2016.

x. Used CFLs and TFLs should be properly collected and disposed off/sent for recycling as per the prevailing guidelines/ rules of the regulatory authority to avoid mercury contamination.

VII. Green Cover

i. No tree can be felled/transplant unless exigencies demand. Where absolutely necessary, tree felling shall be with prior permission from the concerned regulatory authority. Old trees should be retained based on girth and age regulations as may be prescribed by the Forest Department. Plantations to be ensured species (cut) to species (planted).

ii. A minimum of 1 tree for every 80 sqm of land should be planted and maintained. The existing trees will be counted for this purpose. The landscape planning should include plantation of native species. The species with heavy foliage, broad leaves and wide canopy cover are desirable. Water intensive and/or invasive species should not be used for landscaping.

iii. Where the trees need to be cut with prior permission from the concerned local Authority, compensatory plantation in the ratio of 1:10 (i.e. planting of 10 trees for every 1 tree that is cut) shall be done and maintained. Plantations to be ensured species (cut) to species (planted). Area for green belt development shall be provided as per the details provided in the project document.

iv. Topsoil should be stripped to a depth of 20 cm from the areas proposed for buildings, roads, paved areas, and external services. It should be stockpiled appropriately in designated areas and reapplied during plantation of the proposed vegetation on site.

VIII. Transport

i. A comprehensive mobility plan, as per MoUD best practices guidelines (URDPFI), shall be prepared to include motorized, non-motorized, public, and private networks. Road should be designed with due consideration for environment, and safety of users. The road system can be designed with these basic criteria.

   a. Hierarchy of roads with proper segregation of vehicular and pedestrian traffic.
   b. Traffic calming measures.
   c. Proper design of entry and exit points.
   d. Parking norms as per local regulation

ii. Vehicles hired for bringing construction material to the site should be in good condition and should have a pollution check certificate and should conform to applicable air and noise emission standards be operated only during non-peak hours.

iii. A detailed traffic management and traffic decongestion plan shall be drawn up to ensure that the current level of service of the roads within a 05 kms radius of the project is maintained and improved upon after the implementation of the project. This plan should be based on cumulative impact of all development and increased habitation being carried out or proposed to be carried out by the project or other agencies in this 05 Kms radius of the site in different scenarios of space and time and the traffic management plan shall be duly validated and certified by the State Urban Development department and the P.W.D./ competent authority for road augmentation and shall also have their consent to the implementation of components of the plan which involve the participation of these departments.

IX. Human Health Issues

i. All workers working at the construction site and involved in loading, unloading, carriage of construction material and construction debris or working in any area with dust pollution shall be provided with dust mask.

ii. For indoor air quality the ventilation provisions as per National Building Code of India.

iii. Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.

iv. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

v. Occupational health surveillance of the workers shall be done on a regular basis.

vi. A First Aid Room shall be provided in the project both during construction and operations of the project.

X. Corporate Environment Responsibility

i. The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 1st May 2018, as applicable, regarding Corporate Environment Responsibility.

ii. The company shall have a well laid down environmental policy duly approved by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms / conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental / forest / wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.

iii. A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.

iv. Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.

XI. Miscellaneous

i. The project proponent shall prominently advertise it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days indicating that the project has been accorded environment clearance and the details of MoEF&CC/SEIAA website where it is displayed.

ii. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.

iii. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.

iv. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.

v. The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under

the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.

vi. The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.

vii. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.

viii. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.

ix. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).

x. Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.

xi. The Ministry / SEIAA / SEAC may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

xii. The Ministry / SEIAA / SEAC reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.

xiii. It shall be mandatory for the project management to submit six (06) monthly compliance report in respect of the stipulated prior environmental clearance terms and conditions in hard copies and soft copies to the regulatory authority concerned Regional Office of MoEF & CC at Ranchi and Jharkhand State Pollution Control Board (J.S.P.C.B.), Ranchi / CPCB / SEIAA.

xiv. The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.

xv. Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under section 16 of the National Green Tribunal Act, 2010.

xvi. The Prescribed EC is valid as per Notification no. S.O. 1807(E) dated 12.04.2022 of MoEF&CC, Govt. of India.

Annexure - IV

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 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. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.

xl. The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.

xli. A Disaster management Plan shall be prepared and included in the EIA/EMP Report.

xlii. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.

xliii. 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.

i) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.

j) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

xliv. After preparing the draft EIA (as per the generic structure prescribed in Appendix- III of the EIA Notification, 2006) covering the above mentioned issues.

xlv. 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.

