PROCEEDINGS OF THE MEETING OF STATE LEVEL EXPERT APPRAISAL COMMITTEE, ODISHA HELD ON 24TH APRIL 2023

The SEAC met on 24th April 2023 at 10:30 AM in the Conference Hall of Odisha State Pollution Control Board, Bhubaneswar under the Chairmanship of Sri Sashi Paul. The following members were present in the meeting.

1.	Sri Sashi Paul	-	Chairman (through VC)
2.	Dr. K. Murugesan	-	Member Secretary
3.	Dr.Chittaranjan Panda	-	Member
4.	Prof. (Dr.) H.B. Sahu	-	Member (through VC)
5.	Er. Fakir Mohan Panigrahi	-	Member (through VC)
6.	Prof. (Dr.) B.K. Satpathy	-	Member
7.	Dr. K.C.S Panigrahi	-	Member (through VC)
8.	Shri Jayant Kumar Das	-	Member
9.	Prof. (Dr.) Abanti Sahoo	-	Member (through VC)
10.	Dr. Ashok Kumar Sahu	-	Member

Draft proceeding of the meeting was finalized by the members through e-mail and final proceeding of the meeting was confirmed by the members through e-mail. The agenda-wise proceedings and recommendations of the committee are detailed below.

ITEM NO. 01

PROPOSAL FOR ENVIRONMENTAL CLEARANCE FOR AMBADAHARA STONE QUARRY OVER AN AREA OF 6.0 HA. AT VILLAGE AMBADAHARA UNDER BANSPAL TAHASIL OF KEONJHAR DISTRICT OF SRI SAPAN KUMAR SAHU (TAHASILDAR)- EC.

1. This proposal is for Environmental Clearance of Ambadahara Stone Quarry over an area of 6.0 Ha. at village Ambadahara under Banspal Tahasil of Keonjhar district of Sri Sapan Kumar Sahu (Tahasildar).
2. **Category**: As per the EIA Notification, 2006 and its subsequent amendments, this project falls in category B under Schedule of activity 1(a)- Mining of Minerals.
3. The quarry is not auctioned yet, and is in name of Tahasildar, Banspal. After obtaining environmental clearance, the quarry will be auctioned and transferred in favour of Successful bidder.
4. The Mining plan of Ambadahara Stone Quarry has been approved for a period of five years by The Joint Director of Geology, Keonjhar, vide letter no-312/CZ, dated 25.01.2021. The quarry will be mined for five years. The total proposed rate of production is 42000 cum/ Annum.
5. 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 28.01.2020.

6. Earlier, EC was granted by SEIAA, Odisha vide letter no SEIAA/284 dated 14.01.2016. The proposed land doesn't come under DLC and the land belongs to AAA while the kisam of land is Patharbani.

7. **TOR details**: Terms of Reference (TOR) was granted by SEIAA, Odisha vide letter no. 1517 dated 17.06.2021.

8. **Public hearing details**: The public hearing was held in respect of Environmental Impact assessment of Ambadahara Sand Quarry over 6.0 hectares of Tahasildar, Banspal at Ambadahara-village, Banspal-Tahsildar, Keonjhar-District held on 09.11.2022 at 11.00 am at village-Ambadahara, Khata No.41(AJA), Plot No.428, Kissam-Biali. Issues raised during public hearing are adverse impact on nearby houses due to blasting, dust resistance in surroundings affecting public due to quarrying activities and transportation, depletion of ground water leading to water scarcity, dewatering of mine pit & reclamation, operation of stone quarry as per the Govt. norms, employment of locals for livelihood, compensation for agriculture & house damage and provision of five bore wells. Budget earmarked for action plan of public hearing is Rs. 25 lakhs.

