

**PROCEEDINGS OF THE MEETING OF STATE LEVEL EXPERT APPRAISAL
COMMITTEE, ODISHA HELD ON 17TH AUGUST, 2023**

The SEAC met on 17th August, 2023 at 03:30 PM by Virtual mode (VC) through video conferencing in Google Meet under the Chairmanship of Sri Sashi Paul. The following members were present in the meeting.

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| 1. Sri Sashi Paul | - | Chairman (through VC) |
| 2. Dr. K. Murugesan | - | Member Secretary |
| 3. Dr. Chittaranjan Panda | - | Member (through VC) |
| 4. Prof. (Dr.) H.B. Sahu | - | Member (through VC) |
| 5. Sri Jayant Das | - | Member (through VC) |
| 6. Er. Fakir Mohan Panigrahi | - | Member (through VC) |
| 7. Prof. (Dr.) B.K. Satapathy | - | Member (through VC) |
| 8. Dr. K.C.S Panigrahi | - | Member (through VC) |
| 9. Prof. (Dr.) Abanti Sahoo | - | Member (through VC) |
| 10. Dr. Ashok Kumar Sahu | - | Member (through VC) |
| 11. Dr. Rabinarayan Patra | - | Member (through VC) |
| 12. Er. Kumud Ranjan Acharya | - | Member (through VC) |

CONSIDERATION OF OLD PROPOSALS (COMPLIANCE RECEIVED):

The compliances furnished by the proponents were verified by the members through e-mail and also proceedings of the meeting were confirmed by the members through e-mail. The decision of the committee on case-to-case basis as follows:

ITEM NO. 01

PROPOSAL FOR ENVIRONMENTAL CLEARANCE FOR KUSUMI & MOHUDA STONE QUARRIES CLUSTER OVER AN AREA OF 27.258 ACRES OR 11.139 HECTARES IN VILLAGE KUSUMI & MOHUDA, TAHASIL KUKUDAKHANDI IN DISTRICT GANJAM OF TAHASILDAR, KUKUDAKHANDI (SUBMITTED UNDER CLUSTER APPROACH WITH TOTAL CLUSTER AREA 11.139 HECTARES WITH CONSISTING OF 5 STONE QUARRIES) - EC

1. This proposal is for environmental clearance for Kusumi & Mohuda stone quarries cluster over an area of 27.258 Acres or 11.139 hectares in village Kusumi & Mohuda, Tahasil Kukudakhandi in District Ganjam of Tahasildar, Kukudakhandi (submitted under cluster approach with total cluster area 11.139 Hectares with consisting of 5 stone quarries).
2. **Category:** The proposed project is in cluster situation as other leases are within 500 m radius of lease & total lease area becomes greater than 5 ha. So, as per the EIA notification 2006 and its subsequent amendments, proposed project falls in category B1 under Schedule of item 1(a) - Mining of Minerals.

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3. Mining plans approval details of Kusumi & Mohuda stone quarries:

S.No	Name and Address of the Mine	Khata No/Plot No	Lease Area	Mining Plan Approval	EC Status
i)	Kusumi Stone Quarry Mouza-Kusumi Lessee- Sri Surya Narayan Swar	Khata No-325 Plot No-147/P	2.294 Ha	1019/SZ, 30.07.2022	Applied for Fresh EC (ToR Granted in Cluster)
ii)	Kusumi Stone Quarry Mouza-Kusumi Lessee- Smt. Swapna Behera	Khata No-325 Plot No-147	1.199 Ha	529/SZ, 22.04.2022	Applied for Fresh EC (ToR Granted in Cluster)
iii)	Kusumi Stone Quarry Mouza-Kusumi Lessee- Smt. Swapna Behera	Khata No-325 Plot No-166	2.472 Ha	527/SZ, 22.04.2022	Applied for Fresh EC (ToR Granted in Cluster)
iv)	Mohuda Stone Quarry Mouza-Mohuda Lessee- Smt. B.Sita Reddy	Khata No-669 Plot No-1978 (P)	4.284 Ha	905/SZ , 01.07.2020	Applied for new EC (ToR Granted in Cluster)
v)	Mohuda Stone Quarry Mouza-Mohuda Lessee- Sri V.Budu	Khata No-669 Plot No-1978 (P)	0.890 Ha	531/SZ, 22.04.2022	Applied for Fresh EC (ToR Granted in Cluster)

4. There are two other identified sairat sources quarries present within 500 m of proposed cluster i.e.

S.No	Name and Address of the Mine	Khata No/Plot No	Lease Area	EC Status
i)	Mohuda Stone Quarry Mouza-Mohuda Lessee- Sri Tushar Kanta Dash	Khata No-669 Plot No-1406	2.165 Ha.	EC Granted on Date: 30.07.2022 from SEIAA & Running till 27.05.2025
ii)	Mohuda Stone Quarry Mouza-Mohuda Lessee- Sri B. Balaji Reddy	Khata No-669 Plot No-1978 (P)	2.165 Ha.	EC Granted on Date: 10.8.2021 from SEIAA & Running till 21.08.2026

5. **DLC details:** -The proposed Sairat source under Kukudakhandi Tehsil is not coming under DLC land vide Letter no-5001 dated 03 June 2022.
6. **TOR details:** Terms of Reference (TOR) has been prescribed by SEIAA, Odisha vide Reference No: 5157/ SEIAA; File no. SIA/OR/MIN/81911/2022 dated 19.08.2022.
7. **Public hearing details:** Public hearing was successfully conducted on date 23.11.2022 at village-Kusumi, Tehsil-Kukudakhandi, District- Ganjam, Odisha. Issues raised during public hearing are local employment, local development, construction material availability for developmental works, assistance to local people, plantation, and control blasting. Funds allocated for Public Hearing issues are: Rs.89000.00 for plantation, 0.20lakhs for medical camp and 0.50lakhs for distribution of books and educational awareness campaign.
8. **Location and connectivity:** The Kusumi & Mohuda Stone Quarry lease is located at Village-Kusumi & Mohuda, Tehsil- Kukudakhandi, District-Ganjam, Odisha. The area falls in Survey of India topo sheet No. 74A/11, 74A/12, 74A/15& 74A/16.Kusumi stone quarry bears Khata no.325 plot nos.147/P (2.294 ha.),147(2.472 ha.) and 166(1.199 ha.) while Mohuda stone quarry bears Khata no 669, Plot no 1978(P) with 0.890 and 4.284 hectares. The quarry area bounded between the Latitude -19°16'37.96" N to 19°17'5.62" N and Longitude - 84°44'08.06" E to

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84°44'36.64" E with an elevation of about 60m RL to 38 mRL. Nearest railway line is Berhampur Railway station at 6.0 Km NE, NH-16 is at 4.50 km in SE, SH- 22 is at 1.20 km in NW. Nearest road bridge is at Haladiapadara over bridge at a distance of 4.50km SE and nearest river embankment is at 20km in SW. Nearest reserve forest is Ramagurha reserve forest at a distance of 3.30 km in SW.

9. There is no National Park or Biosphere Reserve within 10 km distance from the lease area. The life of the mine will be 27 years for cluster.
10. **Topography and drainage:** The area falls in Eastern Ghats of Odisha in Ganjam district. This group of formation comprises of granitic gneisses, granites, khondalites, chanoctites and granitoids. A variety of Granite Gneiss forming peneplains ground occurs at geomorphic levels above 100- 150MSL. They are believed to be late proterozoic age. The quarry lease has highest elevation of about 60m RL and lowest elevation of 38 mRL. There is no stream crossing in the mine lease area. Dakhinapur Reservoirs is at approx 5.60 km towards NE direction.
11. **Reserves and total production:** As estimated, reserves of Kusumi and Mohuda stone mining lease is presently spanning over an area of 11.139ha. (Cluster area). The proposed project is to mine Kusumi & Mohuda Stone Quarry (Cluster Area 11.139ha.) for proposed production of 37,364 cum/year (under cluster approach).

Name of The Mine	Production (cum)
Kusumi Stone Quarry (2.294 ha.)	8015
Kusumi Stone Quarry (2.472 ha.)	10098
Kusumi Stone Quarry (1.199 ha.)	6148
Mahuda Stone Quarry (0.890 ha.)	3015
Mahuda Stone Quarry (4.284 ha.)	10088
Total	37,364

Name of The Mine	Geological Reserves (cum)	Mineable Reserves (cum)
Kusumi Stone Quarry (2.294 ha.)	308307	219675
Kusumi Stone Quarry (2.472 ha.)	338138	188865
Kusumi Stone Quarry (1.199 ha.)	76976	51516
Mahuda Stone Quarry (0.890 ha.)	86197	47466
Mahuda Stone Quarry (4.284 ha.)	637641	507237

12. **Mining method:** Mining will be done by semi-mechanized method. Mining will be done by deploying machines like jackhammer, drill compressor, rock breaker, excavator and tractors/trucks. Tipper and trucks will be used for transporting stone and waste. Drilling & blasting will be carried out as & when required. In a month, around 57- 63 no. of drill holes will be made. On monthly basis around 24kg of non-explosive blasting material will be consumed. Blasting will be carried out by an employed blaster. Short hole blasting will be practiced. Bench height will be 5.0 m and Width 5.0m. Ultimate pit slope will be 45°.
13. **Waste generation:** About 10% of mine waste will be generated which is mineral fines along with undersized material & other intermediate weathered products. These wastes will be disposed to

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the proposed dump yard in NW part of lease area. These wastes will be used for the construction of mine road. The retaining wall around the dump will be constructed to prevent the wash off dump. Around the retaining a garland drain and settling tank will be provided to prevent the possible transportation of mine dust or fines. Garland drain will be provided in 522m boundary of section 2.0m x 1.5m. The protective bound will also be prepared around the periphery of the ML area in 5m width.

Year	Waste Generation (cu.m.)				
	Kusumi Stone Quarry (2.294 ha.)	Kusumi Stone Quarry (2.472 ha.)	Kusumi Stone Quarry (1.199 ha.)	Mohuda Stone Quarry (0.890 ha.)	Mohuda Stone Quarry (4.284 ha.)
1 st	3435	1122	1537	335	2522
2 nd	3435	1122	1537	335	2522
3 rd	3435	1122	1537	335	2522
4 th	3435	1122	1537	335	2522
5 th	3435	1122	1537	335	2522

14. **Baseline study:** Study at the site was monitored during pre-monsoon season March 2022 to May, 2022. Following observations were made:

- a) **Ambient Air quality:** The minimum and maximum level of PM_{2.5} recorded within the study area was in the range of 25.23µg/m³ to 43.51µg/m³ with the 98th percentile ranging between 38.44µg/m³ to 43.35µg/m³. The 24 hourly average values of PM_{2.5} were compared with the National Ambient Air Quality Standards (NAAQS) and found that all sampling stations recorded in the study area are within the applicable limits i.e., 60 µg/m³ for PM_{2.5} in rural areas. The minimum and maximum level of PM₁₀ recorded within the study area was in the range of 51.28µg/m³ to 78.13µg/m³ with the 98th percentile ranging between 72.38µg/m³ to 77.58µg/m³. The minimum and maximum concentration of SO₂ recorded within the study area was 6.23 µg/m³ to 9.78 µg/m³ with the 98th percentile ranging between 7.74µg/m³ to 9.77µg/m³. The minimum and maximum level of NO₂ recorded within the study area was in the range of was 8.03µg/m³ to 15.21µg/m³ with the 98th percentile ranging between 10.49µg/m³ to 15.21µg/m³.
- b) **Water quality:** During the study period, the pH was varying for ground waters from 7.15 to 7.48 & in Surface water from 7.57 to 7.62. The total dissolved solids are varying from 275 mg/l to 303 mg/l. Hardness of ground water varies from 114 mg/l to 135 mg/l. Concentration of Fluorides is less than <0.01mg/l.
- c) **Noise levels study:** The values of noise observed in some of the areas are primarily owing to vehicular traffic. Assessment of hourly night time Leq (Ln) varies from 37.6to 44.3dB (A) and the hourly daytime Leq (Ld) varies from 48.7to 59.2dB (A) within the study area.
- d) **Soil:** In the study area, variations in the pH of the soil were found to be slightly alkaline (7.32 to 8.05).

15. **Water requirement:** A total of 17 KLD water will be required for Cluster applied area. The water will be supplied from available sources from nearby village.

Purpose	Water requirement (KLD)					Total
	Kusumi Stone Quarry (2.294 Ha.)	Kusumi Stone Quarry (2.472 Ha.)	Kusumi Stone Quarry (1.199 Ha.)	Mohuda Stone Quarry (0.890 Ha.)	Mohuda Stone Quarry (4.284 Ha.)	
Domestic & drinking	0.85	1.03	0.67	0.67	0.85	4.07
Dust suppression	9.2					9.2
Green belt development	2.75					2.75
Total						16.02 ~ 17 KLD

16. **Wastewater management:** The wastewater generation from the above consumption is mainly from domestic consumption i.e., the wastewater generated from the domestic front is mainly from toilets. This water will be treated in septic tank followed by soak pit.
17. **Power supply:** Electrical power will be required only for site office and will be obtained from Solar energy. Transportation will be done through dumpers or trucks operating on diesel. No storage for diesel is proposed.
18. **Greenbelt:** The entire plantation will be done on the periphery of the reclaimed area. Precautionary measures will be taken for care of the forestation made by regular watering in the afforested area, to protect from grazing animals.

Year	Total Plantation	Green belt Nos.				
		Kusumi Stone Quarry (2.294 Ha.)	Kusumi Stone Quarry (2.472 Ha.)	Kusumi Stone Quarry (1.199 Ha.)	Mohuda Stone Quarry (0.890 Ha.)	Mohuda Stone Quarry (4.284 Ha.)
1 st year	1377	189	438	250	250	250
2 nd year	1377	189	438	250	250	250
3 rd year	1377	189	438	250	250	250
4 th year	1377	189	438	250	250	250
5 th year	1377	189	438	250	250	250
Total	6890	945	2190	1250	1250	1250

19. **Employment generation:** The total manpower requirement for the proposed project is 91 persons.
20. **Project cost:** The estimated cost of the project is 2.6 Crores (Cluster).

S.No	Name and Address of the Mine	Applicant	Total Cost (Rs)	CER 2% of Total Cost in Rs)
i)	Kusumi Stone Quarry Khata No 325, Plot No 147/P, Mouza-Kusumi	Sri Surya Narayan Swar	60 Lakhs	Rs 1,20,000
ii)	Kusumi Stone Quarry Khata No 325, Plot No 166, Mouza-Kusumi	Smt. Swapna Behera	50 Lakhs	Rs 1,00,000

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S.No	Name and Address of the Mine	Applicant	Total Cost (Rs)	CER 2% of Total Cost in Rs)
iii)	Kusumi Stone Quarry Khata No 325, Plot No 147, Mouza-Kusumi	Smt. Swapna Behera	50 Lakhs	Rs 1,00,000
iv)	Mohuda Stone Quarry Khata No 669, Plot No 1978/P, Mouza-Mohuda	Smt. B. Sita Reddy	50 Lakhs	Rs 1,00,000
v)	Mohuda Stone Quarry Khata No 669, Plot No 1978(P), Mouza-Mohuda	Sri V. Budu	50 Lakhs	Rs 1,00,000

The EMP (For Cluster) cost includes capital cost of Rs 20.02 Lakhs and recurring cost of 12.50 Lakhs.

Sl. No.	Measures	Capital Cost (In Rs.)	Recurring Cost (In Rs.)
i)	Water Sprinkling/Air Pollution Control (Dust Suppression along haulage road and mine)	--	5,00,000
ii)	Greenbelt development safety zone 7.5 mtr and along the road (for each plants including hedges and fences)	13,77,000	2,50,000
iii)	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	--	2,50,000
iv)	Construction and Maintenance of Haul Road	6,25,000	2,50,000
Total		20,02,000	12,50,000

21. **Environment Consultant:** The Environment consultant M/s P & M Solution, Noida along with the proponent made a presentation on the proposal before the Committee on dtd. 10.03.2023.

22. The SEAC in its meeting held on dated 10-03-2023 recommended the following:

A) The proponent may be asked to submit the followings for further processing of EC application;

- i) There are 7 quarries in cluster, out of which EC has been granted by DEIAA to 2 quarries. Clarification how DEIAA has granted EC to 2 quarries when total cluster area was more than 5 ha. Further, proper justification/Clarification through a write-up from district authority that why it should not be considered as violation.
- ii) Copies of Environmental Clearance of 2 quarries granted by DEIAA.
- iii) Mitigation plan for flying rocks during blasting in cluster.
- iv) Layout plan of garland drain and settling pond and silt management.
- v) Details of nearby structures in tabulated form.
- vi) Mohuda Solid Waste Management Plant of Berhampur Municipal Corporation is located around 170 meter away from the quarries. Permission from Berhampur Municipal Corporation for operation of stone quarries near to Mohuda Solid Waste Management Plant.

B) The proposed site shall be visited by Sub-Committee of SEAC to verify the followings;

- i) Environmental settings of the lease area.
- ii) Cluster situation of the total lease area.
- iii) Mining activity, if any carried out in the lease area.

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- iv) Road connectivity to the lease area.
- v) Possible impact of mining activity on the Common Solid Waste Management Plant (Mohuda) of Berhampur Municipal Corporation.
- vi) Any other issues including local issues.

23. The proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
a)	<p>There are 7 quarries in cluster, out of which EC has been granted by DEIAA to 2 quarries. Clarification how DEIAA has granted EC to 2 quarries when total cluster area was more than 5 ha. Further, proper justification/Clarification through a write-up from district authority that why it should not be considered as violation.</p>	<p>The Compliance report from the district authority is attached herewith, as Annexure – I.</p> <p>On verification of the records, it is found that 7 (seven) no. of sairat proposals were submitted separately by the Tahasildar, Kukudakhandi for grant of Environmental Clearance in respect of Mohuda and Kusumi Quarries. All the proposals were supported by the documents such as, Mining Plan approval, Check list, form 1m etc.</p> <p>Out of 7 (seven) no. of proposals, 4 (Four) no. of proposals i.e. (1 Kusumi-I) Stone Quarry (2) Mohuda Stone Quarry (3) Kusumi –II Stone quarry (4) Mohuda Stone Quarry – 1 were approved in DEIAA meeting held on 29.06.2016.</p> <p>1 (one) no. of Proposal i.e. Mohuda Road Metal Quarry was approved in DEIAA meeting held on Dated 06.12.2016.</p> <p>All the above proposals were applied by different proponents individually (not in cluster) along with a certificate issued by the Tahasildar, Kukudakhandi in the Check List.</p> <p>Remaining, 2(two) no. of Proposals i.e. (1) Kusumi Stone Quarry (2) Kusumi Stone quarry-1 were applied in a Cluster Proposal by Tahasildar, Kukudakhandi with two different plot nos. Such as Plot No. 147/1 and Plot No. 147. The area of Plot No. 147/1 is 2.294 Hectors and Plot No. 147 is 2.472 Hectors with a total area applied is 4.776 Hectors (within 5 Hectors). Basing on this, the Cluster Proposal was approved for granting of EC by DEIAA on 01.05.2017.</p>	-

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
b)	Copies of Environmental Clearance of 2 quarries granted by DEIAA.	DEIAA granted only one Stone quarry vide letter no. 1732 Dated 21.12.2016, the other has been granted by SEIAA Dated 10.08.2021 attached as Annexure – II.	The other quarry which had been granted by SEIAA Dated 10.08.2021 is not attached as Annexure – II of the Compliance report.
c)	Mitigation plan for flying rocks during blasting in cluster.	Attached as Annexure – III.	complied
d)	Layout plan of garland drain and settling pond and silt management.	Attached as Annexure – IV.	complied
e)	Details of nearby structures in tabulated form.	Attached as Annexure – V.	complied
f)	Mohuda Solid Waste Management Plant of Berhampur Municipal Corporation is located around 170 meter away from the quarries. Permission from Berhampur Municipal Corporation for operation of stone quarries near to Mohuda Solid Waste Management	Copy of NOC from Berhampur Municipal Corporation is attached as Annexure – VI.	Copy of NOC from Berhampur Municipal Corporation is attached as Annexure – VI has been submitted with specific conditions.

24. The SEAC in its meeting held on dated **12.07.2023**, decided to take decision on the proposal after receipt of the following information / documents from the proponent followed by a site visit by the Sub-Committee of SEAC.

- a) As stated by PP, copy of Environment Clearance letter of the other quarry which had been granted by SEIAA, dated 10.08.2021.

25. The proposed site was visited by the sub-committee of SEAC on 10.07.2023. Following are the observations of the sub-committee:

- a) The lease area is located in the deep remote area with no habitation except some institutions/ infrastructure as listed below which fall within 1 Km radius.
- a) BeMC Solid Waste Management Plant
 - b) Bhairabi High School
 - c) Gram Bikash, Mohuda
 - d) Supriya Memorial SX Public School
- b) There are seven mines in this cluster. Out of which two are in operational at present as approved by DEIAA. The rest five are not operated at present as notice during field visit. One of the lessee named Swapna Behera has a crusher unit adjacent to Kusumi Stone quarry bearing Khata No 325, Plot No 147 and Plot No 166.
- c) There is no mining activity carried out in the lease areas applied for EC.
- d) There is road connectivity separately for each mine which falls within the lease area itself.

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- e) Common Solid Waste Management Plant of BeMC has been established during the year 2021. Since then, no mining activities have been carried out in the lease area. So, it is pre-mature to say about the impact. However, the Commissioner, BeMC has issued NOC regarding operation of stone quarries near Mohuda Solid Waste Management Plant with certain conditions while operating the mines vide his Letter Dated 12.06.2023.