Annexure - V

The TORs prescribed for undertaking detailed EIA study are as follows:

1. Siting of washery is critical considering to its environmental impacts. Preference should be given to the site located at pit head; in case such a site is not available, the site should be as close to the pit head as possible and coal should be transported from mine to the washery preferably through closed conveyer belt to avoid air pollution.
2. The washery shall not be located in eco-sensitive zones areas.
3. The washery should have a closed system and zero discharge. The storm drainage should be treated in settling ponds before discharging into rivers/streams/water bodies.
4. A thick Green belt of about 50 m width should be developed surrounding the washery.
5. A brief description of the plant alongwith a layout, the specific technology used and the source of coal should be provided.
6. The EIA-EMP Repot should cover the impacts and management plan for the project of the capacity for which EC is sought and the impacts of specific activities, including the technology used and coal used, on the environment of the area (within 10km radius), and the environmental quality of air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts for the rated capacity. Cumulative impacts for air and water should be a part of EIA in case coal mine, TPP and other washeries are located within 10km radius. The EIA should also include mitigative measures needed to minimize adverse environmental impacts.
7. A Study Area Map of the core zone as well as the 10km area of buffer zone showing major industries/ mines and other polluting sources should be submitted. These maps shall also indicate the migratory corridors of fauna, if any and areas of endangered fauna; plants of medicinal and economic importance; any ecologically sensitive areas within the 10 km buffer zone; the shortest distance from the National Park/WL Sanctuary Tiger Reserve, etc. alongwith the comments of the Chief Wildlife Warden of the State Government.
8. Data of one-season (non-monsoon) primary- base-line data on environmental quality of air (PM10, PM2.5, SOx and NOx, noise, water (surface and groundwater), soil be submitted.
9. The wet washery should generally utilize mine water only. In case mine water is not available, the option of storage of rain water and its use should be examined. Use of surface water and ground water should be avoided.
10. Detailed water balance should be provided. The break-up of water requirement as per different activities in the mining operations vis-a-vis washery should be given. If the source of water is from surface water and/or ground water, the same may be justified besides obtaining approval of the Competent Authority for its drawl.

11. The entire sequence of mineral production, transportation, handling, transfer and storage of mineral and waste, if any, and their impacts on air quality should be shown in a flow chart with specific points where fugitive emissions can arise and specific pollution control/mitigative measures proposed to be put in place. The washed coal and rejects should be transport by train as far as possible. Road transport of washed coal and rejects should generally be avoided. In case, the TPP is within 10km radius, it should be through conveyer belt. If transport by rail is not feasible because of the topography of the area, the option for transport by road be examined in detail and its impacts along with the mitigation measures should be clearly brought out in EIA/EMP report.

12. Details of various facilities proposed to be provided in terms of parking, rest areas, canteen etc.to the personnel involved in mineral transportation, workshop and effluents/pollution load from these activities should be provided.

13. Impacts of CHP, if any, on air and water quality should also be spelt out alongwith Action Plan.

14. O.M. no. J-llOl3/25/2014-IA.I dated 11th August, 2014 to be followed with regard to CSR activities.

15. Details of Public Hearing, Notice(s) issued in newspapers, proceedings/minutes of Public Hearing, points raised by the general public and response/commitments made by the proponent along with the Action Plan and budgetary provisions be submitted in tabular form. If the Public Hearing is in the regional language, an authenticated English translation of the same should be provided. Status of any litigations/ court cases filed/pending, if any, against the project should be mentioned in EIA.

16. Analysis of samples indicating the following be submitted:
    a. Characteristics of coal prior to washing (this includes grade of coal, other characteristics of ash, Sand heavy levels of metals such as Hg, As, Pb, Cr etc).
    b. Characteristics and quantum of coal after washing.
    c. Characteristics and quantum of coal rejects.

17. Details of management/disposal/use of coal rejects should be provided. The rejects should be used in TPP located close to the washery as far as possible. If TPP is within a reasonable distance (10 km), transportation should be by conveyor belt. If it is far away, the transportation should be by rail as far as possible.

18. Copies of MOU/Agreement with linkages (for stand-alone washery) for the capacity for which EC is being sought should be submitted.

19. Corporate Environment Responsibility:
    a. The Company must have a well laid down Environment Policy approved by the Board of Directors.
    b. The Environment Policy must prescribe for standard operating process/ procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/ conditions.

c. The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions must be furnished.

d. To have proper checks and balances, the company should have a well laid down 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.

20. A detailed action Plan for Corporate Social Responsibility for the project affected people and people living in and around the project area should be provided.

21. Permission of drawl of water shall be pre-requisite for consideration of EC.

22. Wastewater /effluent should confirm to the effluent standards as prescribed under Environment (Protection) Act, 1986.

23. Details of washed coal, middling and rejects along with the MoU with the end-users should be submitted.

24. 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.