9. **Location and connectivity**: The proposed project is located in Ambadahara - village over an area of 6.0 Ha. under Banspal-Tahasil in Keonjhar district, Odisha. The quarry Lease area, lies between Latitude of 21° 37' 57.0" N to 21° 38' 7.4" N and Longitude of 85° 32' 6.0 " E to 85° 32' 13.1" E .The lease area is located in survey of India Topo Sheet No. F45N/10 bearing Khata no 42(AAA) and Plot no. 543. The nearest village of the quarry lease area is Anjar in 1.25km.The main connectivity of the lease area for transportation is NH-49 (Keonjhar Road) at 1.25 km. The nearest railway station from the quarry lease area is Kendhujhargarh at 9.67 km. The study area falls under Seismnic zone-II. There are no National parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Tiger/Elephant reserves present within 10km of the applied mine lease area. Nearest reserves forest is Gandhamardan Protected forest located at 2km away from the project site.

10. **Topography and Drainage**: The quarry area over 6.0 ha. is undulated terrain. This mining area is confined with Non- Forest Government land. Drainage system in the region is dendritic. There is no human settlement within the area. No stream is passing through the lease. The mine drainage will be controlled by construction of garland drains along the lease periphery and settling tanks. OB dump location has been selected up gradient side of the lease so that drainage would not pass through the dumping area. The mine drainage ultimately disposed off to the nearby river located in the northeast

11. **Baseline details:** Baseline study was carried out during March 2021 to May 2021.The results are the following.

    a) Air Environment: Ambient air quality of the study area has been monitored at 8 locations for 12 air quality parameters. The AAQ analysis indicates that the concentration of PM_{10} varied from 46 to 66 µg/m^3, PM2.5 from 25 to 58 µg/m^3, SO_2 from <4 to <8.8 µg/m^3, NOx from <9 to <13.9 µg/m^3.

    b) Surface water: pH values varied between 6.9 to 7.1 while Dissolved Solids varied from 86 to 93 mg/L, Dissolved oxygen varies from 7.1 to 7.3 mg/L, BOD varied from 1.5 to

1.7 mg/L and Chloride values varied between 11 to 12 mg/L. Iron values varied from 0.24 to 0.27 mg/L, Manganese values varied from 0.01 to 0.02 mg/L. Sulphate values varied from 11.2 to 12.8 mg/L and Nitrate values varied from 1.2 to 2.2 mg/L. Zinc 0.10 to 0.11 mg/L. Total Coliform varies from 144 to 235 MPN/100 ml.

c) Ground water: pH values varied between 7.2 to 7.4 while Dissolved Solids varied between 182 to 196 mg/l and total hardness varied from 86 to 92 mg/l. Chloride values varied between 6.2 to 7.1 mg/l. Calcium values varied between 26.0 to 27.1 mg/l while Magnesium values varied between 5.2 to 6.5 mg/l, Sulphate values varied from 2.3 to 2.8 mg/l and Nitrate values varied from 3.2 to 3.8 mg/l. Zinc values < 0.0.05 mg/l & Boron <0.01 mg/l.

d) Soil environment: Soil of the study area is acidic in nature. The bulk density of soil samples varies from 1.42 to 1.6 gm/cm^3, while porosity varies from 40.36 to 42.1 %. The pH of the soil samples ranged from 6.6 to 7.1. Nitrogen content ranged from 0.06 % to 0.96 %. Potassium content ranged from 0.12 % to 0.19%.

e) Noise environment: Noise monitoring was carried out at 8 locations as per the standard prescribed by CPCB. Noise level monitoring was carried out continuously for 24 hours at one hour interval starting at 06:15 hrs to 05:15 hrs next day once in a month for 3 months during the study period, at all locations. Average Noise level varies from 46.9 to 51.5 dB (A) during Day time and 38.8 to 43 dB (A) during Night time, which are below the prescribed limits of CPCB.

12. **Total production and reserves:** Total quarry lease area is 6.0 ha. of non-forest Government land, and the lease is going to work within the said area for 5 years. Average annual quantity of road metal is 25,200cum. The total geological reserves have been estimated as 3,23,799m^3. Mineable reserves are estimated at 2, 21,085m^3.