26. The proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
1)	As stated by PP, copy of Environment Clearance letter of the other quarry which had been granted by SEIAA, dated 10.08.2021.	Copy of the EC granted by SEIAA vide Letter No. 2164/SEIAA Dated 10.08.2021 in respect of Mahuda Stone Quarry is attached as Annexure – I.

Considering the information / documents furnished by the proponent and presentation made by the consultant M/s P & M Solution, C-88, Sector 65, Noida on behalf of the proponent, the SEAC approved the EIA/EMP report in cluster approach and recommended the following:

- a) The SEIAA, Odisha may consider to grant Environmental Clearance to individual lease for Kusumi & Mohuda stone quarries cluster without referring to SEAC with specific conditions as per Annexure – A after receipt of individual applications from the lessee in cluster along with following documents.
- i) Filled in form-I of individual lease
 - ii) Prefeasibility report of individual lease
 - iii) EMP of individual lease.
 - iv) Approved Mining Plan of individual lease.
 - v) Report on vibration study.
 - vi) DLC status of the lease area from concerned DFO as certified by the concerned Tahasildar.
 - vii) An Undertaking by the lessee not to use wagon drilling blasting to be submitted. Accordingly, specific condition to be stipulated in EC of individual lease.
 - viii) No storage and usage of blasting materials/explosives inside the lease area without license/permission/authorization from competent Authority as per Indian Explosives Rules, 1983 shall be ensured by the lessee. An undertaking to this effect shall be submitted by the lessee. Accordingly, specific condition to be stipulated in EC of individual lease.
 - ix) An undertaking to obtain NOC from CGWA and permission from WR department, Govt. Of Odisha for use of ground water. Accordingly, specific condition to be stipulated in EC of individual lease.
 - x) Specific condition to be stipulated in EC of individual lease that "the project proponent shall maintain periodic health check-up records of their employees and ensure use of face mask by workers in crushing and handling sections of the stone quarry for ensuring that working personnel are not affected by silicosis".

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- xi) The project proponent shall undertake re-grassing of the area or any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for fodder, flora, fauna etc. after ceasing mining operation that is at the time of mine closure. Accordingly, specific condition to be stipulated in EC of individual lease.
- xii) Following specific conditions to be stipulated in EC of individual lease for operation of stone quarries near SWM project at Mohuda as suggested by Commissioner, Berhampur Municipal Corporation in its NoC issued vide letter no. 8247, dated 12.06.2023.
- Necessary Precautionary measure shall be taken to avoid any dangerous inside the Solid Waste Management Plant, during the blasting time (prevent dangerous situation from flying rocks during blasting time) and liquid blasting shall be done.
 - Steps shall also be taken to avoid/ restrict the flying of crusher dust and deposit of the same within the Solid Waste Management Plant.
 - Green corridor should be ensured between SWM plant and Quarry site.
 - Life and safety of workers deployed in SWM plant and property shall be ensured at all times. If any hazardous situation occurs due to operation of Stone quarries, the lease will bear full responsibility regarding the same and NOC shall be withdrawn.
 - Detail risk and hazard management procedure as per the Annexure – B shall be followed by the lessee.

ITEM NO. 02

PROPOSAL OF ENVIRONMENTAL CLEARANCE CONSTRUCTION OF SRI JAGADGURU KRIPALU 400 BEDED MULTI-PURPOSE HOSPITAL & RESEARCH CENTER WITH TOTAL PLOT AREA OF 56372.71 SQ.M I.E. 13.930 ACRES AND PLOT AREA OF 37504 SQ.M AT JAGADGURU KRIPALU UNIVERSITY, BANARA, CUTTACK DISTRICT OF SMT SULAKSHYANA DAS – EC

- This proposal is for Environmental Clearance Construction of Sri Jagadguru Kripalu 400 Beded Multi-Purpose Hospital & Research Center with total plot area of 56372.71 Sq.m i.e. 13.930 Acres and plot area of 37504 Sq.m at Jagadguru Kripalu University, Banara, Cuttack district of Smt Sulakshyana Das.
- The project falls under category "B" or activity 8(a) Building and Construction projects under EIA Notification dated 14th September 2006 as amended from time to time.
- Jagadguru Kripalu University is proposing for establishment of 400 bedded hospital and research center in outskirts of Cuttack City at Vill: Baanara, Banki, Cuttack District, Odisha. The plot area meant for construction of 400 bedded hospital will be established over an area of 13.930 Acres i.e 56372.71 Sq.m with a total builtup area of 37404 Sq.m. Total parking provided for the project will be 11300 sq.m open parking (30% of builtup area) and 11274 sq.m green cover area (20% of Plot area). The land is of Gharabari kissam without any forest land included.
- Location and Connectivity** – The project is located at Plot No. 3654, 3656, 3858/4922, 3858/5001, Khata No- 771/462; Kissam – GharabariMauza Banara, Via: Munduli, Tahasil:

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Dampada. The Hospital will be constructed within the existing campus of JKU. The Geographical co-ordinate of the project site are Latitude: 20° 24' 49.21" - 20° 25' 3.35" N, Longitude: 85° 45' 22"- 85° 45' 22"37 E. and finds place in Toposheet no. 73H/11. The nearest road is Banki Cuttack road at 1km. Nearest Railway station Baranga at 7km. Nearest River is Mahanadi at 2.5km. Munduli Barage at 3.5km. Chandaka Reserve forest at 1km. The nearest Ecologically sensitive area is Chandaka Elephant Sanctuary which is located at 1 Km from the project. The project site is located outside the ESZ boundary of the sanctuary.

5. **Water Requirement** - Total water requirement will be 677 cum per day out of which fresh water requirement will be 406 Cu.m Per day. Water will be sourced from ground water through bore well. Out of the total water requirement of 677 KLD, 406 KLD (60%) of fresh water, which will be met through bore well for drinking, washing and other domestic purpose. 271 KLD (40%) of water will be made available from treated waste water for Flushing and gardening purpose. Application to CGWA for withdrawal of ground water is under process. The treated waste water will be completely used for green belt development, HVAC use and washing purpose.
6. **Waste Water Management** - The waste water generated from the project will be 271 KLD which will be treated through a Sewage Treatment Plant of 370 KLD. Another ETP is proposed for treatment of infectious waste water with capacity of 40 KLD.
7. **Rain water Harvesting** - For water conservation rain water harvesting pits/tank is proposed which consists of 10 nos of each having dimension 35.325cu.m rain water recharge pits.
8. **Power Requirement** - Based on the Electrical Load calculation, overall maximum demand load is anticipated as approximately 2.5 MVA. 162 KW of solar power generation proposal is included in the project which reduces 7% of the total power requirement. Total power requirement for the project is 2406 KW Backup power requirement by DG = 1 x1250 kVA + 2 x750 kVA = 2750 kVA. Backup power generated = 2475 KW. For complete power back up 1x 1250 and 2x750 kVA DG set is required
9. **Green belt** - Plantation will be made over an area of 11274 Sq.Mt with 2815 saplings. The plantation will completed within 3 years of construction period.
10. **Solid Waste Generation** - During the implementation of the project the biomedical waste generated from the project will about 2100 Kg. The Bio medical waste generated will be collected, segregated and disposed as per Biomedical waste management rule, 2016. 3 Nos of solid waste segregation room will be constructed for separation of biological waste and other solid waste. Bio medical waste will be disposed through authorized agencies (RAMKY) (Authorized by Odisha State Pollution Control Board)
11. **Fire Fighting system** - The project includes Static water storage tanks and Fire pumps, Wet Riser system, Hose Reels, Portable Fire extinguishers, Automatic Sprinkler system. There is the proposal for 100 Cu.m UG tank and 10 cu.m OHT for fire fighting. The internal road will be 7m wide road which can serve for movement of fire vehicles. In the circulation plan of the project, there will be proper entry and exit points for systematic control of the vehicular movement within the medical complex.
12. All the materials used in construction of this building are strictly in accordance with BIS/ISI specifications and norms conforming to National Building Code, 2016 covering all the safety

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factors including earthquake and cyclone. The project obtained structural safety certification from the competent authority regarding the construction of the building.

13. **Project Cost** - Total cost of the project is Rs.90.76 crores and the capital cost for EMP is 95 lakhs and the recurring cost will be 27 Lakhs per annum.
14. The Environment Consultant **M/s Kalyani Laboratories Pvt. Ltd. Bhubaneswar** along with the proponent made a detailed presentation on the proposal before the Committee on 02.09.2022.
15. The SEAC in its meeting dated 02-09-2022 decided to take decision on the proposal after receipt of certain information / documents from the proponent followed by site visit of the sub-Committee of SEAC.
 - a) Backup calculation to attain Zero liquid Discharge concept.
 - b) Details of Rain water Harvesting.
 - c) Location, Source and utilisation/ disposal of 40KLD ETP affluent.
 - d) Provision for Incinerator.
 - e) Location of STP, disposal of STP water with no integration of STP & ETP.
 - f) Backup calculation of 175KLD water used in HVAC.
 - g) Parking area in terms of ECS for 4 wheelers and 2 wheelers and their location for staffs, patients and visitors.
 - h) Traffic Study Report to be submitted duly vetted by institute of repute.
 - i) Layout plan and width of road for movement of Fire Tender.
 - j) Detailed calculation of greenbelt with breakup and dimensions.
 - k) Backup calculation of DG sets of 2750KW.
 - l) Layout map showing nearest drain and it's distance.
 - m) Layout of internal drainage map and their fallout if any to external public drain.
 - n) Copy of permission of the concerned authority of the drain to discharge if any water from project to the nearby drain.
 - o) Breakup of total built up area of the whole project area including university.
 - p) Permission/Undertaking that total built up area will not exceed 150000sq.mt.
 - q) Approval Letter from Fire Safety Deptt.
 - r) Details of accreditation of the University.
 - s) Construction status of the project of the university such as prior to 2006 and after 2006 and till now.
16. The proposed site was visited by the sub-committee of SEAC on 14.11.2022. Following are the observations of the sub-committee:
 - a) The proponent and consultants showed us the proposed land for the establishment of 400-bedded hospital & research centre.
 - b) The land has not been developed at all and hence, no construction work has been started.
 - c) The proponent has been advised to submit lay out map for parking, ETP, STP, entire drainage system, entry & exit gates, etc., while submitting for EC.

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17. The proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC																																
a)	Backup calculation to attain Zero liquid Discharge concept.	Water requirement, Water balance and details of Zero Liquid discharge has been attached as Annexure 1	Annexure 1 is attached and complied.																																
b)	Details of Rain water Harvesting.	Details of rain water harvesting is attached as Annexure 2	Annexure 2 is attached and complied.																																
c)	Location, Source and utilisation/ disposal of 40KLD ETP affluent.	Details of ETP, Location Source, and utilisation/ disposal of 40KLD ETP affluent is attached as Annexure 3	Annexure 3 is attached and complied.																																
d)	Provision for Incinerator.	We will install an incinerator of 250 Kg/hr capacity. The incinerator will be provided with Bagfilter and emission will be maintained as per the CPCB guideline. <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>S. No.</th> <th>Parameter</th> <th colspan="2">Standards</th> </tr> <tr> <th>(1)</th> <th>(2)</th> <th>(3)</th> <th>(4)</th> </tr> <tr> <td></td> <td></td> <td>Limiting concentration in mg Nm³ unless stated</td> <td>Sampling Duration in minutes, unless stated</td> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Particulate matter</td> <td>50</td> <td>30 or 1NM³ of sample volume, whichever is more</td> </tr> <tr> <td>2.</td> <td>Nitrogen Oxides NO and NO₂ expressed asNO₂</td> <td>400</td> <td>30 for online sampling or grab sample</td> </tr> <tr> <td>3.</td> <td>HCl</td> <td>50</td> <td>30 or 1NM³ of sample volume, whichever is more</td> </tr> <tr> <td>4.</td> <td>Total Dioxins and Furans</td> <td>0.1ng TEQ/Nm³ (at 11% O₂)</td> <td>8 hours or 5NM³ of sample volume, whichever is more</td> </tr> <tr> <td>5.</td> <td>Hg and its compounds</td> <td>0.05</td> <td>2 hours or 1NM³ of sample volume, whichever is more</td> </tr> </tbody> </table>	S. No.	Parameter	Standards		(1)	(2)	(3)	(4)			Limiting concentration in mg Nm ³ unless stated	Sampling Duration in minutes, unless stated	1.	Particulate matter	50	30 or 1NM ³ of sample volume, whichever is more	2.	Nitrogen Oxides NO and NO ₂ expressed asNO ₂	400	30 for online sampling or grab sample	3.	HCl	50	30 or 1NM ³ of sample volume, whichever is more	4.	Total Dioxins and Furans	0.1ng TEQ/Nm ³ (at 11% O ₂)	8 hours or 5NM ³ of sample volume, whichever is more	5.	Hg and its compounds	0.05	2 hours or 1NM ³ of sample volume, whichever is more	-
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e)	Location of STP, disposal of STP water with no integration of STP & ETP.	There will be no integration of STP with ETP. The Location of STP is given as Annexure 4 . <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2">ZERO LIQUID DISCHARGE</th> </tr> </thead> <tbody> <tr> <td>Capacity of STP</td> <td>370 KLD</td> </tr> <tr> <td>Treated waste water from STP</td> <td>271 KLD</td> </tr> <tr> <td>Utilization of Treated water for Flushing (Dual Plumbing)</td> <td>81 KLD</td> </tr> <tr> <td>Utilization of treated water for green belt development</td> <td>15 KLD</td> </tr> <tr> <td>Utilization of treated water for HVAC</td> <td>175 KLD</td> </tr> <tr> <td colspan="2">No treated water will be discharged outside the premises</td> </tr> </tbody> </table>	ZERO LIQUID DISCHARGE		Capacity of STP	370 KLD	Treated waste water from STP	271 KLD	Utilization of Treated water for Flushing (Dual Plumbing)	81 KLD	Utilization of treated water for green belt development	15 KLD	Utilization of treated water for HVAC	175 KLD	No treated water will be discharged outside the premises		Annexure 4 is attached.																		
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f)	Backup calculation of 175KLD water used in HVAC.	Back up calculation of 175 KLD water used in HVAC is attached as Annexure 5 .	Annexure 5 is attached.																																
g)	Parking area in terms of ECS for 4 wheelers and 2 wheelers and their location for staffs, patients and visitors.	Parking area in terms of ECS for 4 wheelers and 2 wheelers and their location for staffs, patients and visitors is attached as Annexure 6 .	Annexure 6 is attached but location/layout not showed.																																
h)	Traffic Study Report to be submitted duly vetted by institute of repute.	Detail traffic study report is attached as Annexure 7 .	Traffic Study Report findings state LOS – B. Traffic study Report is not vetted by reputed institute.																																
i)	Layout plan and width of road for movement of	Layout plan and width of road for movement of Fire Tender attached as Annexure 8 .	Annexure 8 is attached																																

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
	Fire Tender.		
j)	Detailed calculation of greenbelt with breakup and dimensions.	Detailed calculation of greenbelt with breakup and dimensions is attached as Annexure 9.	Layout of the greenbelt with proposed species is given but calculation of greenbelt with breakup is not visible in layout. Only total greenbelt area 11274sqm is given.
k)	Backup calculation of DG sets of 2750KW.	Detail back up calculation for DG set requirement is attached is 2750 KW. Annexure 10.	Solar power calculation, generation and use in % of total power is not submitted.
l)	Layout map showing nearest drain and its distance.	There is no proposal for discharge of waste water from the project to outside. The entire treated water will be utilized for watering of the plantation area, HVAC makeup water and sprinkling purpose.	Layout map showing nearest drain and its distance is not given.
m)	Layout of internal drainage map and their fallout if any to external public drain.	There is no proposal for discharge of waste water from the project to outside. The entire treated water will be utilized for watering of the plantation area, HVAC makeup water and sprinkling purpose. Internal drainage plan is attached as Annexure 11.	Annexure 11 is attached
n)	Copy of permission of the concerned authority of the drain to discharge if any water from project to the nearby drain.	There is no proposal for discharge of waste water from the project to outside. The entire treated water will be utilized for watering of the plantation area, HVAC makeup water and sprinkling purpose.	Complied.
o)	Breakup of total built up area of the whole project area including university.	Detail breakup of the built-up area is attached as Annexure 12.	Annexure 12 is attached
p)	Permission/Undertaking that total built up area will not exceed 150000sq.mt.	Undertaking attached as Annexure 13.	Annexure 13 is attached
q)	Approval Letter from Fire Safety Deptt.	Approval from Fire safety department will be obtained after the completion of construction work.
r)	Details of accreditation of the University.	Details of accreditation of the University is attached as Annexure 14.	Annexure 14 is attached
s)	Construction status of the project of the	Construction status of project of the university such as prior to 2006 and after 2006 and till now	Annexure 14 is attached

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
	university such as prior to 2006 and after 2006 and till now.	is attached as Annexure 15.	mentioning in undertaking that there was no construction of projects prior to 2006 and construction started of University started from 2017.

Sub- Committee Observation:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
a)	Lay out map for hospital road network, starting from entry gate to exit gate.	Layout plan of the hospital road is attached Annexure A.	-
b)	Lay out map for parking area for 4 wheelers and 2 wheelers for staffs, patients and visitors.	Lay out map for parking area for 4 wheelers and 2 wheelers for staffs, patients, and visitors attached as Annexure A.	-
c)	Traffic Study Report to be submitted.	Detail traffic study report is attached as Annexure 7.	-
d)	Layout plan for Firefighting gadgets and width of road for movement of Fire fighting vehicles.	Layout plan for Firefighting gadgets and width of road for movement of Fire fighting vehicles attached as Annexure 8.	-
e)	Detailed calculation of greenbelt with breakup and dimensions. Backup calculation of DG sets of 2750KW.	Detail back up calculation for DG set requirement is attached is 2750 KW. Annexure 9.	Annexure 10 is attached power and DG set backup calculation.
f)	Details of Rain Water Harvesting.	Details of rain water harvesting is attached as Annexure 2.	-
g)	Layout map for entire drainage system showing nearest public drain and its distance.	There will be no discharge of water from the hospital to outside drain. The drainage system map is attached as Annexure 3.	-
h)	Location, Source and utilisation/ disposal ETP and STP effluents, special emphasis on Zero Liquid Discharge concept.	Water requirement, Water balance and details of Zero Liquid discharge has been attached as Annexure 1.	-
i)	Details of solar power calculation, generation and use in % of total power.	Details of solar power calculation, generation and use in % of total power attached as Annexure 10.	Not submitted
j)	Stack height vs building height may be furnished.	The maximum height of the building will be 15 m and the height of the DG stack proposed is 30m which is much above the building height.	-
k)	Layout for green belt.		Given

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18. The SEAC in its meeting held on 03-05-2023 decided to take decision on the proposal after receipt of the following information / documents from the proponent. The proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
i)	Location / layout showing Parking area in terms of ECS for 4 wheelers and 2 wheelers for staffs, patients and visitors.	Location and Layout plan showing parking area in terms of ECS for 4 wheelers and 2 wheelers for staffs, patients and visitors is attached as Annexure 1.
ii)	Traffic study Report submitted is not vetted by reputed institute. Hence, vetted Traffic Study Report shall be submitted.	Vetted traffic report attached as Annexure 2.
iii)	Layout of the greenbelt with proposed species is given but calculation of greenbelt with breakup is not visible in layout. Only total greenbelt area 11274sqm is given. Hence, a visible layout showing details to be submitted.	Layout plan Showing the Green belt area is attached as Annexure 3.
iv)	Solar power calculation, generation and use in % of total power is not submitted. Hence, it shall be submitted.	Solar Power calculation, generation and use in terms of percentage of total power is attached Annexure 4.
v)	Layout map showing nearest drain and its distance is not given. Hence, it shall be submitted.	No waste water will be discharged to outside the project site. The waste water generated from the project will be treated through 40 KLD ETP and 370 KLD STP. Treated waste water will be utilized for Dual plumbing (Flushing) green belt development, washing and HVAC makeup water. Surface runoff water from the project site will be pass through the internal surface water drain and recharge through 8 nos of recharge pit. There is no surface water drain/ sewer drain constructed in the nearby area.
vi)	Construction status of the project of the university such as prior to 2006 and after 2006 and till now has not been submitted. Hence, it shall be submitted.	The construction of university started in the year 2017. There was no construction activities prior 2006. Undertaking in this regard attached for Reference. Annexure – 5.

19. The Committee observed that they have started construction for university but not for the Hospital component for which EC has been applied.

Considering the information / documents furnished by the proponent and presentation made by the consultant M/s Kalyani Laboratories Pvt. Ltd. Bhubaneswar on behalf of the project proponent, the SEAC recommended for grant of Environmental Clearance for the project valid for a period of 10 years with stipulated conditions as per Annexure – C in addition to following specific conditions:

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- (i) The project is built on an area of 13.93 acres and from the available document it is noted that the site is not connected to any outside storm water drain for facilitating effective drainage of rainwater from the project site during periods of natural rainfall. The project proponent has declared that the entire surface run off from the entire project site during rainfall will be recharged to the ground through the constructed rainwater pits. Hence, it is important to ensure that the proposed plan of diverting entire surface run off from the project site during rainfall to the ground water system through the constructed rainwater recharge pits can be effectively done during natural rainfall keeping in view natural ground water level during rainy season, flow of ground water at the project site and maximum anticipated rainfall in any season as well as highest anticipated intensity of such rain fall in any day.
- (ii) As it is not practically possible to manage surface runoff with RWH in rainy season, the PP need to plan and have a drain till the nearest fallout for the extra surface runoff with due permission from the appropriate authority.