Year	Volume (m^3)	Production of Road Metal (m^3)	Waste (m^3)
1ST YEAR	42,000	25,200	16,800
2ND YEAR	42,000	25,200	16,800
3RD YEAR	42,000	25,200	16,800
4TH YEAR	42,000	25,200	16,800
5TH YEAR	42,000	25,200	16,800
TOTAL	**2,10,000**	**1,26,000**	**84,000**

13. **Mining method**: Mining operations will be carried out by semi-mechanized opencast mining method. The topsoil will be used for greenbelt development and mine waste will be stacked separately, will be used as road building material. Conventional method of mining will be adopted in lease 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°. Wagon drilling will be carried out & blasting will be done on contract basis. Deep & short hole blasting will be carried out with the

help of slurry as explosive and shock tube will be used as accessories for loosening the hard rock. A total of 84,000 m^3 of waste will be generated during this plan period. Mined out material will be loaded into the dumpers with the help of JCB and will be send to the nearby established crusher outside the lease area and finally the material of commercial use as per the demand of the market will be transported by Covered trucks / dumpers to its destination.

14. **Waste Generation and Disposal**: Total waste rejects of 84,000 m^3 of waste will be generated in Ambadahara Stone Quarry which will be dumped temporarily at the north-east corner part of the lease area over 1951 m2. And it will be subsequently utilized for road construction and maintenance during the plan period. During the plan period, a total of 1,26,000cum stone will be extracted.

15. **Other than Mineral rejects, Solid Waste will be developed from the quarry as per the table below.**

Sl. No.	Type	Quantity Kg/day	Disposal Method
i)	Biodegradable waste (organic)	9.18	Municipal bin including food waste
ii)	Non- Biodegradable waste (Inorganic)	6.12	APPCB authorized recyclers
Total		**15.3**	

16. **Water requirement:** As mentioned in EIA, water requirement is 5 KLD for Ambadahara Stone Quarry, from which 1 KLD of water will be required for drinking & domestic purposes. 2 KLD of water is suggested to be utilized for dust suppression and 2 KLD for plantation purposes. Water will be sourced from the nearby village through tankers and rainwater harvesting from the existing quarry.

17. **Wastewater management:** Domestic wastewater will be disposed into septic tank followed by soak pit. Soak pit will be cleaned periodically.

18. **Greenbelt**: A total of 345 no. of native species will be planted during the plan period in Ambadahara Stone Quarry. Rs.3,00,000/- is allocated for afforestation in environmental management plan. It is proposed to take-up plantation work during the first two years of operation of the quarry. During the plan period local species like Neem, Chakunda etc. is proposed to be planted at 2.5 m spacing.

19. **Traffic Density**: Traffic density study has been carried out on hourly basis for 24 hours continuously, once during the study period at 4 locations. It is observed that during the study period, traffic density is mainly higher during the daytime. Composition of vehicles reveals those heavy vehicles constitute-32.55 %, medium vehicles 16.50 %, light vehicles 19.60 % and others 31.35 %.

20. **Manpower:** Total manpower of 34 people will be required for the proposed project. Mine workers will be engaged from the nearby villages.

21. **Project cost:** Estimated cost of the proposed project Ambadahara Stone Quarry is Rs. 80, 00,000/-. Cost of Environment Management Plan (EMP) includes a capital cost Rs. 6.0 lakhs and recurring cost of Rs. 2.0lakhs as mentioned in EIA.
22. The Environment consultant **M/s EHS360 Labs Pvt Ltd (EHSL), Chennai - 68** along with the proponent made a presentation on the proposal before the Committee.

Considering the information furnished and the presentation made by the consultant **M/s EHS360 Labs Pvt. Ltd. (EHSL), Chennai - 68** along with the project proponent, the SEAC recommended for grant of Environmental Clearance with stipulated conditions as per **Annexure – A** and following additional condition:

a) 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.

b) Trees within mining lease area should not be cut and transplanted in safety zone.

ITEM NO. 02

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR PANKALABADI - B SAND QUARRY OVER AN AREA OF 12.682 ACRES/ 5.132HA. LOCATED IN VILLAGE - PANKALABADI, TAHASIL - DHARAKOTE IN DISTRICT – GANJAM OF SRI. KRUPASINDHU MUDULI - EC

1. This proposal is for Environmental Clearance of Pankalabadi - B Sand quarry over an area of 12.682acres/ 5.132Ha. located in village - Pankalabadi, Tahasil - Dharakote in District – Ganjam of Sri. Krupasindhu Muduli.
2. **Category:** As per the EIA Notification,2006 and its subsequent amendments, this project falls in category B under Schedule of activity 1(a)- Mining of Minerals.
3. The mining lease granted by Tahasildar, Dharakote, Ganjam has been auctioned and leased out to the successful bidder Sri. Krupasindhu Muduli, S/o – Jhuriya Muduli, At – Ramakrushna Nagar, 2nd Line, PO – Lochapada, Berhampur, Dist – Ganjam after obtaining statutory clearances. The mining lease will be granted on for long term basis for 5 years and the lease period will start from the date of registration of executed lease deed.
4. Letter of Intent has been issued by Tahasildar, Dharakote to the successful bidder Sri. Krupasindhu Muduli vide letter no.1088 dated 31.03.2022.
5. The Mining plan has been approved by the Deputy Director of Geology (Authorised Officer), O/o The Joint Director of Geology (S.Z), Berhampur vide memo no – 594/SZ on dated 02.05.2022.
6. The mining lease area is listed as an identified sand minor mineral in Page – 93, Serial no 3, in DSR of the Ganjam district.
7. **TOR details**: Terms of Reference (TOR) was granted by SEIAA, Odisha vide letter No. 5189 dated: 19.08.2022.

8. **Public hearing details:** The public hearing in respect of the above project was held on 25.11.2022 as per schedule and the venue in accordance with the EIA notification S.O.1533 (E) dt.14.09.2006 near to lease area. Issues raised during public hearing are air pollution control (water sprinkling, plantation in nearby school and roads, employment to locals, health care (health camp, blood donation camp etc. in nearby village namely Laxmipur.) drinking water (Installation of RO plant to nearby village) and maintenance of roads. The budget incurred for the action plan of public hearing is Rs.3,50,000.

9. **Location and connectivity:** The Pankalabadi - B Sand quarry is on Khata no- 319, Plot no – 1837 & 2231 of Kisam Nadi at village Pankalabadi in Dharakote Tahasil in Ganjam District of Odisha. The area under discussion is featured in Survey of India Topo Sheet No – E45A10 and is bounded between the Latitude -19° 36' 23.47" N to 19° 36' 27.53" N and Longitude – 84° 38' 20.24" E to 84° 38' 38.68" E. Village Pankalabadi is located at a distance of 1.06 km SSW from the lease area and Dharakote at a distance of 10 km NW direction, 58 km from the District Headquarters Ganjam and 145 km from the State Capital Bhubaneswar. Brahmapur Railway Station is the nearest railway station located at a distance of 38 kms from the lease area. Nearest Road Bridge is at a distance of 2.85 km East direction from the mining lease area. Unmetalled road from the lease area of 124 meter is connecting to Pankalabadi Village road and it is connecting to NH 59. NH- 59 is the nearest National Highway which is at a distance of 0.85 km S direction. The proposed area falls in seismic Zone – II as per IS – 1893 (Part-1) – 2002. The nearest river embankment located at a distance of 1.88km from the mining lease.

10. There is no National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Tiger/ Elephant Reserves (existing) is situated within 10km of the mining lease area.

11. **Replenishment study:** The volume of sand available after post monsoon is around 14,040 m3, which can be treated as safe extractable within the framework of the study after arrival of river level. Further volume of sand which can be extracted (Pre- monsoon survey date) is 23,130.72 m3. As it is a new mine no excavation has done in this year. But in post-monsoon the available area for mining is 13000 m2 and available sand is 14,040 m3 whereas, approved production capacity for the year is 12,000 m3.