ITEM NO. 03

PROPOSAL FOR ENVIRONMENTAL CLEARANCE FOR OSTAPURA-BHOLANUAGAON CLUSTER STONE QUARRY OVER AN AREA OF 10.925 HA IN VILLAGE - OSTAPURA & BHOLANUAGAON, TAHASIL – GHASIPURA IN DISTRICT KEONJHAR OF SMT SAGARIKA JENA - EC

1. This proposal is for Environmental Clearance for Ostapura-Bholanuagaon Cluster Stone Quarry over an area of 10.925 Ha in village - Ostapura & Bholanuagaon, Tahasil – Ghasipura in district Keonjhar of Smt Sagarika Jena.
2. **Category:** The proposed project fall in B1 category under Schedule 1(a) Mining of Minerals as per EIA Notification 2006 and its Amendments thereafter.
3. **Legal Issues / Court case details** – A case was filed at the Hon'ble High Court vide case no - W.P(C) No. 34014/2022 filed by Sri Jayanta Kumar Mishra, Bhimasen Hasda, Sudhanshu Sekhar Nayak Vrs SEIAA, Odisha on illegal mining of Ostapura Stone Quarry of Bholanuagaon & Ostapura Cluster Stone Quarry the Hon'ble High Court had passed the judgement to consider the case infavour of petitioner and expedite the process of EC within a period of four weeks from date of production of certified copy of the order.
4. As per the decision of the court case the Regional Officer, Keonjhar has submitted the details of public hearing conducted for Ostapura-Bholanuagaon Cluster Stone Quarry on dated 11.10.2022 and following proceedings had been submitted to SEIAA, Odisha on dated 18.11.2022.
5. There is also submission of Enquiry Report regarding mining of Ostapura Stone Quarry of Bholanuagaon and Ostapura cluster stone quarry from Tahasildar, Ghasipura that the Ostapura Stone Quarry and Bholanuagaon stone quarry are two permanent minor mineral sources. Prior to implementation of amendment of OMMC Rule, 2016 these sources were put to auction regularly each year. Observing all formalities, these two sources have also been auctioned as long term lease for 5 years i.e. from 2020-21 to 2024-25 for Ostapura Stone Quarry and from 2022-23 to 2024-25 Bholanuagaon stone quarry. Operationalization of these sources are awaited for Environmental Clearance from SEIAA. As per report of R.I. it is revealed that the stone crusher at Ostapura is not functioning at present and no loss of property of the nearby inhabitants is noticed.

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6. Past Production details of Ostapura Stone Quarry and Previous EC compliance report has been submitted duly certified by Tahasildar, Ghasipura.
7. The Mining plan of Ostapura Stone Quarry has been approved for a period of five years by The Joint Director of Geology, Keonjhar. Vide letter no – 218/CZ, on dated 15.01.2021. This Mine Plan of Bholanuagaon stone quarry is approved vide letter No. 969 dated 19.05.2022 by the Joint Director Geology, Keonjhar.
8. The proposed cluster does not come under DLC land as certified by Tahasildar.
9. The District Survey Report for Road metal/Building Stone / Black Stone in respect of Keonjhar district has been prepared in accordance with Appendix – x, Para – 7 (iii) (a) of S.O. No – 3611(E) dated 25.07.2018 of MoEF & CC, New Delhi and approved by Collector, Keonjhar on dated 28.01.2020. The identified sairat sources is listed in Annexure – I, Sl. No.31 & 28 of DSR report.
10. **ToR details:** Terms of Reference (TORs) has been granted by SEIAA- Odisha vide the Reference No: 1522/SEIAA dated 17-06-2021.
11. **Public hearing details:** Issues raised during public hearing are measure for protection of house premises from blasting operation in mines, dust emission causing problem to school children, priority of employment to the unemployed youth of the villagers, overall development of villagers, supply of stone to the villagers at reasonable price, development of road, construction of Laxmi Temple; Mahaveer Temple and Mahadev temple, Rejuvenation of village ponds & Mahadev temple, for no cracks in the houses, compensation for land losers agriculture fields affected due to mines & damage building and help for widows & others. Budget for Public hearing issues is allocated is 23.5 lakhs.
12. **Location and connectivity:** The cluster is located in village Ostapura and Bholanuagaon over an extent 10.925 Ha under Ghasipura Tehsil in Keonjhar district, Odisha. The quarry Lease area, lies between Latitude of 21° 13' 35.9" N to 21° 13' 47.0" N and Longitude of 86° 04' 08.5 " E to 86° 04' 18.9" E bearing Khata no 169 plot no 905/1, Kisam Parbat-II(Ostapura) and Khata no 145 plot no 3/1, Kisam-Parbat-I (Bholanuagaon).The lease area is located in survey of India Topo Sheet No. F45/O4, the nearest village of the quarry lease area is panchugochina in 0.3Km towards North West, for the local transportation road for the quarry lease area is sailing road at 0.55Km towards south east, the quarry lease area is near to NH-20(Keonjhar-panikoila Road) at 2.30 km towards South east direction. Nearest road bridge and river embankment from Ostapura-Bholagaon cluster stone quarry is 5.5km and 6.2km respectively. Bhalugaon reserve forest is at 1Km from the project site.
13. **Baseline study:** Study Period for the baseline data was carried between Mar to May 2021 (Pre-monsoon Season); 10km radius around mine lease boundary.
 - a) **Ambient air quality:** The AAQ analysis indicates that the concentration of PM10 varied from 48 to 74 µg/m³, PM2.5 from 21 to 47 µg/m³, SO₂ from BDL to 10.4 µg/m³, NO_x from BDL to 18.8 µg/m³. Benzene, BaP, Ni, As, & Pb were found below detection limit.
 - b) **Surface water analysis:** Surface water pH values varied between 6.9 to 7.3 while Dissolved Solids varied from 116 to 134 mg/L, Dissolved oxygen varies from 5.0 to 6.2 mg/L, BOD varied from 1.8 to 2.8 mg/L and Chloride values varied between 65 to 78 mg/L. Iron values varied from 0.15 to 0.24 mg/L, Manganese values varied from 0.02 to 0.04 mg/L. Sulphate values varied from 12 to 22 mg/L and Nitrate values varied from 3.0 to 3.4 mg/L. Zinc 0.05 to

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0.12 mg/L. Copper BDL to 0.02. Fluoride, Arsenic, Lead, Chromium, Cyanide, Selenium, Fluoride, Phenolic compound and Cadmium have been observed below detection limit and Total Coliform varies from 942 to 1074 MPN/100 ml.

- c) Ground water analysis: pH values varied between 6.8 to 7.4 while Turbidity ranged from <1 to 2.0 NTU. Dissolved Solids varied between 96 to 118 mg/l and total hardness varied from 111 to 129 mg/l. Chloride values varied between 7 to 10.7 mg/l. Calcium values varied between 17.1 to 18 mg/l while Magnesium values varied between 9.6 to 10.7 mg/l, Sulphate values varied from 12.3 to 23.1 mg/l and Nitrate values varied from 2.2 to 3.6 mg/l. Zinc values varied from 0.05 to 0.12 mg/l & Boron from 0.12 to 0.21 mg/l. Lead, Copper, Manganese, Fluoride, Mercury, Cadmium, Cyanide, Arsenic, Selenium, Chromium, Phenolic compounds and Aluminium have been observed below detection limit.
- d) Soil Environment: It is evident from the results that the texture of soil within the study area is sandy silt to sandy loam. Soil of the study area is acidic in nature. The bulk density of soil samples varies from 1.44 to 1.58 gm/cm³; while porosity varies from 33 to 47%.
- e) Noise Environment: Noise level varies from 48.4 to 60.3 dB (A) during Day time and 38.3 to 48.1 dB (A) during Night time, which are below the prescribed limits of CPCB
14. **Total production and reserves-** As estimated, geological and mineable reserve of the Ostapura stone quarry is 11,88,054 cum and 787644 cum. Year wise production of road metal is 81853 cum (Total production in 5 years is 409265 cum). For Bholanugaon stone quarry, geological and mineable reserve 671145.3 cum and 339894 cum respectively. Year wise production of road metal is 28683 cum (Total production in 5 years is 143415 cum).
15. **Method of Mining:** Mining operations will be carried out by Semi-mechanized opencast mining method with drilling and blasting. Quarrying activities will be done following all the security majors. Rules and regulations of DGMS and IBM will be observed during the Quarrying operations to avoid unwanted circumstances. The topsoil will be used for greenbelt development and mine waste will be stacked separately, will be used as road building material. Wet drilling will be carried out & Blasting will be done on contract basis. Muffled blasting will be carried to reduce the ground vibration, fly rock etc. due to blasting. Conventional method of mining will be adopted in cluster area. In the present plan period it is proposed to shape the quarry with bench height and width of 5m and 5m respectively. The slope of individual bench will be maintained around 80° to 85° with ultimate pit slope of less than 45°.
16. **Water Requirement:** The total water requirement for the project estimated to be 10.0 KLD for mining, spraying, greenbelt development and domestic uses and will be sourced from the nearby available water source/accumulated rain water in mined out pits.
17. **Waste Generation and Disposal:** Total 1, 05,690 m³ of OB and 9095 m³ of waste will be generated in Ostapura Stone Quarry which will be dumped temporarily at the north-east corner part of the lease area. And it will be subsequently utilized for road construction and maintenance during the plan period. 15935 cum of waste and OB of 46855 cum will be generated in Bholanugaon Stone Quarry which will be dumped temporarily at the Southern part of the lease area.

18. **Greenbelt:** Total 270 no of native species will be planted in 2,430 m² area, during the plan period in Ostapura Stone Quarry. Total 230 no of native species will be planted in 1900/2070 m² area, during the plan period in Bholanuagaon Stone Quarry.
19. **Manpower requirement:** Considering the proposed maximum annual production over the Ostapura Stone quarry and Bholanuagaon Stone Quarry, total man power of 99 and 49 people will be required for the proposed project respectively.
20. **Project cost:** Estimated cost of the Ostapura & Bholanuagaon Stone Quarry is Rs.2, 00, 00,000/- Rs. 3.0 Lakh is incurred for implementing CSR activities.
21. **Environment Consultant:** The Environment consultant M/s EHS 360 Labs Pvt. Ltd., Chennai along with the proponent made a presentation on the proposal before the Committee.
22. The SEAC in its meeting held on 12-06-2023 decided to take the decision on the proposal after receipt of the following from the proponent. The proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
i)	Proceedings of the Court case and mention the status if the proponent has mentioned regarding it to SEIAA.	Proceeding of the court case and its status is attached as Annexure -1.	Letter submitted by SPCB RO, regarding the details of court case to SEIAA, enquiry reports by Tahasildar regarding the complaints received and court case has been submitted.
ii)	Documents of Bholanuagaon stone quarry like Previous EC letter, Previous EC compliance report and other relevant documents related to it.	Previous EC letters with its compliance reports has attached as Annexure -2.	Previous EC letters with its compliance reports submitted.
iii)	Previous Environmental Clearance along with its compliance report.	Previous Environmental Clearance and its compliance of Ostapura is attached as Annexure -3.	Previous EC letters with its compliance reports submitted.
iv)	Magazine and Blasting management w.r.t to flying rocks along with mitigation measures to be taken for it.	Magazine and Blasting management w.r.t to flying rocks along with mitigation measures is attached as Annexure -4.	Annexure -4 is attached.
v)	Dust management due to mining.	Dust generation due to mining activity and its management is attached as Annexure -5.	Annexure -5 is attached.
vi)	Detailed note on the usage of non-saleable/waste products with supporting documents.	Detailed note on the usage of non-saleable / waste products is attached as Annexure -6.	Annexure -6 is attached.
vii)	RL of ground water table.	RL of ground water table is at 50M.	-

Considering the information / documents furnished by the proponent and presentation made by the consultant M/s EHS 360 Labs Pvt. Ltd., Chennai on behalf of the proponent, the SEAC approved the EIA/EMP report in cluster approach and recommended the following:

- a) The SEIAA, Odisha may consider to grant Environmental Clearance to individual lease for Ostapura-Bholanuagaon Cluster stone quarries cluster without referring to SEAC with

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specific conditions as per Annexure – A after receipt of individual applications from the lessee in cluster along with following documents.

- i) Filled in form-I of individual lease
- ii) Prefeasibility report of individual lease
- iii) EMP of individual lease.
- iv) Approved Mining Plan of individual lease.
- v) Report on vibration study.
- vi) DLC status of the lease area from concerned DFO as certified by the concerned Tahasildar.
- vii) An Undertaking by the lessee not to use wagon drilling blasting to be submitted. Accordingly, specific condition to be stipulated in EC of individual lease.
- viii) No storage and usage of blasting materials/explosives inside the lease area without license/permission/authorization from competent Authority as per Indian Explosives Rules, 1983 shall be ensured by the lessee. An undertaking to this effect shall be submitted by the lessee. Accordingly, specific condition to be stipulated in EC of individual lease.
- ix) An undertaking to obtain NOC from CGWA and permission from WR department, Govt. Of Odisha for use of ground water. Accordingly, specific condition to be stipulated in EC of individual lease.
- x) The project proponent shall maintain periodic health check-up records of their employees and ensure use of face mask by workers in crushing and handling sections of the stone quarry for ensuring that working personnel are not affected by silicosis. Accordingly, specific condition to be stipulated in EC of individual lease.
- xi) The project proponent shall undertake re-grassing of the area or any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for fodder, flora, fauna etc. after ceasing mining operation that is at the time of mine closure. Accordingly, specific condition to be stipulated in EC of individual lease.
- xii) Detail risk and hazard management procedure as per the Annexure – B shall be followed by the lessee.

ITEM NO. 04

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR KUDUBADI PAHAD DECORATIVE STONE DEPOSIT OF M/S SGS MINES & INDUSTRIES PVT. LTD OVER AN AREA 38.077 HA IN VILLAGE KUDUBADI PAHAD UNDER DASPALLA TAHSIL IN NAYAGARH DISTRICT OF SRI GYAN MURTI SHAH - EC

1. This proposal is for Environmental Clearance of Kudubadi Pahad Decorative Stone Deposit of M/s SGS Mines & Industries Pvt. Ltd over an area 38.077 ha in village Kudubadi Pahad under Daspalla Tahsil in Nayagarh district of Sri Gyan Murti Shah.
2. **Category:** The proposed project as per EIA Notification dated 14th September 2006 and subsequent amendments, falls under Category "B", Project or Activity 1(a)-Mining of Minerals.

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3. The said area is to be granted as mining Lease for mining of decorative stone for thirty years with effect from the execution of the lease deed. The letters of intent for grant of mining lease is issued vide Letter No. 7437/SM-MC2-MC-0066-2021/S & M, Bhubaneswar, Dt.14.09.2021 in favour of M/s. SGS Mines & Industries Pvt. Ltd. Since the execution has not been done, the lease will be expired after a period of 30 years from the date of execution. The mining operation yet not started. This is a new mine. DFO, Nayagarh Division confirms that the said area is not coming under DLC forest.
4. The mining plan of the project has been approved under Mineral Concession Rule, 2016 and Granite Conservation & Development Rule, 1999 vide letter no – MXXII-(c)-8/2021/2047/DM on dated 07.03.2022 by Directorate of Mines, Bhubaneswar, Govt of Odisha.
5. The District Survey Report for additional sources of Morrums, Sand, Granite Stone and Laterite Stone of Nayagarh district has been prepared in accordance with Appendix – x, Para – 7 (iii) (a) of S.O. No – 3611(E) dated 25.07.2018 of MoEF & CC, New Delhi and approved by Collector, Nayagarh on dated 19.02.2020. Since the DSR was approved before the grant order, this mining lease is not shown in the DSR. However prospecting license was granted to M/s SGS Mines & Industries Limited, which was shown in last para of page – 2 of approved DSR.
6. The methodology for the risk assessment has been based on the specific risk assessment guidance issued by the Directorate General of Mine Safety (DGMS), Dhanbad, vide Circular No.13 of 2002, dated 31st December, 2002.
7. Although, 3 proposed Prospecting leases has been identified adjacent to the lease area, but only this deposit has obtained Lol. So, it is being applied as individual lease.
8. DFO, Nayagarh confirms that the applied ML area is not coming under ESZ of Mahanadi Wildlife Sanctuary vide letter no 7600 dated 28th November,2020.
9. **TOR details:** Terms of Reference (TORs) was prescribed by SEIAA, Odisha for this mining project vide Letter No. 5075/SEIAA on dated 02.08.2022.
10. **Public hearing details:** Public hearing has been conducted on 28.12.2022 at 11.00 AM at Daspalla Block Office Premises of Nayagarh district in accordance with the procedure of EIA Notification'2006. Issues raised during public hearing are local employment to stop migration of labourers, protection of environment and control of pollution (Air, Water and Noise), flora and fauna shall be conserved, endangered species like Pangolins shall be protected, respiratory diseases due to mining, maintenance of roads, water supply, protection of historical monuments like Bhatagada, Palli Sabha/ Grama Sabha not conducted before public hearing, local schools will be affected due to mining and other activities, traffic congestion due to movement of heavy loaded vehicles and damage of agricultural land due to transportation. Budget allocated for action plan on issues raised during public hearing includes capital cost of Rs. 7.86 lacs and recurring cost of Rs. 3.5 lacs.
11. **Location and connectivity:** The proposed mine is situated over an area of 38.077 ha in village- Kudubadi Pahad under Daspalla Tehsil, in the district of Nayagarh of Odisha State. The area is featured in Survey of India Toposheet No. F45S/11 (73D/11) and is bounded between Latitude: 20° 19' 26.60" to 20° 19' 48.30" N, Longitude: 84° 36' 33.50" to 84° 37' 30.00"E bearing Khata no 1- and Plot no- 1/P, 2/P, 3/P and 4/P. The proposed area is about 25 km from Daspalla. The Applied M.L area could be approach from Daspalla following Daspalla –Nayagarh NH Road,

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Kudubadi Pahad village at 9.0 km. NH-224. The proposed area is 125 km from the state capital Bhubaneswar. The nearest railway station is Nayagarh which is at 100 km from the Applied M.L. area. Nashagarh RF (0.55 Km, N); Central RF (5.0 Km, E); Chadhiapalli RF (4.0 Km, SE); Bori PF (8.0 Km, W) are present from the proposed site.

12. There are no National parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors; Tiger/Elephant reserves (existing as well as proposed) present within 10 km of the applied mine lease area. However, Mahanadi Wildlife Sanctuary is located 10.2 Km from the lease. A Joint verification has been carried out by the forest officials on 20.11.2020 regarding compatibility of site.
13. **Reserves and production:** The maximum production ROM will be 18750 cum/annum. As estimated, the total geological reserve is about 93, 63, 773.12 cum, out of which 47, 99, 184 cum have been considered as mineable reserves.

Year	Total volume of Rock	Volume Marketable (32%)	of Ore	Volume of Blocks (80%)	Non- Saleable Blocks (20%)	Volume of Waste (68%)
	(m ³)	(m ³)		(m ³)	(m ³)	(m ³)
1st Year	18750.00	6000.00		15000.00	3750.00	12750.00
2nd Year	18750.00	6000.00		15000.00	3750.00	12750.00
3rd Year	18750.00	6000.00		15000.00	3750.00	12750.00
4th Year	18750.00	6000.00		15000.00	3750.00	12750.00
5th Year	18750.00	6000.00		15000.00	3750.00	12750.00
Total	93750.00	30000.00		75000.00	18750.00	63750.00

14. **Mining method:** Open cast semi-mechanized method will be adopted using machineries such as excavator, line offset, compressor, jack hammer, wire ropes and drill rod etc. Bench parameter will be kept at 3m height and 3m width. Individual bench slope will be 90° whereas overall pit slope will be 45°.
15. **Mine development:** Weathered zone of 0.5 – 1.0m will be scraped from the top. Drilling will be carried out by using jack hammers driven by air compressor. Generally, excavation done in two phases. Both vertical & horizontal holes will be done to expedite wire saw cutter to detach the blocks from the mine face. Splitting of different size of blocks are done by using various cutting tools. Then sizing & shaping of the blocks will be done by using chisels, hammer to give final dimension.
16. **Baseline details:** Base line data has been generated during March'2022 to May'2022 (Summer Season).
- a) AAQ result- The Ambient Air Quality Monitoring reveals that out of eight monitoring stations the minimum and maximum concentrations of 98th percentile PM₁₀ were reported to be

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46.6 $\mu\text{g}/\text{m}^3$ and 88.0 $\mu\text{g}/\text{m}^3$ near lease area and at Banigochia respectively. Similarly, 98th percentile $\text{PM}_{2.5}$ was found minimum at lease area (28 $\mu\text{g}/\text{m}^3$) while the maximum at village Banigochia - 52.0 $\mu\text{g}/\text{m}^3$. 98th percentile SO_2 was found to be minimum 5.6 $\mu\text{g}/\text{m}^3$ at Baliapalli & maximum 16.7 $\mu\text{g}/\text{m}^3$ at Near village Banigochia. Minimum and maximum concentrations of 98th percentile NO_2 were found to be 10.5 $\mu\text{g}/\text{m}^3$ at Dhura & 24.1 $\mu\text{g}/\text{m}^3$ at near banigochia. Minimum and maximum concentrations of 98th percentile CO were found to be 0.14 mg/m^3 at lease area & 0.54 mg/m^3 at Near village Banigochia respectively.

- b) Ground water quality: pH values varied between 6.98 to 7.74, Dissolved Solids - 49 to 74 mg/l , Turbidity - 2.8 to 4.4 NTU., Total hardness - 89 to 117 mg/l . Chloride – 1.4 to 2.6 mg/l . Calcium – 16.5 to 23.1 mg/l , Magnesium – 4.8 to 6.1 mg/l . It is observed that all the samples are within the permissible limit of IS 10500: 2012.
- c) Surface water quality: pH values varied between 6.98 to 7.44, Turbidity – 5.2 to 7.2 NTU, BOD – 1.0 to 2.1 mg/l , Dissolved Solids –64.5 to 81.4 mg/L , Dissolved oxygen - 6.3 to 7.0 mg/L , Iron – 0.08 to 0.16 mg/L ., Chloride – 10.7 to 17.1 mg/l .
- d) Noise level study: Noise level varies from 42.5 to 61.0 dB (A) during Day time and 33.1 to 43.5 dB (A) during Night time, which are within the limit of regulatory norms of CPCB. All the noise levels monitored in the study area are well within Ambient Noise Standards for their respective land use category.
- e) Soil quality: Texture of soil within the study area is sandy loamy. Soil of the study area is slightly acidic in nature. The bulk density of soil samples varies from 1.32 to 1.6 gm/cm^3 : porosity varies from 14.5 to 25.1%. Silt varies from 18 to 21 %. Calcium varies from 1.2 to 2.0 mg/kg and Sulphate varies from – 0.18 to 0.42 mg/kg .

17. **Water requirement:** 10 KLD of water will be required, out of which 2 KLD for drinking purpose, 3 KLD for plantation and 5 KLD for dust suppression purpose. It is proposed to tap this quantity of water as per suitability. A sewerage system of septic tank followed by soak pit will be provided for the project area. Drinking water is made available from the tube wells of nearby village Kudubadi.

18. **Waste management:** Waste generated from this mine are weathered, Charnockite & schist. These waste rocks are removed from the quarry in the form of off-standard blocks. A total of 63, 750 Cum waste will be generated during plan period. 40% of the generated waste will be utilized for maintenance and construction of the haul road, approach and existing roads in the surrounding areas periodically. Remaining 38250 m^3 of waste will be temporarily dumped over 0.879 ha with a average height of 5m maintaining appropriate slope. However, the waste generated from the mines are not exactly waste. These are highly used for road construction & stone patching purposes and used by Stone artesian. So, later this waste will be supplied to local requestors. Retaining wall (164m x 1m x 1m) and garland drain (167m x 1m x 1m) will be constructed along with pit and dump. Settling tank will be constructed to arrest the wash-off water. During the cutting of decorative stone block, silt will be generated. Considering silt generation 0.0015 t/Cum, daily 100 Kg of silt will be generated. Since the waste generated from the mine is devoid of topsoil or laterite and the lease area is a completely exposed rock, the surface runoff from the lease area is devoid of silt.

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19. **Power/Fuel requirement:** The requirement of power is mainly for mineral transport, office lighting etc. Fuel (Diesel) would be used for operating equipments and heavy machinery and for office; electricity will be consumed from the nearby substation.
20. **Greenbelt:** A green belt is proposed along/inside the lease boundary to form a barrier mainly for dust flow control. About 2.310 ha will be developed for green belt development. Plantation will be carried out in undisturbed area also. During first five-year, safety zone area will be planted. About 760 trees (152 trees to be planted per year) will be planted. Species like Amla, Neem, Mango, Gamhari, Kasi, Bahada, Jamun, and Bamboo are proposed to be planted.

Year	Area to be planted (m ²)	No. of Saplings	Type of species to be Planted	Location
1 st Year	950	152	Amla, Neem, Mango, Gamhari, Kasi, Bahada, Jamun, and Bamboo	Along the Safety Zone
2 nd Year	950	152		
3 rd Year	950	152		
4 th Year	950	152		
5 th Year	950	152		
Total	4750	760		

21. **Plantation development:** As suggested DFO, Nayagarh, a Scheme for creation of fruit orchards has been prepared under the supervision of Sri B.N. Mohanty, Retd IFS to enrich wildlife habitat and availability of food wildlife animal. 450 fruit trees of 9 species as suggested, will be developed in six patches. Financial budget for the scheme of fruit orchard plantation is about Rs. 2, 36, 150.00/- as estimated, which may be spent in association with Forest department. This fruit orchard plantation is over and above, plantation suggested in mining plan, or any other plantation as suggested by the Committee.
22. **Manpower requirement:** The mining activity will generate employment for 20 numbers from which 17nos under skilled worker, unskilled worker & 3nos managerial staffs
23. **Project cost:** Estimated cost of the proposed project is 2.0 crores. CSR activities will be taken up in the nearby villages mainly contributing to education, health, training of women self-help groups and contribution to infrastructure etc., CER budget is allocated as 2.0% of the profit. Cost of Environment Management Plan (EMP) includes capital cost of 10.36 lakhs and recurring cost of 2.50 lakhs.

EMP Particulars	Capital Cost (Rs. in Lakhs)	Recurring Cost (Rs. Lakhs/Annum)
Dust Suppression (mobile haul road water Sprinkling system etc.)	3.0	1.0
OB Dump Management (like retaining wall, garland drains, check dams, settling ponds etc)	1.0	0.25

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EMP Particulars	Capital Cost (Rs. in Lakhs)	Recurring Cost (Rs. Lakhs/Annum)
Water & Waste water Management	1.0	0.25
Plantation/Green belt development	1.0	0.25
Environment Monitoring, Compliance Management, Safety etc.	2.0	0.75
Wildlife Safety measures	2.36	---
Total	10.36	2.50

CER - Category	Cost in Lakh/Annum
Provide drinking water facility in surrounding villages	0.5
Health Camp	1.0
Repair of Roads	0.5
Temple Development, Sports & Education	0.5
Total	2.5

24. **Environment Consultant:** The Environment consultant **M/s Srushti Seva Private Limited, Nagpur**, along with the proponent made a presentation on the proposal before the Committee.

25. The SEAC in its meeting held on **12-04-2023** deferred the proposal and recommended the following:

A. The proponent may be asked to submit the following for further processing of EC application:

- i) Submit the revised DSR within a week as the proposed resource is not an identified source in DSR. The proposal will be subjected to submission of revised DSR incorporating the identified source.
- ii) Certificate from concerned DFO Nayagarh and DFO Satakosia that there are no reserve forests in the proposed site as the KML file shows dense forest growth in the proposed lease area and also the distance of Tiger reserve from the site.
- iii) Detailed note on Wildlife Conservation Plan as the reserve forest is nearby.
- iv) Clarification from the concerned DFO about requirement of forest clearance as the lease area is full of dense forest growth.
- v) As observed in KML file, there is dense forest growth within 38Ha. of lease area. The Project proponent also has mentioned in presentation that the available mining reserve is limited to only 5 Ha. therefore, the Project Proponent may revise the mining lease area from 38 Ha. to 5Ha. for consideration of Environmental Clearance of the proposal.
- vi) List of flora and fauna present in proposed site duly certified by concerned DFO.
- vii) The Project Proponent may request to Steel and Mines dept. for trial excavations within lease area for rough estimation of presence of mineable reserve within the lease area, so that lease area can be reduced from 38ha. to 5Ha.

B. The proposed site shall be visited by Sub-Committee of SEAC to verify the followings

- i) Involvement of forest land in the lease area as KML file shows dense forest growth in the proposed lease area.
- ii) Environmental settings of the lease area.

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- iii) Mining activity, if any carried out in the lease area.
- iv) Road connectivity to the lease area.
- v) Any other issues including local issues.

26. The proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
i)	Submit the revised DSR within a week as the proposed resource is not an identified source in DSR. The proposal will be subjected to submission of revised DSR incorporating the identified source.	DSR of Nayagarh district was approved on 19.02.2020 before the Lol order; However prospecting license was granted to M/s. SGS Mines & Industries Limited, which was shown in last para of page -2 of approved DSR. Letter the PL is converted to ML. SO, it may be considered as identified source. And accordingly Lol is issued by Steel & Mines Dept., Govt of Odisha. And also, Nayagarh has already confirmed the source as identified source and sent the details to SEIAA, Odisha for inclusion in the revised DSR. ADM Nayagarh letter is attached as Annexure - 1.	Annexure - 1 is attached.
ii)	Certificate from concerned DFO Nayagarh and DFO Satakosia that there are no reserve forests in the proposed site as the KML file shows dense forest growth in the proposed lease area and also the distance of Tiger reserve from the site.	The total area of 38.077 ha is a Govt. waste land of Parvat - 1 kissam and not coming under any DLC. Land Scheduled duly certified by DFO, Nayagarh is attached as Annexure - 2. By order, two contiguous wild life sanctuaries, namely Satkosia Geroge Sanctuary & Baisipalli wildlife Sanctuary were notified as Satkosia Tiger Reserve. However Baisipalli Santuary not coming under the core zone of Satkosia TR. DFO, Nayagarh has already confirms the distance of Baisipalli wildlife sanctuary, which is more than 10.0 km from the lease area. The Notification on declaration of Tiger Reserve by MoEF & CC is attached as Annexure - 3. However, as per S.O. 2163 (E) on 09.05.2022, General condition shall not applicable to Minor mineral projects.	Annexure - 2 and Annexure - 3 is attached.
iii)	Detailed note on Wildlife Conservation Plan as the reserve forest is nearby.	In terms of Wildlife Conservation Plan, to comply DFO, Nayagarh Division, a scheme for creation of 6 nos., of fruit orchards has been prepared with estimated cost of about Rs. 2.36 lakhs, which may be spent in association with Forest department. The said Scheme is attached as Annexure - 4.	Complied
iv)	Clarification from the concerned DFO	DFO, Nayagarh already confirms that;	Complied.

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
	about requirement of forest clearance as the lease area is full of dense forest growth.	the lease area is a non forest land, So no Forest clearance is required. Ref. Annexure – 2.	
v)	As observed in KML file, there is dense forest growth within 38Ha. of lease area. The Project proponent also has mentioned in presentation that the available mining reserve is limited to only 5 Ha. therefore, the Project Proponent may revise the mining lease area from 38 Ha. to 5Ha. for consideration of Environmental Clearance of the proposal.	Since the exploration work has been done within 5 ha out of 38.077 ha, DFO, Nayagarh Division allowed to start the work restricted within the 5 ha. After entire exploration, further permit may be required. The mining plan has been prepared based on the already area over 5.0 ha and for the balance area, proposal for exploration is also given in the mining plan. Before submission of next review of Mining plan for approval as per the prevailing statute. Again, the KML file shows the image taken in the month of July in the Rainy season, resulting greenery in the entire area.	-
vi)	List of flora and fauna present in proposed site duly certified by concerned DFO.	Authenticated list of Flora & Fauna is attached as Annexure – 5.	Complied and as Annexure – 5 is attached.
vii)	The Project Proponent may request to Steel and Mines dept. for trial excavations within lease area for rough estimation of presence of mineable reserve within the lease area, so that lease area can be reduced from 38ha. to 5Ha.	During the prospecting license period 5.0 ha area explored and PL report submitted for grant of mining lease over 38.077 ha. LOI obtained for grant of 38.077 ha of ML area. After execution of mining lease, mining operation will start. While mine will be in operation entire area will be explored and during submission of next mining plan for further 5 years of mining operation entire area exploration detail with available resources will be provided.	-

After detailed discussion, the SEAC decided to take decision on the proposal after a site visit of the Sub-Committee of SEAC.

ITEM NO. 05

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR M/S. FERRO ALLOYS CORPORATION LTD OF EXPANSION IN CHROMITE ORE PRODUCTION FROM 0.24 MILLION PA (OPENCAST) TO 1.5 MILLION TPA (OPENCAST AND UNDERGROUND) WITH MAXIMUM EXCAVATION OF 2.5 MILLION TPA (OPENCAST AND UNDERGROUND) ALONG WITH INSTALLATION OF A NEW CRUSHER AND COB PLANT TO ENHANCE THE BENEFICIATED CHROME ORE FROM 0.1 MTPA (OPENCAST) TO 0.8 MTPA (OPENCAST AND UNDERGROUND) AND A BACKFILL PLANT IN OSTAPAL CHROMITE MINE (72.843 HA) AT VILLAGE GURUJANGA TEHSIL SUKINDA DISTRICT JAJPUR OF SRI SANDEEP KITTANA ACHARYA – TOR.

1. 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 amendment thereafter.

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2. This proposal is for Terms of Reference for Environmental Clearance of M/s. Ferro Alloys Corporation Ltd for Expansion in Chromite ore production from 0.24 Million PA (opencast) to 1.5 million TPA (Opencast and underground) with maximum excavation of 2.5 million TPA (Opencast and underground) along with installation of a new crusher and COB plant to enhance the beneficiated chrome ore from 0.1 MTPA (opencast) to 0.8 MTPA (Opencast and underground) and a Backfill plant in Ostapal Chromite Mine (72.843 ha) at Village Gurujanga Tehsil Sukinda District Jajpur of Sri Sandeep Kittana Acharya .
3. **Category:** As per EIA Notification dated 10th November 2006, as amended from time to time; the project falls under S. No.'1' (Mining of Minerals), Project or Activity '1(a) - (4)', and S. No.'2' (Mineral Beneficiation) Project or Activity '2(b) - (4)' Category "B".
4. **Mining lease status:** The mining lease over an area of 72.843 Ha, which comes under the part of Daitari Protected Forest and Village Gurujanga, was granted to M/s Ferro Alloys Corporation Limited ("FACOR") on 13/08/1985 for 20 years i.e., from 13/08/1985 to 12/08/2005. Mining lease deed was executed on 22.08.1985 and registered on 13.08.1985 in favor of M/s FERRO ALLOYS CORPORATION LIMITED ("FACOR"). The lease was expired on 12/08/2005, but it has continued to conduct the mining operations in the said lease under the deemed extension provisions of section 8 of the MMDRA, 1957 with Rule- 24-A (6) of the MCR, 1960 till 21/08/2016. As per the MMDR amendment Ordinance, 2015 under sec. 8A, the lease period has been deemed to be extended for a period of fifty years i.e., from 13/08/1985 to 12/08/2035. The supplementary Lease Deed has been executed on 22/08/2016. Thereafter, Hon'ble NCLT Cuttack Bench under the provisions of Insolvency and Bankruptcy Code (IBC)- 2016 vide its order dt. 30.01.2020, has approved the resolution plan of M/s Sterlite Power Transmission Limited (Vedanta Ltd.). Pursuant to the said order with of NCLT Cuttack, the Board of Directors of M/s. FERRO ALLOYS CORPORATION LTD. have been changed with effective from dt.21.09.2020. Consequently, the Board of Directors have appointed the nominated owner of the company vide its resolution dt. 27.09.2020, in accordance with the statutory provisions.
5. **Environment Clearance** has been obtained from MoEF&CC vide letter No J-11011/594/2008-IA.II (I) dated 31.10.2022. CTE for 0.24 million TPA chromite Production Capacity 5181/IND-II-CTE - 6642 dated 31.03.2022. CTO for 0.24 million TPA chromite Production Capacity and 0.1 million TPA Chrome Ore concentrate 11221/IND-I-CON- 1163 dated 28.06.2022 (Valid up to 31.03.2026)
6. CGWA NOC regarding the abstraction of ground water is obtained vide reference CGWA/NOC/MIN/REN/1/2021/6481; Validity: 02.08.2020 – 01.08.2022.
7. **Location:** M/s Ferro Alloys Corporation Limited proposing expansion in Ostapal Chromite Mine (ML Area -72.843 ha) for Chromite ore production (ROM) from 0.24 million TPA (opencast) to 1.5 million TPA (Opencast and underground) with maximum excavation of 2.5 million TPA (Opencast and underground) along with installation of a new crusher and COB plant to enhance the beneficiated chrome ore from 0.1 million TPA (opencast) to 0.8 million TPA (Opencast and underground) and a Backfill plant for backfilling of Underground mined out stopes at Village- Gurujanga, Tehsil-Kaliapani, District- Jajpur, Odisha bounded by Latitude: 21° 03' 26.60" N to 21° 04' 00.98" N and Longitude: 85° 47' 04.39"E to 85°47' 34.29" E in SOI Toposheet No. Core Zone -73G/16 and Buffer Zone -73G/16, 73G/12, 73H/9 & 73H/13. Nearest NH/ SH are Tomka - Mangalpur State Highway (~0.34 km in South Direction), NH- 200

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(~14 km in South East Direction) direction from mine site. The nearest railway station is Jajpur Railway Station (~55.0 km in SE direction) from the mine site. Nearest airport is Biju Patnaik International Airport, Bhubaneswar (~142 km in South direction).

8. Land- use details:

S. No.	Type of land use	At present -As on date (Ha)	At the end of Plan Period (Ha)	Conceptual Period-End of life of mine (Ha)
i)	Area under mining	30.67	34.54	34.54
ii)	Mineral Storage	1.56	1.29	1.29
iii)	OB/ Waste Dump	28.58	20.08	20.08
iv)	Tailing Pond	0.29	1.50	1.5
v)	Infrastructure (Workshop, Admin Building)	-	1.67	1.67
vi)	Road	0.95	2.06	2.06
vii)	Effluent treatment plant	0.44	0.44	0.44
viii)	Mineral separation plant	1.42	2.11	2.11
ix)	Greenbelt within 7.5m (Safety Zone)	4.07	4.07	4.07
x)	Others	4.863	5.083	5.083
	Total	72.843	72.843	72.843

9. Topography: The entire lease area is a flat terrain having a gentle slope of from South to North. The highest ground elevation in this area is lying in the Northern part of the lease area at an altitude of 158 m AMSL and the lowest relief in this area is 135 m AMSL lying in the Southern part. General ground level of the mining lease area is 146.5 m AMSL

10. Proposed Method of Mining: Sublevel method of underground mining is proposed. Mode of Entry will be declined. The selected mining method is predominantly Longitudinal Longhole Open Stopping (LHOS) with backfill. Vertical stoping method utilising long-hole drilling and blasting, stopes are unsupported; pillars are usually left between stopes and occasionally within stopes. Ore will be extracted from the stope via the lower extraction drift using remote-controlled loaders The LHD (Low profile Dumper) equipment will move the rock to a re-muck bay and re-handle the material into trucks. The trucks will move ore to surface via the decline. Mineral will be transported to existing (20 TPH) and proposed crusher (250 TPH) and existing (20 TPH) and proposed COB plant (250 TPH) by trucks/dumpers of 45 t capacity.

11. Water requirement: Existing water requirement for the project is 3400 KLD which will be 8500 KLD after expansion. Water is being/will be sourced underground seepage water & Mine sump water. Requirement of drinking water is met from the bore wells already installed in mining lease area.

12. Power requirement: Existing power requirement for this project is 0.55 MW which will be 10.0 MW after expansion. Power is being sourced from power grid.