12. **Baseline details:** One season data of ambient air quality, water quality, noise level, meteorology, soil and flora and fauna has been collected during pre-monsoon season March 2022 to May 2022.

    a) Air quality: PM10: - The maximum value for PM10 observed at project site location 70 µg/m3 and minimum value at Mangalpur Village 44.2 µg/m3. The 24 hours applicable limit for industrial, Residential Rural and Other Areas is 100 µg/m3. The maximum value for PM2.5 observed at project site location 44.1 µg/m3 and minimum value observed at Mangalpur Village 26.0 µg/m3. The 24 hours applicable limit for industrial, Residential Rural and Other Areas is 60 µg/m3. The maximum value for SO2 observed at project site location 11.3 µg/m3 and minimum value observed at Damodarpalli Village 5.1 µg/m3. The 24 hours applicable limit for industrial, Residential Rural and Other Areas is 80 µg/m3. The maximum value for NO2 observed at project site location 19.6 µg/m3 and minimum value observed at Damodarpalli Village 7.3 µg/m3.

The 24 hours applicable limit for industrial, Residential Rural and Other Areas is 80 µg/m3. The maximum value for CO observed at Laxmipur location 1.07 mg/m3 and minimum value observed at Baharhaguraha Village 0.43 mg/m3. The 24 hours applicable limit for industrial, Residential Rural and Other Areas is 4 mg/m3.

b) Ground Water -The analysis results of ground water samples showed: the pH in range of 7.06- 8.07 which are with the specified standard limits of 6.5 to 8.5. Color and turbidity of the samples < 5.0 Hazens and <1.0 NTU respectively. The total hardness of the samples ranged from 358.8 mg/l – 400.89 mg/l. Calcium and magnesium concentrations ranged from 55 mg/l -71.1 mg/l and 29.92 mg/l –46.8 mg/l respectively. The total dissolved solids of the samples ranged from 568 mg/l – 746.8 mg/l. The TDS values are within the stipulated 2000 mg/l. Range of chlorides and sulphates concentrations ranges from 110.3 mg/l- 152.4 mg/l and 39.6 mg/l – 53.46 mg/l respectively. Fluoride concentration ranged from 0.32 mg/l – 0.44mg/l and is found to be within the permissible limits. Iron concentrations in ground water varied from 1.11-1.32 mg/l. Zinc levels varied from 0.55-0.81 mg/l respectively. Aluminium concentration in ground water is <0.02mg/l at all locations.

c) Surface Water- The analysis results indicate that pH and total coliform of the Surface water was found to be in range of 7.5 – 8.2 and 160 - 340 MPN/100ml.

d) Soil Status- It has been observed that the pH of the soil in the study area ranged from 7.01 to 7.83. The electrical conductivity was observed to be in the range of 347.28 µmhos/cm to 387.0 µmhos/ cm. The total nitrogen values range between 106.4 to 179.4 mg/kg. The phosphorus values range between 42.3 to 56.08 mg/kg, indicating that the phosphorus content in the study area falls in less to medium category. The potassium values range between 186.3 – 227.3 mg/kg

e) Noise study: The daytime (Leqday) noise levels are observed to be in the range of 46.4 –54.6 dB(A) which are within the prescribed limit of 55 dB(A). The maximum noise level of 54.6 dB (A) was observed at project site and the minimum noise level of 46.4 dB(A) was observed at Village Damodarpalli during the study period. It is observed that the day time noise levels are in accordance to the prescribed limit of 55 dB (A). The nighttime (Leqnight) Noise levels are observed to be in the range of 34.8 – 43.8 dB(A) Which are within the prescribed limit of 45 dB(A). The maximum noise level of 43.8 dB (A) was observed at project site and the minimum noise level of 34.8 dB (A) at Village Damodarpalli during the study period. It has been found that the night time noise levels are in accordance to the prescribed limit of 45 dB (A)

13. **Reserves and total production**: As estimated, total geological reserves is 54,229.2 cum and total mineable reserve is 38551.2 cum/annum. Extractable mineable reserve is 23130.72 cum. The proposed production is 16,000 m3 per year and 80,000 m3 for five years.