S. No.	Particular	Requirement			Source
		Existing	Additional	Total	

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S. No.	Particular	Requirement			Source
		Existing	Additional	Total	
i)	Water Requirement (KLD)	3400	5100	8500	Mine sump water & Ground Water (2 nd renewal is under process)) (Till 7th year of this project water requirement will be within the existing permitted quantity 3400 KLD & on 12 th year it will be required 8500KLD)
ii)	Manpower Requirement (Nos)	657	54	714	Preference is being/ will be given to the locals as per their eligibility & availability
iii)	Power Requirement (MW)	0.55	10	10.55	State Grid Power Supply

13. **Green Belt:** Total area under greenbelt/plantation is estimated as 24.15 ha (Greenbelt on 4.07 ha +Plantation on 20.08 ha) which has been completed. Species planted in Green Belt and waste dump are Chakunda, Chhatian, Neem, Karanja, Krushnachuda, Sisama, Barakoli, Saguan, Panas, Amba, Pijudi/Pijuli, Bahada. Density of Trees will be @2500 trees/ha with the survival rate of 90%.
14. **Waste generation:** During plan period, 3 million tons of waste will be generated from opencast mining out of which will be dump is existing 2 no's of waste dump as well as backfilled over an area of 5.05 ha up to a depth of 30 m. During plan period of underground mining, 0.39 million tons of waste will be generated from underground mining which will be stacked in North dump. No waste generated at the conceptual stage through opencast mine and total of 2 million tons waste generated at the conceptual stage and it will be dumped in the waste dumps area.
15. **Employment generation:** The total man power for the project is 125 person. Unskilled /semi-skilled manpower is being/ will be sourced from the local area.
16. **Project cost:** Cost for Environment Protection Measures includes Capital Cost of Rs. 13.36 Crore and Recurring Cost of Rs. 0.87 Crore/annum. Total cost of the Project is Rs 600 Crore.
17. **Environment Consultant:** The Environment consultant M/s JM EnviroNet Pvt. Ltd, Gurugram along with the proponent made a presentation on the proposal before the Committee.
18. The SEAC in its meeting held on dated 12-06-2023 decided to take the decision on the proposal after receipt of the following from the proponent. The proponent has furnished the compliance and the SEAC verified the same as follows:

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC																																
i)	Technological features and safety aspects of underground mines and details of underground mining study report.	Detailed Geotechnical study for all safety aspect and various aspects of underground mines is conducted by ABGM South Africa ABGM. Geotech Report and feasibility report is enclosed as Annexure I and II.	Complied and Annexure I and II is attached.																																
ii)	Existing facilities for water balance, material balance and management of wastewater with Layout for existing production.	Existing Water balance along with waste water is enclosed as Annexure III as well as material balance is enclosed as Annexure IV.	Annexure III and Annexure IV is attached and complied.																																
iii)	Address hexavalent Chromium Pollution and management.	Hexavalent Chromium pollution, management and its mitigation plan is enclosed as Annexure No-V.	Complied and Annexure No-V is attached.																																
iv)	Details of other units that will be in the process of expansion particularly in reference to environmental parameters.	<p>Our proposal is for the expansion in granted production capacity in Chromite ore production from 0.24 million TPA (opencast) to 1.5 million TPA (Opencast and underground) with maximum excavation of 2.5 million TPA (Opencast and underground) along with installation of a new crusher and COB plant to enhance the beneficiated chrome ore from 0.1 MTPA to 0.8 MTPA and a backfill plant for backfilling of Underground mined stopes in Ostapal Chromite Mine (ML Area: 72.843 ha). Salient features for this proposal is find below:</p> <ul style="list-style-type: none"> ➤ There is no additional land requirement for the proposal. ➤ A new COB Plant crusher capacity 250 TPH will be established ➤ There will be no change in water requirement for coming 7 year. After the 7 year it will cross the current limit. ➤ Requirement of HEMMs is sufficient for the for the O/C and the underground mining various environmental friendly and advanced Machinery & Equipment will be required. List of the same is as below: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Equipment</th> <th>Make</th> <th>Capacity</th> <th>No of Equipment</th> </tr> </thead> <tbody> <tr> <td>Drill Jumbo</td> <td>EPIROC</td> <td>45 mm</td> <td>5</td> </tr> <tr> <td>Rock Drill</td> <td>EPIROC</td> <td>38 mm</td> <td>2</td> </tr> <tr> <td>Loader</td> <td>SANDVIK</td> <td>17 T</td> <td>4</td> </tr> <tr> <td>Production Drill</td> <td>SANDVIK</td> <td>89</td> <td>4</td> </tr> <tr> <td>LPDT</td> <td>SANDVIK/CAT</td> <td>30T – 65T</td> <td>12</td> </tr> <tr> <td>Explosive Carrier & Charging Unit</td> <td>NORMET</td> <td>1.4T</td> <td>2</td> </tr> <tr> <td>Spraymech</td> <td>NORMET</td> <td>-</td> <td>3</td> </tr> </tbody> </table>	Equipment	Make	Capacity	No of Equipment	Drill Jumbo	EPIROC	45 mm	5	Rock Drill	EPIROC	38 mm	2	Loader	SANDVIK	17 T	4	Production Drill	SANDVIK	89	4	LPDT	SANDVIK/CAT	30T – 65T	12	Explosive Carrier & Charging Unit	NORMET	1.4T	2	Spraymech	NORMET	-	3	Complied.
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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent				Views of SEAC
		Miller	NORMET	5 Cum	3	
		Cable bolter	SANDVIK	-	2	
		LMV's	ISUZU	-	8	
		Grader	CAT	-	1	
		Truck Store	SANDVIK/CAT	30 T	2	
		Diesel Browser	NORMET	2.5 KL	2	
		Water Tanker	NORMET	6 KL	1	
		Explosive Van	NORMET	2 T	2	
v)	Impact of expansion on peripheral soil environment and water environment in terms of quantity of hexavalent chromium to be present in soil, ground water and surface water.	<p>In a study for the reduction of hexavalent chromium pollution at the Ostapal Chromite Mine conducted by NIT Rourkela, Odhisa in the years 2021–2022, it was discovered that there was 3.094 mg/l of hexavalent chromium in mine tailing water and 0.616 mg/l in mine overburden soil.</p> <p>Colocasia esculenta stem biomass and Artocarpus heterophyllus seeds has been suggested by Odhisa from NIT Rourkela as being helpful in reducing hexavalent chromium, Annexure VI attached for the same. Note on Hexavalent Chromium Pollution & Management is enclosed as Annexure VI.</p> <p>Detailed study will be carried out for the expansion of the project. Report will be submitted at the time of appraisal.</p>				Complied.
vi)	Study report with respect to the suitability of material to be used for backfilling.	<p>Technical Study for the same is under process by the Golder Associates- Engg. Consultant to carry out the required study / activities for finalizing the backfill methodology and Associated Flow sheet etc. Offer letter and work order for the same is enclosed as Annexure VII.</p>				Technical Study is in process and work order is attached.
vii)	Feasibility of reduction of dependency on ground water by having adequate storage facility in underground/surface sumps.	<p>Ground water only is used for domestic purpose inside Mine & outside mine for community supply. Mine sump water (i.e seepage water & Rainwater accumulation) is being used for Industrial purposes like Ore Beneficiation, Dust suppression, wheel washing, vehicle maintenance & afforestation etc.</p> <p>Further, nos. of measures have been taken to reduce the dependency on ground water withdrawal by adopting Modern technology like installation of automatic water level meter and floating valve in all the water tanks, Rain water harvesting, Monitoring the water loss, adopting the recycle & reuse of the water along with management on behavioral changes, increasing of awareness among employees and setup of Water Conservation Programme etc.</p>				Complied and Annexure VIII is attached.

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
		Note on Feasibility of reduction of dependency on ground water by having adequate storage facility in underground/surface sumps is enclosed as Annexure VIII.	

Considering the information / documents furnished by the proponent and presentation made by the consultant M/s JM EnviroNet Pvt. Ltd, Gurugram, the SEAC prescribed the following specific ToRs in addition to standard ToRs as per Annexure – C for conducting detailed EIA study.

- i) Any updated or latest technology is used for treatment and management of hexavalent chromium in effluent or mines run off water, may be elaborated with mechanism and output characteristics. Any previous data if available to be provided also.
- ii) Complete material balance of the whole process occurring in Plant. Material Balance for existing and proposed, overburden waste, ETP and waste land.
- iii) Details of current production.
- iv) Latest EC compliance report and CTO Compliance report.
- v) Surface runoff management and details of treatment facility for surface runoff with analysis for Cr⁺⁶.
- vi) STP installation with design.
- vii) Detailed layout showing Damsala Nala from project site.
- viii) Details of Disaster Management for this mine.
- ix) Study report of Biodiversity of that area. Maintenance of Biodiversity register.
- x) Detailed proposal to adopt Zero Liquid Discharge (ZLD) concept.
- xi) Source of waste water. Details of Effluent Treatment Plant for treatment of waste water containing hexavalent chromium and the monitoring mechanism.
- xii) Mitigative measures to be taken for serious occupational health hazards due to hexavalent chromium - SOP of measures to be undertaken for employees.
- xiii) Analysis result of surface and ground water and soil within study area w.r.t. hexavalent chromium.
- xiv) How much quantity of water is recharged viz-a-viz norm of CGWA.
- xv) Design and capacity of Tailing Pond (existing and proposed) including SOP of disposal of tailings be submitted and similarly of ETP as well.
- xvi) Permission from the appropriate authority of "Damsala" Nala discharge treated waste water in to it be submitted including chemical analysis of the Said discharge water.
- xvii) How is the waste from underground treated and shown in the returns. Is that below the threshold grade of IBM and if so then the same has to be explained. Treatment also must be explained as per returns
- xviii) Change of land use from open cast to underground after the same was changed should be attached duly certified by MOEF&CC, Govt. of India.

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- xix) Details of crushing and screening plant if any operating in the mine with their permission status.
- xx) Details of the technology and process involved for beneficiation should be given.
- xxi) Management and disposal of tailings and closure plan of the tailing pond, if any after the project is over, should be detailed in a quantified manner.
- xxii) The water requirement for the COB Plant, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the project should also be indicated.
- xxiii) Cumulative impact study of Beneficiation Plant with suggested mitigation measures as per the study should be described.
- xxiv) Details of back filling plant should be described.

ITEM NO. 06

PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF M/S. SUSTAINABLE MINING SERVICES FOR NARAGAON DECORATIVE STONE MINE OVER AN AREA 7.21 ACRES OR 2.918 HA. IN VILLAGE NARAGAON UNDER KUNDRA TAHASIL OF KORAPUT DISTRICT OF SRI ASHOK MOHAPATRA - EC

1. This proposal for Environmental Clearance of M/s. Sustainable Mining Services for Naragaon Decorative Stone Mine over an area 7.21 acres or 2.918 ha. in village Naragaon under Kundra Tahasil of Koraput district of Sri Ashok Mohapatra.
2. **Category:** As per EIA notification 2006 and subsequent amendments, the proposed project is coming under B2 category and activity 1 (a) - Mining of Minerals.
3. The Mining Plan with Progressive Mine Closure Plan has been approved by Additional Director of Mines, O/o-Directorate of Mines, Odisha, Bhubaneswar vide letter no. MXXII-(b) 05/2022-5018 dated 09.06.2022.
4. Letter of Intent has been issued by Steel and Mines department vide letter no 1313 /SM-MC3-MC-0009-2021 S & M, Bhubaneswar dated 15.02.2022.
5. As per District Survey Report, Koraput (Under Ministry of Environment, Forest & Climate Change, New Delhi, Notification Date 15-01-2016.) Naragaon Decorative Stone Mines is listed in Sl.No.23 in the Mineral Concession list page no. 58.
6. The proposed land does not come under DLC and there are no mines within 500 metres of the project site as certified by Tahasildar, Kundra.
7. **Location and connectivity:** The granted M.L. area for decorative stone over 7.21 acres or 2.918 hectares is covered in the Survey of India Toposheet No. E 44 K5, and bounded by latitude N 18053'49.05" to N 18053'57.68" & Longitude E 82°23'53.11" to E 82°23'58.23". The land use pattern of the mining lease area comes under the non forest agricultural land (Abada Ajogya Anabadi), bearing Khata no: 200, Plot no: 837/P. The applied Mining lease area over 7.21 acres or 2.918 hectares in village Naragaon, Under Kundra Tahasil of Koraput district, Odisha. M/s. Sustainable Mining Services for a period of 30 (thirty) years. Nearest railway stations is Khadapa Railway Station at an aerial distance of 12 Km. The lease area can be approached from SH:48 & NH:26 at a distance of 22 Km & 17 Km respectively. Nearest Airport is Bhubaneswar Airport

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- which is at a distance of 388 Km. Nearest reserve forest is Judanga reserve forest which is 6km away from the project site.
8. **Topography:** The M.L. area under reference represents a hilly terrain with a small hillock. The highest and lowest elevations of the area are 624 mRL in the Northwestern part and 605 mRL in the Southeastern part of the M.L area respectively. Overall slope of the area is due South-east. There is no forest land in the M.L. area. The entire area falls in waste land under the revenue class of "Parbat" of Abada Ajogya Anabadi category.
 9. **Life of mine:** Considering the production of Granite Gneiss @ 300Cum (Average) per annum, then the life of the mine will be = $20034.900/300=66.80$ years.
 10. **Total production and reserves:** The proposed quarry will be developed to produce 302 m³ of decorative stone (Saleable) in the first year to fifth year of the current plan period. However, the proposed rate of production will be 5258m³ of saleable decorative stone after the quarry is fully developed. As estimated, the geological reserves is 262500cum. Out of which the recoverable decorative stone @ 11.3% (cum) is 29662.500cum and mineable reserves is 177300cum. Out of which the recoverable decorative stone @ 19% (cum) is 20034.900cum.
 11. **Mining method:** It has been proposed that the mining will be carried out in a systematic, scientific and sustainable manner by adopting semi mechanized open cast method of mining by exposed the spreading sheet. The mode of working will be Semi Mechanised, loading, hauling & transportations are the various mining operations those will be practiced in the Naragaon Decorative Mines. After drilling and blasting, excavation will be done mechanically by excavators & dumpers with the help of the common equipment like hand shovel, crowbar, hammer, pick axe etc. Loading will be done through the excavators by the help of dumpers. Breaking & sizing is done by hammering & Wire saw etc. Crowbars, Pickaxe, hammer etc. will be used for breaking of the ore. The height of the bench of the quarry will be kept 3m and width will be 3m wide or more than the height. Excavation work and loading will be carried out by mechanised means. Granite which that is to be excavated, will be stacked in the ore stack yard manually by head load. Waste materials will be transported to the proposed dumping site by tipper. The individual slope of benches will be 90° whereas the overall slope of the proposed quarry would be kept 45°. The gradient of the haul road will be maintained at 1:16 with more width than other benches for easy mobilization of workmen.
 12. The ultimate extent and size of the quarry will be 120m ×100m. Ultimate pit slope at the time of closure of mine will be around 45°. The ultimate pit will be reclaimed by means of back filling. Back filling will be done over an area of 0.729 hectares up-to 584 mRL and remaining dead benches will be fenced with barbed wire from safety point of view.
 13. **Waste Generation and Management:** During the proposed plan period a total of 9078 m³ of waste will generate due to course of mining. However about 40% of the generated waste will be utilized for maintenance and construction of the haul road, approach and existing roads in the surrounding areas periodically. Therefore, a total of 3631.200 m³ of waste will be utilized for construction and maintenance of roads and remaining waste will be dumped in the earmarked site over 0.141 Ha. During plan period, retaining wall and garland drain will be constructed for the proposed dump. In the 1st year programme, Construction of retaining wall of 100 m & garland drain of 105m will construct all around the waste dump.

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14. **Water requirement:** Total water requirement for the project will be 5 KLD out of which 2 KLD will be required for drinking and domestic purpose and 1.5 KLD for dust suppression and 1.5 KLD for plantation purpose. Water will be sourced from the nearby villages through tanker.

15. **Power Requirement:** No electricity connection within ML area. However solar lights will be employed for day to day living purposes. Diesel requirement of 6000litters/month for operation of mining equipment and DG sets.

16. **Greenbelt:**

Year	Area (m ²)	No. of saplings	Type of species	Location
1 st Year	200.00	40	Amla, Neem, Mango, Gamhari, Kasi, Bahada, Jamun, and Bamboo	Along the M.L. Boundary
2 nd Year	200.00	40		
3 rd Year	200.00	40		
4 th Year	200.00	40		
5 th Year	200.00	40		
Total	1000.00	200		

17. **Manpower:** A rough estimate reveals that a total of 22 nos. of administrative, technical persons, supervisory staffs, skilled and un-skilled workmen to carry out the mining and allied activities.

Sl. No	Description	No. of Persons
Administrative Staffs		
i)	Mines Manager (1st/2nd class certificate of Competency)	1
ii)	Geologist (Part Time)	1
iii)	Surveyor (Competency – Part Time)	1
iv)	Mechanical Engineer (Part Time)	1
Skilled Employees		
i)	Mining Mate	1
ii)	Quarry supervisor	1
iii)	Compressor Operator	1
iv)	Excavator Operator	1
v)	Jack Hammer Operator	2
vi)	LMV Driver	1
vii)	Water Tanker Operators	1
viii)	Tipper Operators	2
ix)	Excavator Helper	1
x)	Jack hammer helper	2
Semi-skilled Employees		
i)	Watchman	2
ii)	Office staff	2
iii)	Office Peon	1
	Total	22

18. **Project cost:** The approximate cost of the project comes around 200 lakhs. CSR budget of plan proposed for the project.

Table: Details of CSR Activities & Its Budget

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Activities	Cost (Inr)	Village
Construction and Maintenance of approach road the mines (1.5 Km)	6,00,000.00	Naragaon
Maintenance of School building and furniture	1,00,000 per annum	Naragaon
Employment generation for the local people	--	Nearby villages
Free health checkup camp in Naragaon Village (Quarterly once) for 22 people	1,00,000 per annum	Naragaon,
Plantation along the road side of the approach road (250saplings)	60,000.00 per annum	Approach road ton Naragaon village and mines

Table: EMP Capital cost

Sl. No.	Particulars	Capital cost Lakh
I.	Pollution Control	
a)	Water Tanker	5.00
b)	Garland drains & retaining walls around the dump (m)	3.00
	Sub Total	8.00
II.	Occupational Health	
a)	Safety equipment	1.0
b)	Occupational health check up	1.0
	Sub Total	2.0
III.	Green Belt	1.0
IV.	Miscellaneous	0.5
	Grand Total	11.50

Table: EMP Recurring cost

Sl. No.	Particulars	Total cost (Lakh)
I.	Pollution Control	
i)	Regular Water sprinkling in the dust prone areas	3.60
ii)	Maintenance of garland drain, settling tank & retaining wall	1.0
	Sub Total	4.6
II.	Pollution Monitoring	
i)	Air pollution Monitoring	3.0
ii)	Water Pollution Monitoring	0.5
iii)	Noise monitoring	0.2
	Sub Total	3.7

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Sl. No.	Particulars	Total cost (Lakh)
III.	Occupational Health	
i)	PPEs for workers	1.0
ii)	Regular health check ups	0.5
	Sub Total	1.5
IV.	Green Belt	0.5
V.	Others (Expert Advice Etc.)	0.5
	Total	9.80

19. **Environment Consultant:** The Environment consultant M/s EHS360 Labs Private Limited, Chennai - 68 along with the proponent made a presentation on the proposal before the Committee on 03.05.2023.

20. The SEAC in its meeting held on 03-05-2023 decided to take the decision on the proposal after receipt of the following from the proponent. The proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
i)	Details of silt management be submitted.	<p>During mining operation Diamond wire saw will be used cutting of granite blocks & finished at mine faces and similarly in the granite blocks shifted / transported from one location to other silts / dusts will be generated and in waste dump area silts are to be generated. To prevent silts necessary measures are be taken to manage silts/solid waste particles at mine pit heads so that there should not any silts / solid waste particle causes water pollution. Hence the surface run-off may contain silts / solid waste from mining operation & transportation activities:</p> <p>Following Measures shall be carried out for management of silt:</p> <ul style="list-style-type: none"> • Comply with any requirements in silt management plan about managing silt / solids at site. • Settling tanks/Pits and Garland drains, Check weirs shall be constructed at strategic area inside mining pits, so that contaminated run-off are prevented and clean water will be allowed from mining pits. • Minimize the amount of ground you expose and stocking of granite blocks use at mine site. • Development of plant vegetation at strategic area • Use of retaining fences to prevent solids from being washed off or blown away. • Vegetation shall not be removed until we need to work in that area. • Diversion of clean water and prevent water 	Complied

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
		<p>from entering the excavations area by using cut off ditches around working area.</p> <ul style="list-style-type: none"> • Construction of settlement ponds, tanks or lagoons to collect run-off from the site and let suspended silt / solids settle so we can remove them from the water. • Settling pond shall be designed carefully so it can take the amount of water that will flow through it can stop discharges from the settling pond if the water becomes contaminated. • if anytime we find any water pollution, we will use polyelectrolytes or alum for treatment of same. • Treatment also will be done to water entering the settlement pond if it is contaminated by pollutants other than suspended solids. • Use sustainable drainage systems grass swales, ponds or infiltration trenches shall be used to control surface water run-off at site, run-off close to the source by slowing and holding back the run-off from your site and allowing natural processes to break down pollutants such as grass swales, ponds or infiltration trenches. SuDS deal with run-off close to the source by slowing and holding back the run-off from your site and allowing natural processes to break down pollutants • Collection of run-off from your roads by using ditches and build bridges to cross water courses if required. • Cleaning of site roads regularly and keep them free from dust and mud. • Designated vehicle shall be used in washing areas and collect contaminated water in a sump. • If required we will build any flood attenuation ponds and spillways upstream of the site to prevent settlement ponds from overflowing and causing pollution after heavy rain. 	
ii)	Usage of surface run-off water and its management and find the possibility of SRTS installation if required.	<p>Surface Runoff water shall be collected at the settling pits and will be used for mining activities like dust suppression, plantation etc.</p> <p>Drainage system shall be designed in proper way so that runoff generated will be channelized to the settling pit.</p> <ul style="list-style-type: none"> • Surface runoff water harvesting is the collection, accumulation, treatment or purification, and storing of storm water for its eventual reuse. • All the mine sumps, garland drains, sedimentation ponds to be created on the 	Complied

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		<p>surface should be de-silted before monsoon</p> <ul style="list-style-type: none"> • In order to avoid accidental entry of any person or cattle into the sedimentation ponds, proper fencing shall be carried out around it. • The surface water shall be monitored for the parameters like pH, total suspended solids, chemical oxygen demand, oil and grease, and treatment shall be done if required. • Provision of catch drain may be made around the material stock area in order to protect the interaction of natural surface runoff with that of the material stock. This will reduce the siltation of fine material particles into the surrounding area <p>There will be no requirement of SRTS as the runoff generation is insignificant.</p>	
iii)	<p>Details of road connectivity layout and permission to be taken from the appropriate authority/private land owners for 50 meters road connectivity from proposed quarry site to nearest public road for transportation of minerals.</p>	<p>The mining lease area can be approached from SH:48 & NH:26 at a distance of 22Kms & 17 Kms respectively. The Lease area is well connected to the NH and SH through RD/PWD/ Panchayat / Village road. (Copy of layout is enclosed) Public road of 50 meter shall be used for transportation, necessary permission has been obtained from the concerned authority vide his letter no. 2024/2023 dated 14/07/2023.(Copy attached as Annexure-1)</p>	<p>Complied and permission copy is attached.</p>
iv)	<p>Detailed note on quantity of waste generation, storage, utilization and its management.</p>	<p>Total mineable quantity in the M.L. area = 21006.700 m³ Total ROM excavated during the proposed Plan period = 13650 m³ Generation of waste @ 79 % = 12008.00 m³ Utilization of waste @ 40% for road & maintenance= 5460 m³ Remaining waste for dump = 8190 m³</p> <p>The generated waste will be periodically dumped over the proposed dump for the plan period an additional area of 0.141 ha with an average height of 1.5 m having 5 terraces. However the generated waste will be back filled from the southern end of the conceptual boundary after reaching the ultimate pit limit. It has been computed that the waste generated during the conceptual period will be back filled. During conceptual period the waste generated will be completely utilized for road construction and for other construction purpose.</p> <p>There will be temporary storage of waste over an area of 0.701 Ha which will consequently utilized for construction purpose.</p> <ul style="list-style-type: none"> • The dump will have inward slope with catch 	<p>Complied.</p>

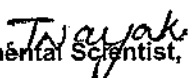
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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC																	
		<p>drains at inward side of the terrace and the catch drain of the individual terrace will be connected to the garland drain outside the periphery of the dump.</p> <ul style="list-style-type: none"> Retaining wall and garland drain will be constructed around the dumps and the surface runoff water pass through the garland drain and finally settled in a settling pit before released outside. Retaining wall and garland drains for the proposed waste dump will be constructed to arrest wash offs from the dump. <p>Materials other than marketable Granite Gneiss rock recovered by way of mining will be treated as waste. As discussed above Granite Gneiss deposits of the applied area are associated with weathered Granite Gneiss and cracks constitute in the main waste materials. Those materials which are removed and get the marketable blocks and tiles are considered as intercalated waste and those are removed & dumped directly (Weathered Granite Gneiss) are considered as waste. 11.3 % of the ROM with associated ferruginous minerals rejects will be treated as waste. The volumes of total waste likely to be generated during the proposed plan period are as below;</p> <table border="1" data-bbox="643 1173 1129 1429"> <thead> <tr> <th>Year</th> <th>Volume of Waste (m3)</th> </tr> </thead> <tbody> <tr> <td>1st Year</td> <td>1382.50</td> </tr> <tr> <td>2nd Year</td> <td>1896.00</td> </tr> <tr> <td>3rd Year</td> <td>2567.50</td> </tr> <tr> <td>4th Year</td> <td>2567.50</td> </tr> <tr> <td>5th Year</td> <td>3594.50</td> </tr> <tr> <td>Total</td> <td>12008.00</td> </tr> </tbody> </table> <p>Maximum Height and Spread of Dumps However about 40% of the generated waste will be utilized for maintenance and construction of the haul road, approach and existing roads in the surrounding areas periodically. Therefore a total of 5460 m3 of waste will be utilized for construction and maintenance of roads and remaining 8190 m3of waste will be dumped in the proposed temporary waste dump (Refer Plate No-VII).The details of the area covered and height of the proposed dump is given below;</p> <p>Maximum Height and Spread of Dumps</p> <table border="1" data-bbox="643 1854 1137 1944"> <tr> <td>Total intercalated waste from proposed Granite</td> <td>=</td> <td>12008 M³</td> </tr> </table>	Year	Volume of Waste (m3)	1 st Year	1382.50	2 nd Year	1896.00	3 rd Year	2567.50	4 th Year	2567.50	5 th Year	3594.50	Total	12008.00	Total intercalated waste from proposed Granite	=	12008 M ³	
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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC																								
		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">during 5 years of plan period</td> <td style="width: 5%;"></td> <td style="width: 5%;"></td> <td style="width: 30%;"></td> </tr> <tr> <td>Construction and Maintenance of Road @ 40%</td> <td>=</td> <td></td> <td>5460 M³</td> </tr> <tr> <td>Remaining waste for dumping</td> <td>=</td> <td></td> <td>8190 M³</td> </tr> <tr> <td>Quantity due to maintain for slope of the dump@15%</td> <td>=</td> <td></td> <td>1228.50 M³</td> </tr> <tr> <td>Average height of the proposed dump</td> <td>=</td> <td></td> <td>1.5 M</td> </tr> <tr> <td>Surface area required</td> <td>=</td> <td></td> <td>1174 M²</td> </tr> </table> <p><u>Precautionary measures to be adopted during waste disposal</u> There will five terraces in proposed temporary waste dump and height of terrace will be 1.5 m. <u>The following measures will be undertaken to stabilize the dump and the rest of wash off:</u></p> <ul style="list-style-type: none"> ➤ Terracing at the dead end and as the dump constitutes of rocky mass, no plantation of saplings on the dump slope is envisaged. ➤ During plan period, retaining wall and garland drain will be constructed for the proposed dump. In the 1st year programme, Construction of retaining wall of 100 m& garland drain of 105m will construct all around the waste dump. ➤ One settling tank will be constructed to arrest the wash-off water. 	during 5 years of plan period				Construction and Maintenance of Road @ 40%	=		5460 M ³	Remaining waste for dumping	=		8190 M ³	Quantity due to maintain for slope of the dump@15%	=		1228.50 M ³	Average height of the proposed dump	=		1.5 M	Surface area required	=		1174 M ²	
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v)	Layout map showing the mining area, waste dump, settling area and waste backfilled in the area and balance storage.	The details of layout map showing the mining area, waste dump, settling area and waste backfilled in the area and balance storage have been earmarked in the Surface Plan and 5 Years Development Plan of the approved Mining Plan are attached in Annexure-2 . The details are discussed in point no IV.	Complied and layout map is attached.																								
vi)	Management plan for water and dust.	<u>Water Management Plan:</u> <ul style="list-style-type: none"> • The surrounding area is covered with network of small seasonal nalas, which carry water during rainy days only. Drainage pattern is dendritic. Quality of water in seasonal nalas has been found to be muddy during rainy season. There will be no waste water generation due to mining of decorative stone. Only waste water generation will be 	Complied																								

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
		<p>sanitary waste water which will be treated in soak pit via septic tank. The impact of mine drainage water on the surrounding water environment and the proposed mitigation measure has been given below.</p> <ul style="list-style-type: none"> • The ground water level in the surrounding plain land is noticed to be 6-8m below the surface level. The RL of water table is around 200m. As the quarrying activity proposed to be taken up at a much higher level at 140 mRL, there will be no water logging in the quarry due to subsurface water. As per proposed mining operation there is no generation of water or any process water is used, water pollution will be negligible. • Moreover, surface run-off water during rains is likely to be less contaminated as the same will not contain any dissolved pollutant generated from the mines and the suspended solids will also not be noticeably added to the same from the workings or stacks. • The Surface run-off water of the M.L area flows along the natural slopes. Retaining wall and garland drain will be constructed around the dumps and the surface run off water pass through the garland drain and finally settled in a settling pit before released outside. • During the rainy season Quarry water will be channelized through peripheral drain and settling tank to release clean water. There is no river/nala flowing within the lease hold area. • The groundwater table is below 6-8m below the surface level depending upon seasonal variation. However in the surrounding areas, water courses remain dry throughout except during rainy season. It is a fact that no constituent of the waste water state either goes into solution in the surface run off or carried as suspended particulate matter in the same. Therefore, contamination of water bodies due to mining of decorative stone does not arise and as such no treatment of waste water is required before its discharge into natural water course. • A boundary wall with garland drain will be constructed towards the south of the lease area to retain the mine drainage water and prevent mixing up the mines water with the 	

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC									
		<p>canal.</p> <ul style="list-style-type: none"> The rain water harvesting structure created in the lease area supplement the water requirement dust suppression and plantation will met from the rainwater harvesting structure. There is no proposal for use of water in the process of mining. Water required only for dust suppression, plantation and drinking purpose. During monsoon period surface runoff around the quarry and dump near the natural drains will follow the garland drains to arrest the eroded sediments, which shall pass through a series of garland drains before being discharged to the natural drainage system. From the analysis of waste material from the lease area it has been found that there is no contamination due to the dumping of waste material <p>Dust Management Plan:</p> <p>During mining operation Diamond wire saw will be used for cutting of granite blocks & finished at mine faces, hence very less quantities of dust will be generated and similarly in the granite blocks shifted / transported from one location to other silts / dusts will be generated. The impact of decorative stone mines have very less impact on air environment and proper mitigate measures will be adopted to reduce the impact of the mines on environment. Following table describes the potential sources of air pollutant emission and the proposed control measures for air pollution.</p> <p>Sources of Air pollution and Mitigation Measures</p> <table border="1" data-bbox="643 1344 1217 1794"> <thead> <tr> <th>Potential sources</th> <th>Magnitude of air pollution</th> <th>Control measures of air pollution</th> </tr> </thead> <tbody> <tr> <td>Cutting & Sizing</td> <td>Dust generation</td> <td>Water will be added in diamond wire saw at time of cutting so that no dust will be generated</td> </tr> <tr> <td>Loading of material</td> <td>Air emission</td> <td>Water sprinkling on mineral ore/overburden</td> </tr> </tbody> </table>	Potential sources	Magnitude of air pollution	Control measures of air pollution	Cutting & Sizing	Dust generation	Water will be added in diamond wire saw at time of cutting so that no dust will be generated	Loading of material	Air emission	Water sprinkling on mineral ore/overburden	
Potential sources	Magnitude of air pollution	Control measures of air pollution										
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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent			Views of SEAC
				Material prior to loading. Overloading will be avoided in the trucks	
		Transportation	High dust	Provision for automatic water sprinkle system On permanent road and water spray by tankers on temporary road. Covering of the material with turpentine in case of long haulage Green belt of trees with good footage on both side of haul road. Provision of water sprinkling on the dumper to arrest fine dust t before it is transported. 1no.of water tanker with 8000 liter capacity will be procured and used for water sprinkling twice in a day in haul roads , dumping site, loading and unloading site etc.	
		Storage of Sized & Finished granite Block	High dust potential	Water sprinkling arrangement will be done, Development to greenbelt to	

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent			Views of SEAC
		Air pollution Monitoring	Monitoring of air pollution	arrest the dust generation Ambient air pollution monitoring will be Carried out as per the Environment clearance letter issued by SEIAA, Odisha.	
vii)	As per the KML file, dense vegetation is seen within the proposed site. Therefore, details of procedure to be followed for tree felling or transplantation of those trees within safety zone. Provision for compensatory afforestation must be done by equal number of plantation under consultation with forest deptt.				Complied. DFO Permission Copy is attached. Special condition to be stipulated that provision for compensatory afforestation must be done by equal number of plantation under consultation with Forest Deptt.
viii)	Certificate from the concerned mining officer that no other mines located within 500 meter from the periphery of the lease boundary.	The Mining Officer, Koraput Circle, Koraput, Odisha has been certified that no other mines located within 500 meters from the periphery of the lease boundary. The copy of signed check list is attached as Annexure-3 (Please refer point no. 18 & 23).			Complied and No other mines certificate is attached.
ix)	As per the provisions stipulated in OM F.No.22-34/2018-IA.III dated 16th January 2020, MOEFCC, Government of India for the stone mining projects, the mining lease holder to undertake re-grassing of the area or any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for fodder, flora, fauna etc. after ceasing mining operation that is at the time of mine closure.	As per the provisions stipulated in OM F. No. 22-34/2018-IA.III dated 16th January 2020, MOEFCC, Government of India, we are undertaking that re-grassing of the area or any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for fodder, flora, fauna etc. after ceasing mining operation that is at the time of mine closure. Undertaking of the same attached as Annexure-4.			Complied and undertaking of the same is attached.

Considering the information furnished and the presentation made by the consultant, M/s EHS360 Labs Private Limited, Chennai - 68 along with the project proponent, the SEAC recommended for grant of Environmental Clearance upto lease period with stipulated conditions as per Annexure – A and following additional conditions;

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- i) Haulage road shall be developed and maintained perennially and perpetually by the proponent in consultation with the concerned authority of the Govt.
- ii) The project proponent shall maintain periodic health check-up records of their employees and ensure use of face mask by workers in crushing and handling sections of the decorative stone quarry for ensuring that working personnel are not affected by silicosis.
- iii) The project proponent shall follow proper procedure as advised by Forest Deptt. for tree felling or transplantation of those trees within safety zone. Provision for compensatory afforestation must be done by equal number of plantations in consultation with Forest Deptt.
- iv) The project proponent shall undertake re-grassing of the area or any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for fodder, flora, fauna etc. after ceasing mining operation that is at the time of mine closure.
- v) Detail risk and hazard management procedure as per the Annexure – B shall be followed by the lessee.

ITEM NO. 07

PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF M/S. SUSTAINABLE MINING SERVICES FOR NARAGAON DECORATIVE STONE MINE OVER AN AREA 9.35 ACRES OR 3.785 HA. IN VILLAGE NARAGAON UNDER KUNDRA TAHASIL OF KORAPUT DISTRICT OF SRI ASHOK MOHAPATRA - EC

1. This proposal is for Environmental Clearance of M/s. Sustainable Mining Services for Naragaon Decorative Stone Mine over an area 9.35 acres or 3.785 ha. in village Naragaon under Kundra Tahasil of Koraput district of Sri Ashok Mohapatra.
2. **Category:** This project falls under Category "B2" under Schedule of Item 1(a) - Mining of Minerals as per the EIA Notification, 2006 and its amendments thereof.
3. The applied Mining lease area over 9.35 acres or 3.785 hectares in village Naragaon, under Kundra Tahasil of Koraput district, Odisha. M/s. Sustainable Mining Services for a period of 30 (twenty) years. The tenure of the lease period is scheduled to expire on 08.06.2052.
4. The Mining Plan with Progressive Mine Closure Plan has been approved by Additional Director of Mines, O/o-Directorate of Mines, Odisha, Bhubaneswar vide letter no. MXXII-(b)04/2022-5025 dated 09.06.2022.
5. Letter of Intent has been issued by Steel and Mines department vide letter no 1309 /SM-MC3-MC-0009-2021 S & M Bhubaneswar, dated 15.02.2022.
6. **Location and connectivity:** The land use pattern of the mining lease area comes under the non-forest agricultural land (Abada Ajogya Anabadi), bearing Khata no: 200, Plot no 989/P . The applied Mining lease area over 9.35 acres or 3.785 hectares in village Naragaon, Under Kundra Tahasil of Koraput district, Odisha. The area of mining lease area is in the Survey of India. Toposheet No. E44K5, and bounded by latitude N18° 53'38.79" to N18° 53'50.78"& Longitude E82° 24'09.60" to E82° 24'17.71". Nearest railway stations is Khadapa Railway Station at an aerial distance of 12 Km. The lease area can be approached from SH - 48 & NH - 26 at a distance of 22 Km & 17 Km respectively. Nearest Airport is Bhubaneswar Airport which is at a

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distance of 388 Km. Nearest reserve forest is Judanga reserve forest which is 6km away from the project site.

7. **Topography:** The M.L. area under reference represents a hilly terrain with a small hillock. The highest and lowest elevations of the area are 610 mRL in the Northwestern part and 600 mRL in the South-eastern part of the M.L. area respectively. Overall slope of the area is due South-east. There is no forest land in the M.L. area. The entire area falls in waste land under the revenue class of "Parbat" of Abada Ajogya Anabadi category.
8. **Reserves and total production:** As estimated, the geological reserves is 287150cum. Out of which the recoverable decorative stone @ 11.3% (cum) is 32447.950cum and mineable reserves is 185900cum. Out of which the recoverable decorative stone @ 19% (cum) is 21006.700cum. The proposed quarry will be developed to produce 4550 m³ of decorative stone (Saleable) in the first year to fifth year of the current plan period. However, the proposed rate of production will be 13650m³ of saleable decorative stone after the quarry is fully developed.

Year	Volume of Rocks	Volume of Presently Non Saleable Materials	Volume of Blocks	Volume of Waste
1st Year	1750	175	192.50	1382.50
2nd Year	2400	240	264.00	1896.00
3rd Year	3250	325	357.50	2567.50
4th Year	3250	325	357.50	2567.50
5thYear	4550	455	500.50	3594.50
Total	13650	1520	1672.00	12008.00

9. **Mining method:** It has been proposed that the mining will be carried out in a systematic, scientific and sustainable manner by adopting semi mechanized open cast method of mining by exposed the spreading sheet. The mode of working will be Semi Mechanised, loading, hauling & transportations are the various mining operations those will be practiced in the Naragaon Decorative Mines. After drilling and blasting, excavation will be done mechanically by excavators & dumpers with the help of the common equipments like hand shovel, crowbar, hammer, pick axe etc. Loading will be done through the excavators by the help of dumpers. Breaking & sizing is done by hammering & Wire saw etc. Crowbars, Pickaxe, hammer etc. will be used for breaking of the ore. The height of the bench of the quarry will be kept 3m and width will be 3m wide or more than the height. Excavation work and loading will be carried out by mechanised means. Granite which that is to be excavated, will be stacked in the ore stack yard manually by head load. Waste materials will be transported to the proposed dumping site by tipper. The individual slope of benches will be 90° whereas the overall slope of the proposed quarry would be kept 45°.
10. **Waste Generation and management:** During the proposed plan period a total of 12008 m³ of waste will generate due to course of mining. However about 40% of the generated waste will be utilized for maintenance and construction of the haul road, approach and existing roads in the surrounding areas periodically. Therefore, a total of 1493.00 m³ of waste will be utilized for construction and maintenance of roads and remaining 2240.00 m³ of waste will be dumped in the earmarked site over 0.141 Ha. area.
11. **Water requirement:** Total water requirement for the project will be 5 KLD out of which 2 KLD will be required for drinking and domestic purpose and 1.5 KLD for dust suppression and 1.5 KLD for plantation purpose. Water will be sourced from the nearby villages through tanker.

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12. **Power Requirement:** No electricity connection within ML area. However solar lights will be employed for day to day living purposes. Diesel requirement of 6000liters/month for operation of mining equipment and DG sets.

13. **Greenbelt:** Eucalyptus etc. are proposed to be planted with a minimum spacing of 2m between two consecutive plants.

Year	Area (m ²)	No. of saplings	Type of species	Location
1 st Year	200.00	40	Amla, Neem, Mango, Gamhari, Kasi, Bahada, Jamun, and Bamboo	Along the M.L. Boundary
2 nd Year	200.00	40		
3 rd Year	200.00	40		
4 th Year	200.00	40		
5 th Year	200.00	40		
Total	1000.00	200		

14. **Manpower:** A rough estimate reveals that a total of 22 nos. of administrative, technical persons, supervisory staffs, skilled and un-skilled workmen to carry out the mining and allied activities.

Sl. No	Description	No. of Persons
Administrative Staffs		
i)	Mines Manager (1st/2nd class certificate of Competency)	1
ii)	Geologist (Part Time)	1
iii)	Surveyor (Competency – Part Time)	1
iv)	Mechanical Engineer (Part Time)	1
Skilled Employees		
v)	Mining Mate	1
vi)	Quarry supervisor	1
vii)	Compressor Operator	1
viii)	Excavator Operator	1
ix)	Jack Hammer Operator	2
x)	LMV Driver	1
xi)	Water Tanker Operators	1
xii)	Tipper Operators	2
xiii)	Excavator Helper	1
xiv)	Jack hammer helper	2
Semi-skilled Employees		
xv)	Watchman	2
xvi)	Office staff	2
xvii)	Office Peon	1
	Total	22

15. **Project cost:** The approximate cost of the project comes around 105 lakhs. CSR budget is 8.6 lakhs. EMP capital cost of the project is 11.5 Lakh and EMP Recurring cost is 9.8 Lakh/Annum.

Table: EMP Capital cost

Sl. No.	Particulars	Capital cost Lakh
I.	Pollution Control	
i)	Water Tanker	5.00
ii)	Garland drains & retaining walls around the dump (m)	3.00

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	Sub Total	8.00
II.	Occupational Health	
i)	Safety equipment	1.0
ii)	Occupational health check up	1.0
	Sub Total	2.0
III.	Green Belt	1.0
IV.	Miscellaneous	0.5
	Grand Total	11.50

Table: EMP Recurring cost

Sl. No.	Particulars	Total cost (Lakh)
I.	Pollution Control	
a)	Regular Water sprinkling in the dust prone areas	3.60
b)	Maintenance of garland drain, settling tank & retaining wall	1.0
	Sub Total	4.6
II.	Pollution Monitoring	
a)	Air pollution Monitoring	3.0
b)	Water Pollution Monitoring	0.5
c)	Noise monitoring	0.2
	Sub Total	3.7
III.	Occupational Health	
a)	PPEs for workers	1.0
b)	Regular health check ups	0.5
	Sub Total	1.5
IV.	Green Belt	0.5
V.	Others (Expert Advice Etc.)	0.5
	Total	9.80

16. **Environment Consultant:** The Environment consultant M/s EHS360 Labs Private Limited, Chennai, along with the proponent made a presentation on the proposal before the Committee on 03.05.2023.