14. **Mining method**: The sand will be excavated by open cast manual method and thickness of sand deposit for mining is taken as 1.0m. Handpicks and spade axe will be used by laborers for extracting & loading of sand. Keeping in view of the market demand and resource

availability in respect of reserves, proposed sand quarry is scheduled to produce @ 16000 cum/year for the plan period.

15. **Water requirement**: Water requirement for the project will be 3 KLD. Water required in the project will be for drinking purpose and dust suppression, which will be sourced from water tanker. NOC will be obtained from Gram Panchayat.

16. **Mine Drainage**: The entire deposits will be protected by making barrier around the lease boundary. Mining will be done above the water level of river. Anything accumulating inside the quarry due to occasional rain will be allowed to percolate into the quarry floor.

17. **Greenbelt**: Greenbelt will be developed in the buffer zone of mine lease area and village haulage roads side also. It is proposed for planting 250 saplings suitable per annum by the lessee in vicinity of the riverbank and haulage road side. Plantation shall be done with suitable local species like teak, mango, Jammu, jhaun, neem etc. per year and along the approach road during the plan period.

18. **Manpower**: Employment Generation from the project is 23 nos. of people. Indirect employment through creation of shops/ stalls, hired vehicles, etc. also, can be generated to full fill the day-to-day requirements of the mining personals.

19. **Project cost**: The total project cost is Rs. 50 Lakhs only. EMP cost includes capital cost of 4.70 Lakhs and recurring cost of 2.35 Lakhs.

S. No.	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
i)	Air pollution Control: Dust Suppression/ Water Sprinkling	30,000	1,00,000
ii)	Road Maintenance	50,000	60,000
iii)	Greenbelt	40,000	25,000
iv)	Personal Protective Equipment	-	20,000
v)	Environmental monitoring	-	30,000
vi)	Addressal of Public Hearing issues	3,50,000	-
Total		4,70,000/-	2,35,000

20. **Environment Consultant**: The Environment consultant **M/s Parivesh Environmental Engineering Services (PEES), Lucknow - 22** along with the proponent made a presentation on the proposal before the Committee.

Considering the information furnished and the presentation made by the consultant, **M/s Parivesh Environmental Engineering Services (PEES), Lucknow - 22** along with the project proponent, the SEAC decided to take the decision on the proposal after receipt of the following from the proponent

i) Pankalabadi - A sand quarry is coming within 500-meter distance of the Pankalabadi - B sand quarry. The Tahasildar intimated that Pankalabadi - A sand quarry is already closed and no auction to be done in future for mining activity in Pankalabadi - A sand quarry. An undertaking to be submitted for closure of Pankalabadi - A sand quarry mentioning in future no auction to be done and no more mining activities will be carried out in the said quarry.

ii) KML file shows already mining activity has been carried out in Pankalabadi - B sand quarry. The Tahasildar has intimated that they have already obtained EC earlier for mining activity. Copy of earlier EC and compliance to earlier EC conditions certified by Tahasildar to be submitted.

iii) Revised replenishment study along with all the details.

iv) Standard Operating Procedures (SOP) for transportation of Sand in the road passing through village.

v) In the public hearing, people raised demand for maintenance of 7.7 km road through which sand is transporting. Detailed proposal for maintenance of 7.7 km road through which sand is transporting is to be submitted.

ITEM NO. 03

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR LAXMIPUR SAND QUARRY OVER AN AREA OF 12.959 ACRES/ 5.244 HA. LOCATED IN VILLAGE - LAXMIPUR, TAHASIL - DHARAKOTE IN DISTRICT – GANJAM OF SMT. KALPANA NAYAK – EC.

1. This proposal is for Environmental Clearance of Laxmipur Sand quarry which is a sand mining project over an area of 12.959 Acres/ 5.244ha. located in Village - Laxmipur, Tahasil - Dharakote in District – Ganjam of Smt. Kalpana Nayak.