17. The SEAC in its meeting held on 03-05-2023 decided to take the decision on the proposal after receipt of the following from the proponent. The proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
i)	Details of silt management be submitted.	During mining operation Diamond wire saw will be used cutting of granite blocks & finished at mine faces and similarly in the granite blocks shifted / transported from one location to other silts / dusts will be generated and in waste dump area silts are to be generated. To prevent silts necessary measures are be taken to manage silts/solid waste particles at mine pit heads so that there should not any silts / solid waste particle causes water pollution. Hence	Complied

Proceedings of the SEAC meeting held on 17.08.2023 (Old proposals – compliance received)

Trayak
Environmental Scientist, SEAC

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
		<p>the surface run-off may contain silts / solid waste from mining operation & transportation activities:</p> <p>Following Measures shall be carried out for management of silt:</p> <ul style="list-style-type: none"> • Comply with any requirements in silt management plan about managing silt / solids at site. • Settling tanks/Pits and Garland drains, Check weirs shall be constructed at strategic area inside mining pits, so that contaminated run-off are prevented and clean water will be allowed from mining pits. • Minimize the amount of ground you expose and stocking of granite blocks use at mine site. • Development of plant vegetation at strategic area • Use of retaining fences to prevent solids from being washed off or blown away. • Vegetation shall not be removed until we need to work in that area. • Diversion of clean water and prevent water from entering the excavations area by using cut off ditches around working area. • Construction of settlement ponds, tanks or lagoons to collect run-off from the site and let suspended silt / solids settle so we can remove them from the water. • Settling pond shall be designed carefully so it can take the amount of water that will flow through it can stop discharges from the settling pond if the water becomes contaminated. • if anytime we find any water pollution, we will use polyelectrolytes or alum for treatment of same. • Treatment also will be done to water entering the settlement pond if it is contaminated by pollutants other than suspended solids. • Use sustainable drainage systems grass swales, ponds or infiltration trenches shall be used to control surface water run-off at site, run-off close to the source by slowing and holding back the run-off from your site and allowing natural processes to break down pollutants such as grass swales, ponds or infiltration trenches. SuDS deal with run-off close to the source by slowing and holding back the run-off from your site and allowing natural processes to break down pollutants. • Collection of run-off from your roads by using 	

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
		ditches and build bridges to cross water courses if required <ul style="list-style-type: none"> • Cleaning of site roads regularly and keep them free from dust and mud. • Designated vehicle shall be used in washing areas and collect contaminated water in a sump. • If required we will build any flood attenuation ponds and spillways upstream of the site to prevent settlement ponds from overflowing and causing pollution after heavy rain. 	
ii)	Usage of surface run-off water and its management and find the possibility of SRTS installation if required.	Surface Runoff water shall be collected at the settling pits and will be used for mining activities like dust suppression, plantation etc. Drainage system shall be designed in proper way so that runoff generated will be channelized to the settling pit. <ul style="list-style-type: none"> • Surface runoff water harvesting is the collection, accumulation, treatment or purification, and storing of storm water for its eventual reuse. • All the mine sumps, garland drains, sedimentation ponds to be created on the surface should be de-silted before monsoon • In order to avoid accidental entry of any person or cattle into the sedimentation ponds, proper fencing shall be carried out around it. • The surface water shall be monitored for the parameters like pH, total suspended solids, chemical oxygen demand, oil and grease, and treatment shall be done if required. • Provision of catch drain may be made around the material stock area in order to protect the interaction of natural surface runoff with that of the material stock. This will reduce the siltation of fine material particles into the surrounding area There will be no requirement of SRTS as the runoff generation is insignificant.	Complied
iii)	Details of road connectivity layout and permission to be taken from the appropriate authority/private land owners from proposed quarry site to nearest public road for transportation of minerals.	The mining lease area can be approached from SH:48 & NH:26 at a distance of 22Kms & 17 Kms respectively. The Lease area is well connected to the NH and SH through RD/PWD/ Panchayat / Village road. (Copy of layout is enclosed) Public road of 50 meter shall be used for transportation, necessary permission has been obtained from the concerned authority vide his letter no. 2024/2023 dated 14/07/2023.(Copy attached as Annexure-1)	Complied. Copy of permission is attached.
iv)	Detailed note on quantity of waste generation, storage, utilization	Total mineable quantity in the M.L. area = 21006.700 m3	Complied

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 Environmental Scientist, SEAC

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC				
	and its management.	<p>Total ROM excavated during the proposed Plan period = 13650 m³ Generation of waste @ 79 % = 12008.00 m³ Utilization of waste @ 40% for road & maintenance= 5460 m³ Remaining waste for dump = 8190 m³</p> <p>The generated waste will be periodically dumped over the proposed dump for the plan Period an additional area of 0.141 ha with an average height of 1.5 m having 5 terraces. However the generated waste will be back filled from the southern end of the conceptual boundary after reaching the ultimate pit limit. It has been computed that the waste generated during the conceptual period will be back filled. During conceptual period the waste generated will be completely utilized for road construction and for other construction purpose.</p> <p>There will be temporary storage of waste over an area of 0.701 Ha which will consequently utilized for construction purpose.</p> <ul style="list-style-type: none"> • The dump will have inward slope with catch drains at inward side of the terrace and the catch drain of the individual terrace will be connected to the garland drain outside the periphery of the dump. • Retaining wall and garland drain will be constructed around the dumps and the surface runoff water pass through the garland drain and finally settled in a settling pit before released outside. • Retaining wall and garland drains for the proposed waste dump will be constructed to arrest wash offs from the dump. <p>Materials other than marketable Granite Gneiss rock recovered by way of mining will be treated as waste. As discussed above Granite Gneiss deposits of the applied area are associated with weathered Granite Gneiss and cracks constitute in the main waste materials. Those materials which are removed and get the marketable blocks and tiles are considered as intercalated waste and those are removed & dumped directly (Weathered Granite Gneiss) are considered as waste. 11.3 % of the ROM with associated ferruginous minerals rejects will be treated as waste. The volumes of total waste likely to be generated during the proposed plan period are as below;</p> <table border="1" data-bbox="651 1883 1142 1948"> <thead> <tr> <th data-bbox="651 1883 898 1944">Year</th> <th data-bbox="898 1883 1142 1944">Volume of Waste (m³)</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	Year	Volume of Waste (m ³)			
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Proceedings of the SEAC meeting held on 17.08.2023 (Old proposals – compliance received)

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC																														
		<table border="1" data-bbox="646 197 1136 389"> <tr><td>1st Year</td><td>1382.50</td></tr> <tr><td>2nd Year</td><td>1896.00</td></tr> <tr><td>3rd Year</td><td>2567.50</td></tr> <tr><td>4th Year</td><td>2567.50</td></tr> <tr><td>5th Year</td><td>3594.50</td></tr> <tr><td>Total</td><td>12008.00</td></tr> </table> <p data-bbox="646 432 1216 499">Maximum Height and Spread of Dumps:</p> <p data-bbox="646 506 1216 846">However about 40% of the generated waste will be utilized for maintenance and construction of the haul road, approach and existing roads in the surrounding areas periodically. Therefore a total of 5460 m³ of waste will be utilized for construction and maintenance of roads and remaining 8190 m³ of waste will be dumped in the proposed temporary waste dump (Refer Plate No-VII). The details of the area covered and height of the proposed dump is given below;</p> <table border="1" data-bbox="646 853 1136 1406"> <tr><td>Total intercalated waste from proposed Granite during 5 years of plan period</td><td>=</td><td>12008 M³</td></tr> <tr><td>Construction and Maintenance of Road @ 40%</td><td>=</td><td>5460 M³</td></tr> <tr><td>Remaining waste for dumping</td><td>=</td><td>8190 M³</td></tr> <tr><td>Quantity due to maintain for slope of the dump@15%</td><td>=</td><td>1228.50 M³</td></tr> <tr><td>Average height of the proposed dump</td><td>=</td><td>1.5 M</td></tr> <tr><td>Surface area required</td><td>=</td><td>1174 M²</td></tr> </table> <p data-bbox="646 1435 1216 1496">Precautionary measures to be adopted during waste disposal:</p> <p data-bbox="646 1503 1216 1563">There will five terraces in proposed temporary waste dump and height of terrace will be 1.5 m.</p> <p data-bbox="646 1570 1216 1659">The following measures will be undertaken to stabilize the dump and the rest of wash off:</p> <ul data-bbox="694 1666 1216 1794" style="list-style-type: none"> ➤ Terracing at the dead end and as the dump constitutes of rocky mass, no plantation of saplings on the dump slope is envisaged. 	1 st Year	1382.50	2 nd Year	1896.00	3 rd Year	2567.50	4 th Year	2567.50	5 th Year	3594.50	Total	12008.00	Total intercalated waste from proposed Granite during 5 years of plan period	=	12008 M ³	Construction and Maintenance of Road @ 40%	=	5460 M ³	Remaining waste for dumping	=	8190 M ³	Quantity due to maintain for slope of the dump@15%	=	1228.50 M ³	Average height of the proposed dump	=	1.5 M	Surface area required	=	1174 M ²	
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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
		<ul style="list-style-type: none"> > During plan period, retaining wall and garland drain will be constructed for the proposed dump. In the 1st year programme, Construction of retaining wall of 100 m& garland drain of 105m will construct all around the waste dump. > One settling tank will be constructed to arrest the wash-off water. 	
v)	Layout map showing the mining area, waste dump, settling area and waste backfilled in the area and balance storage.	<p>The details of layout map showing the mining area, waste dump, settling area and waste backfilled in the area and balance storage have been earmarked in the Surface Plan and 5 Years Development Plan of the approved Mining Plan are attached in Annexure-2.</p> <p>The details are discussed in point no IV.</p>	Complied and layout map is attached.
vi)	Management plan for water and dust.	<p>Water Management Plan:</p> <ul style="list-style-type: none"> • The surrounding area is covered with network of small seasonal nalas, which carry water during rainy days only. Drainage pattern is dendritic. Quality of water in seasonal nalas has been found to be muddy during rainy season. There will be no waste water generation due to mining of decorative stone. Only waste water generation will be sanitary waste water which will be treated in soak pit via septic tank. The impact of mine drainage water on the surrounding water environment and the proposed mitigation measure has been given below. • The ground water level in the surrounding plain land is noticed to be 6-8m below the surface level. The RL of water table is around 200m. As the quarrying activity proposed to be taken up at a much higher level at 140 mRL, there will be no water logging in the quarry due to subsurface water. As per propose mining operation there is no generation of water or any process water is used, water pollution will be negligible. • Moreover, surface run-off water during rains is likely to be less contaminated as the same will not contain any dissolved pollutant generated from the mines and the suspended solids will also not be noticeably added to the same from the workings or stacks. • The Surface run-off water of the M.L area flows along the natural slopes. Retaining wall and garland drain will be constructed around 	Complied

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Jayak
Environmental Scientist, SEAC

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
		<p>the dumps and the surface run off water pass through the garland drain and finally settled in a settling pit before released outside.</p> <ul style="list-style-type: none"> • During the rainy season Quarry water will be channelized through peripheral drain and settling tank to release clean water. There is no river/nala flowing with in the lease hold area. • The groundwater table is below 6-8m below the surface level depending upon seasonal variation. However in the surrounding areas, water courses remain dry throughout except during rainy season. It is a fact that no constituent of the waste water state either goes into solution in the surface run off or carried as suspended particulate matter in the same. Therefore, contamination of water bodies due to mining of decorative stone does not arise and as such no treatment of waste water is required before its discharge into natural watercourse. • A boundary wall with garland drain will be constructed towards the south of the lease area to retain the mine drainage water and prevent mixing up the mines water with the canal. • The rain water harvesting structure created in the lease area supplement the water requirement dust suppression and plantation will met from the rainwater harvesting structure. • There is no proposal for use of water in the process of mining. Water required only for dust suppression, plantation and drinking purpose. During monsoon period surface runoff around the quarry and dump near the natural drains will follow the garland drains to arrest the eroded sediments, which shall pass through a series of garland drains before being discharged to the natural drainage system. From the analysis of waste material from the lease area it has been found that there is no contamination due to the dumping of waste material. <p>Dust Management Plan:</p> <ul style="list-style-type: none"> • During mining operation Diamond wire saw will be used for cutting of granite blocks & finished at mine faces, hence very less quantities of dust will be generated and similarly in the granite blocks shifted / transported from one location to other silts / 	

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 Environmental Scientist, SEAC

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC												
		<p>dusts will be generated. The impact of decorative stone mines have very less impact on air environment and proper mitigate measures will be adopted to reduce the impact of the mines on environment. Following table describes the potential sources of air pollutant emission and the proposed control measures for air pollution.</p> <p>Sources of Air pollution and Mitigation Measures:</p> <table border="1" data-bbox="651 660 1219 1948"> <thead> <tr> <th data-bbox="651 660 850 768">Potential sources</th> <th data-bbox="850 660 1011 768">Magnitude of air pollution</th> <th data-bbox="1011 660 1219 768">Control measures of air pollution</th> </tr> </thead> <tbody> <tr> <td data-bbox="651 768 850 981">Cutting & Sizing</td> <td data-bbox="850 768 1011 981">Dust generation</td> <td data-bbox="1011 768 1219 981">Water will be added in diamond wire saw at time of cutting so that no dust will be generated</td> </tr> <tr> <td data-bbox="651 981 850 1272">Loading of material</td> <td data-bbox="850 981 1011 1272">Air emission</td> <td data-bbox="1011 981 1219 1272">Water sprinkling on mineral ore/overburden Material prior to loading. Overloading will be avoided in the trucks</td> </tr> <tr> <td data-bbox="651 1272 850 1948">Transportation</td> <td data-bbox="850 1272 1011 1948">High dust</td> <td data-bbox="1011 1272 1219 1948">Provision for automatic water sprinkle system On permanent road and water spray by tankers on Temporary road. Covering of the material with turpentine in case of long haulage Green belt of trees with good footage on both side of haul road. Provision of water</td> </tr> </tbody> </table>	Potential sources	Magnitude of air pollution	Control measures of air pollution	Cutting & Sizing	Dust generation	Water will be added in diamond wire saw at time of cutting so that no dust will be generated	Loading of material	Air emission	Water sprinkling on mineral ore/overburden Material prior to loading. Overloading will be avoided in the trucks	Transportation	High dust	Provision for automatic water sprinkle system On permanent road and water spray by tankers on Temporary road. Covering of the material with turpentine in case of long haulage Green belt of trees with good footage on both side of haul road. Provision of water	
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				sprinkling on the dumper to arrest fine dust before it is transported. 1no.of water tanker with 8000 liter capacity will be procured and used for water sprinkling twice in a day in haul roads , dumping site, loading and unloading site etc.	
		Storage of Sized & Finished granite Block	High dust potential	Water sprinkling arrangement will be done, Development to greenbelt to arrest the dust generation	
		Air pollution Monitoring	Monitoring of air pollution	Ambient air pollution monitoring will be Carried out as per the Environment clearance letter issued by SEIAA, Odisha.	
vii)	Certificate from the concerned mining officer that no other mines located within 500 meter from the periphery of the lease boundary.	The Mining Officer, Koraput Circle, Koraput, Odisha has been certified that no other mines located within 500 meters from the periphery of the lease boundary. The copy of signed check list is attached as Annexure-3 (Please refer point no. 18 & 23).			Complied and copy of signed check list is attached.
viii)	As per the provisions stipulated in OM F.No.22-34/2018-IA.III dated 16th January 2020, MOEFCC, Government of India for the stone mining projects, the mining lease holder to undertake re-grassing of the area or any other area which may have been disturbed due to	As per the provisions stipulated in OM F. No. 22-34/2018-IA.III dated 16th January 2020, MOEFCC, Government of India, we are undertaking that re-grassing of the area or any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for fodder, flora, fauna etc. after ceasing mining operation that is at the			Complied and Undertaking of the same is attached.

Proceedings of the SEAC meeting held on 17.08.2023 (Old proposals – compliance received)

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	their mining activities and restore the land to a condition which is fit for fodder, flora, fauna etc. after ceasing mining operation that is at the time of mine closure.	time of mine closure. Undertaking of the same attached as Annexure-4.	

Considering the information furnished and the presentation made by the consultant, **M/s EHS360 Labs Private Limited, Chennai - 68** along with the project proponent, the SEAC recommended for grant of Environmental Clearance upto lease period with stipulated conditions as per **Annexure – A** and following additional conditions;

- i) Haulage road shall be developed and maintained perennially and perpetually by the proponent in consultation with the concerned authority of the Govt.
- ii) The project proponent shall maintain periodic health check-up records of their employees and ensure use of face mask by workers in crushing and handling sections of the decorative stone quarry for ensuring that working personnel are not affected by silicosis.
- iii) The project proponent shall follow proper procedure as advised by Forest Deptt. for tree felling or transplantation of those trees within safety zone. Provision for compensatory afforestation must be done by equal number of plantations in consultation with Forest Deptt.
- iv) The project proponent shall undertake re-grassing of the area or any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for fodder, flora, fauna etc. after ceasing mining operation that is at the time of mine closure.
- v) Detail risk and hazard management procedure as per the **Annexure – B** shall be followed by the lessee.


Member Secretary, SEAC

**CONDITIONS TO BE STIPULATED IN ENVIRONMENTAL CLEARANCE FOR
DECORATIVE STONE MINES & STONE QUARRY**

A. Specific conditions

1. The Project Proponent shall obtain consent from the State Pollution Control Board, Odisha and effectively implement all the conditions stipulated therein.
2. Project Proponent shall appoint an Occupational Health Specialist for Regular and Periodical medical examination of the workers engaged in the Project and records maintained; also, Occupational health check-ups for workers having some ailments like BP, diabetes, habitual smokers, etc. shall be undertaken once in six months and necessary remedial/preventive measures taken accordingly. Recommendations of National Institute for Labour for ensuring good occupational environment for mine workers would also be adopted; All the old age people of the surrounding villages may be provided medical facilities.
3. Transport of minerals shall be done either by dedicated road or it should be ensured that the trucks/dumpers carrying the mineral should not be allowed to pass through the villages. The Project Proponent shall ensure that the road may not be damaged due to transportation of the mineral; and transport of minerals will be as per IRC Guidelines with respect to complying with traffic congestion and density.
4. Project Proponent shall ensure the safeguard and wellbeing of villagers and school, regular health monitoring of all residents in the area and the compliance Report shall be submitted to the Regional office of the Ministry and SEIAA, Odisha.

B. Standard conditions

1. A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the SEIAA, Odisha 5 years in advance of final mine closure for approval.
2. No mining activities will be allowed in forest area, if any, for which the Forest Clearance is not available.
3. No change in mining technology and scope of working should be made without prior approval of the SEIAA, Odisha.
4. No change in the calendar plan including excavation, quantum of mineral and waste should be made.
5. The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water (surface water and ground water) for the project.
6. Mining shall be carried out as per the provisions outlined in the approved mining plan as well as by abiding to the guidelines of Directorate General Mines Safety (DGMS).
7. Protection of vegetation in the surrounding areas, and proper storage of solid waste, subgrade ore and their use have to be given priority during mining operation.
8. Digital processing of the entire lease area using remote sensing technique shall be

carried out regularly once in three years for monitoring land use pattern and report submitted to Ministry of Environment, Forest and Climate Change its Regional Office and SEIAA, Odisha.

9. Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of PM10 and PM2.5 such as haul road, loading and unloading point and transfer points. Fugitive dust emissions from all the sources shall be controlled regularly. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard. Monitoring of Ambient Air Quality to be carried out based on the Notification 2009, as amended from time to time by the Central Pollution Control Board.
10. Regular monitoring of ground water level and quality shall be carried out in and around the mine lease by establishing a network of existing wells and constructing new piezometers during the mining operation. The project proponent shall ensure that no natural water course and/or water resources shall be obstructed due to any mining operations. The monitoring shall be carried out four times in a year pre- monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected 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.
11. Transportation of the minerals by road passing through the village shall not be allowed. A 'bypass' road should be constructed (say, leaving a gap of at least 200 meters) for the purpose of transportation of the minerals so that the impact of sound, dust and accidents could be mitigated. The project proponent shall bear the cost towards the widening and strengthening of existing public road network in case the same is proposed to be used for the Project. No road movement should be allowed on existing village road network without appropriately increasing the carrying capacity of such roads.
12. 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 light/night hours.
13. Sufficient number of Gullies to be provided for better management of water. Regular Monitoring of pH shall be included in the monitoring plan and report shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office on six monthly basis.
14. There shall be planning, developing and implementing facility of rainwater harvesting measures on long term basis and implementation of conservation measures to augment ground water resources in the area in consultation with Central Ground Water Board.
15. The Project Proponent has to take care of gullies formed on slopes. Dump mass should be consolidated with proper filling/leveling with the help of dozer/compactors.
16. The reclamation at waste dump sites shall be ecologically sustainable. Scientific reclamation shall be followed. The local species may be encouraged and species are so chosen that the slope, bottom of the dumps and top of the dumps are able to sustain these species. The aspect of the dump is also a factor which regulates some climatic

parameters and allows only species adopted to that micro climate.

17. The top soil, if any, shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation. The over burden (OB) generated during the mining operations shall be stacked at earmarked dump site(s) only and it should not be kept active for a long period of time. The maximum height of the dumps shall not exceed 8m and width 20 m and overall slope of the dumps shall be maintained to 45°. The OB dumps should be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles shall be undertaken for stabilization of the dump. The entire excavated area shall be backfilled and afforested. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office on six monthly basis.
18. Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, mineral and OB dumps to prevent run off of water and flow of sediments directly into the river and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly. The drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed both around the mine pit and over burden dumps to prevent run off of water and flow of sediments directly into the river and other water bodies and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material. Sedimentation pits shall be constructed at the corners of the garland drains and desilted at regular intervals.
19. Plantation shall be raised in a 7.5m wide green belt in the safety zone around the mining lease, backfilled and reclaimed area, around water body, along the roads etc. by planting the native species in consultation with the local DFO/Agriculture Department and as per CPCB Guidelines. The density of the trees should be around 2500 plants per ha. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within first five years.
20. The Project Proponent shall make necessary alternative arrangements, where required, in consultation with the State Government to provide alternate areas for livestock grazing, if any. In this context, Project Proponent should implement the directions of the Hon'ble Supreme Court with regard to acquiring grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded against felling and plantation of such trees should be promoted.
21. The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna, if any, spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. A copy of action plan shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office.
22. As per the Company Act, the CSR cost should be 2 % of average net profit of last three years. Hence CSR expenses should be as per the Company Act/Rule for the Socio

Economic Development of the neighborhood Habitats which could be planned and executed by the Project Proponent more systematically based on the 'Need based door to door survey' by established Social Institutes/Workers. The report shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office on six monthly basis.

23. 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, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
24. Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs / muffs.
25. 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.
26. 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.
27. The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment, Forest and Climate Change, its Regional Office, Central Pollution Control Board and State Pollution Control Board.
28. A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal.
29. State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and Collector's office/ Tehsildar's Office for 30 days.
30. The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment, Forest and Climate Change at www.environmentclearance.nic.in and a copy of the same should be forwarded to the Regional Office.
31. The SEIAA, Odisha may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.
32. Any appeal against this 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.
33. The above mentioned stipulated conditions shall be complied in a time-bound manner. Failure to comply with any of the conditions mentioned above may result in cancellation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.

5.5. HAZARDS AND RISK MANAGEMENT

5.5.1 Explosives

Blasting is done by means of explosives which are hazardous during of handling, storage and blasting.

5.5.1.1. Storage and Handling

The Applicant is advised to store the explosives as per the Indian Explosives Act, 1958 and the Explosive Rules, 1983. Necessary permissions should be obtained from the Joint Controller of Explosives to store and uses of explosives in the quarry in the magazine permit under Form - 23 or Agreement shall be made with holder of Form - 22 who can supply and fire explosives as per safety practices. However blasting in the mine or quarry shall be done as per the MMR, 1961 under the supervision of Mines Blaster certificate holder, appointed under Reg. 160 of Metalliferous Mines Regulations, 1961.

5.5.1.2. Blasting

Poorly designed shots can result in misfires early ignition and flying rock. Safety can be ensured by planning for round of shots to ensure face properly surveyed, holes correctly drilled, direction logged, the weight of explosion for good fragmentation. Blast design, charge and fire around of explosives should be carried out by a trained person.

5.5.1.3. Drilling

Slipping and Falling of labours from the edge of a bench during drilling is possible. Part of training should include instructions to face towards the open edge of the bench so any inadvertent backward step is away from the edge. Suitable portable rail fencing which can be erected between the drilling operations and the edge of the mine can be provided. Attachment of a safety line to the drilling rig and provide harness for the driller to wear can be done. Newer drill machines are provided with cabin which controls noise level within cabins. Driller operators should be protected with ear protection.

5.5.2. Loading

Possible risks during loading of mined rocks are falling of rock on the driver, plant toppling over due to uneven ground, failure of hydraulic system, fires, fall while gaining access to operating cabin, electrocution in Draglines, failure of wire ropes in Dragline. In order to overcome these risks:



- Operator cabin should be of suitable strength to protect the driver in event of rock fall.
- Electrical supply to dragline should be properly installed with adequate earth continuity and earth leakage protection.
- Wire rope should be suitable for work undertaken and be examined periodically.
- Ensure that loaders are positioned sufficiently away from face edges

5.5.3. Transportation

Brake failure, lack of all-around visibility from driver position, vehicle movements particularly while reversing, rollover, Vibrations, Noise, Dust and improper / no signalling are some of the factors causing risk. This can be avoided by following measures:

- Visibility defects can be eliminated by the use of visibility aids such as closed circuit television and suitable mirrors.
- Edge protection is necessary to prevent inadvertent movement.
- Seatbelt to protect driver in event of vehicle rollover.
- Good maintenance and regular testing necessary to reduce possibility of brake failure.
- Avoid driving at the edge of roadway under construction
- Heavy earth moving equipment and vehicle drivers and those giving signals should be well trained.

5.5.4. Unstable face

Chances of Rock fall or slide exists. Regular examination of face must be done and remedial measures must be taken to make it safe if there is any doubt that a collapse could take place. Working should be advanced in a direction taken into account the geology such that face and quarry side remain stable.

5.5.5. General safety measures

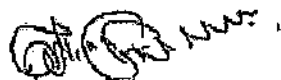
Provisions of the Mines Act, Rules and Regulations orders made there under shall be complied with, so that the safety of the mine, machinery and persons will be ensured. Permission, relaxation or exemption wherever required for the safe and scientific mining of the deposit will be obtained from the Department of Mine Safety. Copy of Agreement for handling of Explosives under License Holder at Proposed site is given in additional document.

- Safety kits should be located in easily accessible place with major first aid materials in it.
- Entry of any unauthorized person into mine and plant areas shall be completely prohibited
- Arrangements for fire fighting in the mine's office complex and mining area

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- Provision of all the safety appliances such as safety boot, helmets, goggles, ear plugs etc. shall be made available for the employees
- Mining will be undertaken in coexistence with the requirements of the Mining Plan which shall be updated from time to time
- Handling of explosives, charging and blasting shall be undertaken only by a competent person
- Adequate safety equipment shall be provided at the explosive magazine

All the mining equipment shall be maintained as per the guidelines of the manufacturer.



CONDITIONS TO BE STIPULATED IN ENVIRONMENTAL CLEARANCE FOR SRI JAGADGURU KRIPALU 400 BEDED MULTI-PURPOSE HOSPITAL & RESEARCH CENTER WITH TOTAL PLOT AREA OF 56372.71 SQ.M I.E. 13.930 ACRES AND PLOT AREA OF 37504 SQ.M AT JAGADGURU KRIPALU UNIVERSITY, BANARA, CUTTACK DISTRICT OF SMT SULAKSHYANA DAS - (EC).

I. SPECIFIC CONDITIONS:

A. CONSTRUCTION PHASE:

1. Construction site should be adequately barricaded before the construction begins.
2. 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.
3. Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred.
4. Any hazardous waste generated during construction phase, should be disposed off as per applicable rules and norms with necessary approvals of the State Pollution Control Board.
5. No ground water shall be extracted for the project work at any stage during the construction phase. If ground water will be used during construction phase, they shall obtain permission from the Water Resource Department, Govt. of Odisha.
6. Considering the peak water consumption of the occupants, the design of the water supply system and the sewage disposal system of the project should be based on the provisions of water consumption.
7. The proponent shall explore the possibility to use the municipality supply water instead of ground water.
8. The proponent shall maintain the natural pond within the project site and use the same for rainwater harvesting purpose.
9. Provision shall be made for the housing of construction labourers 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.
10. A First-Aid room will be provided in the project site both during construction and operation of the project.
11. All the top soil excavated during construction activities should be stored separately for use in land filling, horticulture/landscape development within the project site.
12. Disposal of muck during construction phase should not create any adverse effect on the neighboring communities and will be disposed off taking the necessary precautions for general safety and health aspects of people only in approved sites with the approval of competent authority.
13. Construction spoils, including bituminous material and other hazardous materials should not be allowed to contaminate watercourses, ground water and dump sites by following safe dumping / disposal practice as per statutory rules and norms with necessary approval of the Odisha State Pollution Control Board.

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14. The fuel for diesel generator sets to be used during construction phase shall use low sulfur diesel fuel and should conform to Environment (Protection) Rules 1986 prescribed for air emission and noise standards.
15. The diesel required for operating DG sets shall be stored in underground tanks and, if required, clearance from the Chief Controller of Explosives shall be taken.
16. Vehicles used for bringing construction materials to the site should be in good condition and should have a pollution check certificate, covered and conform to statutory air and noise emission standards and should be operated only during non-peak hours of the day.
17. Ambient noise levels should conform to residential standards both during day and night. Incremental pollution loads on the ambient air and noise quality should be closely monitored during construction phase. Adequate measures should be taken to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB/OPCB.
18. Fly ash bricks should be used as building material in the construction as per the provisions of Fly Ash Notification of September, 1999 and as amended thereafter.
19. Ready mixed concrete would be used in building construction.
20. Storm water control and its re-use should be as per CGWB and BIS standards for these applications.
21. Fixtures for showers, toilet flushing and drinking water should be of low flow type and restricted to requirements by use of aerators, avoiding wastage pressure reducing devices or sensor based controls.
22. Use of glass may be maximum upto 40% of total outer wall area to reduce the energy consumption and load on air-conditioning. If necessary, high quality double glass with special reflective coating may be used in the windows.
23. Roof should meet the prescribed requirement as per Energy Conservation Building Code by using appropriate thermal insulation material.
24. Opaque wall should meet prescriptive requirements as per Energy Conservation Building Code.
25. The approval of the competent authority shall be obtained for structural safety of the buildings due to earthquake, adequacy of firefighting equipments etc. as per National Building Code of India, 2005 including protection measures from lightning etc.
26. Regular supervision of the above and other measures for monitoring should be in place all through the construction phase to avoid disturbances and pollution to the surroundings.

B. OPERATION PHASE:

1. Fresh water requirement shall not exceed 406 m³/day.
2. 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 SEIAA, Odisha and the Regional Office, MoEF&CC along with six monthly Monitoring reports.
3. The local bye-law provisions on rain water harvesting should be followed. If local bye-law 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 of 10 nos. shall be provided.

4. Solid waste shall be collected, treated and disposed in accordance with the Solid Waste (Management & Handling) Rules, 2016.
5. Solid waste shall be segregated into biodegradable, recyclable and inert category. Biodegradable waste shall be composted indigenously in Organic Waste Converter and the other waste categories shall be disposed suitably.
6. Bio-medical waste shall be collected, treated and disposed in accordance with Bio-medical Waste Management Rules, 2016.
7. No ground water shall be used during the operation phase. If ground water will be used during operation phase, they shall obtain permission from the Water Resources Department.
8. The proponent shall install an Effluent Treatment Plant (ETP) of capacity 40 KLD for treatment of effluent from different sources of hospital. The treated water from the ETP shall be neutralized for public health prior to other treatment processes.
9. Treatment of 100% grey water by decentralized treatment should be done. Treated waste water from STP of 370 KLD capacity shall be recycled / reused to the maximum extent possible. Discharge of unused treated waste water shall conform to the norms and standards of the Odisha State Pollution Control Board. Necessary measures should be taken to mitigate the odour problem from STP.
10. The STP sludge should not be dried nor incinerated within the project site and should be disposed off as per the norms of SPCB, Odisha.
11. The STP must treat all kinds of pollutants present in it and its capacity should take into account the entire load of sewage generated from the hospital.
12. The project proponent will ensure that under no circumstances, the environment is polluted due to non-functioning / under performance of sewerage disposal system of the project.
13. Diesel power generating sets proposed as source of back-up power for lifts elevators and common area illumination during operation phase should be of enclosed type and conform to Environment Protection (EP) rules 1986. The height of the stack of DG sets should be equal to the height needed for the combined capacity of all proposed DG sets put together and should be more than the highest building height. Low sulfur diesel should be used. The location of the DG sets may be decided in consultation with Odisha State Pollution Control Board. Care may be taken to avoid disposal of smoke /pollutants from DG sets in the residential area. Low sulfur diesel oil (LDO or HSD) is to be used in DG set.
14. Noise should be controlled to ensure that it does not exceed the prescribed standards. During night time, the noise levels measured at the boundary of the sites shall be restricted to the permissible levels to comply with the prevalent regulations.
15. Green-belt & avenue plantation of trees over the area of 11274 m² (30.06 % of total plot area) shall be done using native tree species/shrubs improving greenery & keeping in view aesthetics considerations in the whole complex. Professional landscape architects should be engaged to design the green layout to provide for multi-tier plantation and green fencing all around, mitigating various environmental pollutants like dust, noise, emissions etc.
16. Weep holes in the compound walls shall be provided to ensure natural drainage of excessive rain water in the project area during the monsoon period after the harvesting operations. Care must be taken so that there is no water logging in the territory and drainage is 100%.
17. Traffic congestion near the entry and exit points from the roads adjoining the proposed project site must be avoided. Traffic congestion shall be avoided inside the project site. The


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- area ear- marked for parking shall not be used for any other purpose. Alternate entry and exit must be provided to handle excess traffic and emergency situations.
18. A report on the energy conservation measures confirming to energy conservation norms finalized by the Bureau of Energy Efficiency should be prepared incorporating details about building materials & technology, R& U Factors etc. and submitted to the SEIAA, Odisha in three months' time before operation/ habitation.
 19. The proponent shall use atleast 5% of non-conventional energy (solar energy).
 20. Central lighting and street lighting shall be based on solar power. Provisions of solar hot water storage / supplies at the roof top may be made as per statutory norms of CPCB/MoEF&CC/SPCB, Odisha.
 21. Energy conservation measures like installation of LED for lighting the areas outside the building should be integral part of the project design and should be in place before project commissioning. Discarded bulbs should be properly collected and disposed off/sent for recycling as per the prevailing guidelines/ rules of the regulatory authority to avoid toxic contamination. Use of solar panels be adopted to the maximum extent possible, especially for street lights.

II. GENERAL CONDITIONS:

1. The project proponent shall comply with all the conditions stipulated in the building approval letter.
2. The applicant (Project proponent) will take necessary measures for prevention, control and mitigation of Air Pollution, Water Pollution, Noise Pollution and Land Pollution including solid waste management as mentioned by them in Form-1, Form-1A, and Environment Management Plan (EMP) in compliance with the prescribed statutory norms and standards.
3. The applicant will take statutory clearance / approval / permissions from the concerned authorities in respect of the project as and when required.
4. The applicant will submit half-yearly compliance report on post-environmental monitoring in respect of the stipulated terms and conditions in the Environmental Clearance to the State Environmental Impact Assessment Authority (SEIAA), Odisha, on 1st June and 1st December of each calendar year.
5. The project proponent shall comply to all the conditions stipulated by the Fire Prevention Officer, Odisha.
6. The applicant will adopt the prescribed norms, and standards provided in the National Building Code of India, 2005.
7. A copy of the environmental clearance letter shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional office. District Industries Centre and Collector's Office / Tehsildar's Office for 30 days.
8. The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to the SEIAA, Odisha.
9. Officials from the Regional Office of MoEF&CC, Bhubaneswar would be monitoring the implementation of environmental safeguards should be given full cooperation, facilities and documents/data by the project proponents during their inspection. A complete set of all

entire document submitted to SEIAA, Odisha should be forwarded to the Regional Office of MOEF&CC, Bhubaneswar.

10. In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by the SEIAA, Odisha.
11. The SEIAA, Odisha reserves the right to add additional safeguard measures subsequently, if found necessary, and to take action including revoking of the environment clearance under the provisions of the Environmental (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time bound and satisfactory manner.
12. All other statutory clearances shall be obtained, as applicable by project proponents from the respective competent authorities.
13. These stipulations would be enforced among others under the provisions of Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification, 2006.
14. The project proponent should advertise in at least two local Newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded Environmental clearance and project has been accorded Environmental Clearance and copies of clearance letters are available with the state Pollution Control Board and may also be seen on the website of the SEIAA, Odisha. The advertisement should be made within Seven days from the date of receipt of the Clearance letter and a copy of the same should be forwarded to the Regional Office of MoEF&CC, Govt. of India at Bhubaneswar.
15. A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parisad/Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal, the clearance letter shall also be put on the website of the company the proponent.
16. The proponents shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Offices of MoEF&CC, Bhubaneswar the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; PM₁₀, PM_{2.5}, SO₂, NO_x (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.
17. Any appeal against this 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.
18. The above mentioned stipulated conditions shall be complied in a time-bound manner. Failure to comply with any of the conditions mentioned above may result in cancellation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.

TERMS OF REFERENCE (ToR) FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY AND INFORMATION TO BE INCLUDED IN EIA/EMP REPORT FOR M/S. FERRO ALLOYS CORPORATION LTD OF EXPANSION IN CHROMITE ORE PRODUCTION FROM 0.24 MILLION TPA (OPENCAST) TO 1.5 MILLION TPA (OPENCAST AND UNDERGROUND) WITH MAXIMUM EXCAVATION OF 2.5 MILLION TPA (OPENCAST AND UNDERGROUND) ALONG WITH INSTALLATION OF A NEW CRUSHER AND COB PLANT TO ENHANCE THE BENEFICIATED CHROME ORE FROM 0.1 MTPA (OPENCAST) TO 0.8 MTPA (OPENCAST AND UNDERGROUND) AND A BACKFILL PLANT IN OSTAPAL CHROMITE MINE (72.843 HA) AT VILLAGE GURUJANGA TEHSIL SUKINDA DISTRICT JAJPUR OF SRI SANDEEP KITTANA ACHARYA – TOR.

A. ADDITIONAL TOR's:

- i) Project proponent should provide in the EIA Report details of all the statutory clearances, permissions, no objection certificates, consents etc. required for this project under various Acts, Rules and regulations and their status or estimated timeline after grant of EC.
- ii) Project proponent should submit the revenue plan for mining lease, revenue plan should be superimposed on the satellite imaginary clearly demarcate the Govt. land, private land, agricultural land etc.
- iii) Project proponent should submit the real-time aerial footage & video of the mining lease area and of the transportation route. Project proponent should submit the detailed plan in tabular format (year-wise for life of mine) for afforestation and greenbelt development in and around the mining lease. The Project proponent should submit the number of saplings to be planted, area to be covered under afforestation & green belt, location of plantation, target for survival rate and budget earmarked for the afforestation & green belt development. In addition to this project proponent should show on a surface plan (5-year interval for life of mine) of suitable scale the area to be covered under afforestation & green belt clearly mentioning the latitude and longitude of the area to be covered during each 5 years. The capital and recurring expenditure to be incurred needs to be submitted. Presently in India there are many agencies which are developing forest in short interval of time. Thus, for the plantation activities details of the experts/agencies to be engaged needs to be provided with budgetary provisions.
- iv) Project proponent should submit the quantity of surface or ground water to be used for this project. The complete water balance cycle need to be submitted. In addition to this project proponent should submit a detailed plan for rain water harvesting measures to be taken. Project proponent should submit the year wise target for reduction in consumption of the ground/surface water by developing alternative source of water through rain water harvesting measures. The capital and recurring expenditure to be incurred needs to be submitted.
- v) Project proponent should clearly bring out the details of the manpower to be engaged for this project with their roles /responsibilities/designations. In addition to this Project proponent should mention the number and designation of person to be engaged for implementation of environmental management plan (EMP). The capital and recurring

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- expenditure to be incurred needs to be submitted.
- vi) Project proponent Should submit the year- wise, activity wise and time bound budget earmarked for EMP, occupational health surveillance & corporate Environmental Responsibility. The capital and recurring expenditure to be incurred needs to be submitted.
 - vii) Project proponent should submit the measures/technology to be adopted for prevention of illegal mining and pilferage of mineral. Project proponent should submit the detailed mineralogical and chemical composition of the mineral and percentage of free silica from a NABL/MoEF&CC accredited laboratory.
 - viii) Project proponent should clearly show the transport route of the mineral and protection and mitigative measure to be adopted while transportation of the mineral. The impact from the centre line of the road on either side should be clearly brought out supported with the line source modelling and isopleth. Further, frequency of testing of Poly Achromatic Hydrocarbon needs to be submitted along with budget. Based on the above study the compensation to be paid in the event of damage to the crop and land on the either side of the road needs to be mentioned. The Project proponent should provide the source of equations used and complete calculations for computing the emission rate from the various sources.
 - ix) Project proponent should clearly bring out that what is the specific diesel consumption and steps to be taken for reduction of the same. Year-wise target for reduction in the specific diesel consumption needs to be submitted.
 - x) Project proponent should bring out the awareness campaign to be carried out on various environmental issues, practical training facility to be provided to the environmental engineer/diploma holders, mining engineer/diploma holders, geologists, and other trades related to mining operations. Target for the same needs to be submitted.
 - xi) The budget to be earmarked for the various activities shall be decided after perusal of the Standard EC Conditions published by the MoEF&CC, Govt. of India. After perusal of Standard EC conditions if agreed, project proponent should also submit an undertaking by the way of affidavit for Compliance of Standard EC conditions already prescribed by the Ministry vide O.M. No and Specific condition if prescribed by the SEAC / MoEF&CC.
 - xii) The project proponent should ensure that only NABET accredited consultant shall be engaged for the preparation of EIA/EMP Reports. Project proponent shall ensure that accreditation of consultant shall be valid during the collection of baseline data, preparation of EIA/EMP report and during the appraisal process. The Project proponent and consultant should submit an undertaking the information and data provided in the EIA Report and submitted to the Ministry are factually correct and Project proponent and consultant are fully accountable for the same.
 - xiii) The project proponent should submit the photograph of monitoring stations & sampling locations. The photograph should bear the date, time, latitude & longitude of the monitoring station/sampling location. In addition to this Project proponent should submit the original test reports and certificates of the labs which will analyse the samples.

B. STANDARD TOR FOR MINING PROJECT

- i) Year-wise production details since 1994 should be given; clearly stating the highest production achieved in anyone 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 / top sheet, 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 proposed safeguard measures in each case should also be provided.
- viii) Issue 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

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- Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.
- xiii) Status of forestry clearance for the broken-up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.
 - xiv) Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.
 - xv) The vegetation in the RF / PF areas in the study area, with necessary details, should be given.
 - xvi) A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.
 - xvii) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.
 - xviii) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.
 - xix) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. 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 modelling 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 modelling 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.
- 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) Activity-wise time-bound action plan on the issues raised and commitment made during public hearing to be submitted as part of the final EMP Report in compliance of the Ministry's OM .F.No.22-65/2017- IA.III dated 30th September, 2020

C. Besides the above, the below mentioned general points are also to be followed: -

- a) All documents to be properly referenced with index and continuous page numbering.
- b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
- c) 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.
- d) Where the documents provided are in a language other than English, an English translation should be provided.
- e) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.
- f) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J-11013/41/2006- IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.
- g) 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.
- h) 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.
- i) 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.

D. The prescribed TOR would be valid for a period of four years for submission of the EIA/EMP report.

Trayak
Environmental Science, SEAC