2. **Category:** As per EIA notification 2006 and subsequent amendments, the project falls under B1 category item 1(a)-Mining of Minerals in the Schedule of EIA Notification, 2006 & Subsequent amendments thereof. The project is coming under B1 Category as the lease area is greater than 5.0 Ha.

3. The mining lease granted by Tahasildar, Dharakote, Ganjam has been auctioned and leased out to the successful bidder Smt. Kalpana Nayak, W/o – Narasingha Nayak, At/PO – Kalasandhapur, PS- Aska, Dist- Ganjam, Odisha after obtaining statutory clearances. The mining lease will be granted on for long term basis for 5 years and the lease period will start from the date of registration of executed lease deed.

4. Letter of Intent has been issued by Tahasildar, Dharakote to Kalpana Nayak vide letter no.1003 dated 29.03.2022 for a period of five years.

5. The Mining plan has been approved by the Deputy Director of Geology (Authorised Officer), O/o The Joint Director of Geology (S.Z), Berhampur vide memo no – 590/SZ on dated 02.05.2022.

6. TOR Details: Terms of Reference (TOR) was granted by SEIAA, Odisha vide letter no 5195 dated 19.08.2022.

7. The mining lease area is listed as an identified sand minor mineral in Page – 93, Serial no 4, in DSR of the Ganjam district. The sand quarry lies on riverbed Rushikulya.

8. Public hearing details: The public hearing in respect of the above project was held on 24.11.2022 as per schedule and the venue in accordance with the EIA notification S.O.1533 (E) dt.14.09.2006. Issues raised during public hearing are air pollution control, plantation and environment protection, tarpauline covers of transporting vehicles, damage of roads due to

plying of heavy vehicles, health facility, drinking water facility, irrigation facility, local employment and development. The budget incurred for the action plan of public hearing is Rs. 3,50,000 lakhs.

9. **Location and connectivity:** The Laxmipur Sand quarry is on Khata no- 189, Plot no –302 & 580 (P) of Kissam Nadi at village Laxmipur in Dharakote Tahasil in Ganjam District of Odisha. The area under discussion is featured in Survey of India Topo Sheet No – E45A10 and is bounded between the Latitude -19° 37' 06.32" N to 19° 37' 23.04" N and Longitude – 84° 37' 13.58" E to 84° 37' 20.96" E. The lease area is located at a distance of 0.71km from village Laxmipur and at a distance of 7 kms from Dharakote 52 kms from the District Headquarters Ganjam and 146 kms from the State Capital Bhubaneswar. Brahmapur Railway station is the nearest railway station located at a distance of 38 kms from the lease area. Nearest Road Bridge is at a distance of 1.62 km from the mining lease area. Metal road connecting to the lease area and is at distance of 0.18 km. SH – 7 is at 4 km and it is the nearest State highway. NH- 59 is the nearest National Highway which is at a distance of 1.3km. Nearest road bridge, river embankment, electric transmission line pole 1.62km, 120m and 710m respectively. The proposed area falls in seismic Zone – II as per IS – 1893 (Part-1) – 2002.

10. There is no National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Tiger/ Elephant Reserves (existing) is situated within 10km of the mining lease area.

11. **Baseline study:** One season data of ambient air quality, water quality, noise level, meteorology, soil and flora and fauna has been collected during pre-monsoon season March 2022 to May 2022.

    a) Surface Water: The analysis results indicate that pH and total coliform of the Surface water was found to be in range of 7.5 – 8.2 and 160 - 340 MPN/100ml.

    b) Ground Water- The analysis results of ground water samples showed the pH in range of 7.06- 8.07 which are with the specified standard limits of 6.5 to 8.5. Colour and turbidity of the samples < 5.0 Hazens and <1.0 NTU respectively. The total hardness of the samples ranged from 358.8 mg/l – 400.89 mg/l.Calcium and magnesium concentrations ranged from 55 mg/l -71.1 mg/l and 29.92 mg/l –46.8 mg/l respectively. The total dissolved solids of the samples ranged from 568 mg/l – 746.8 mg/l. The TDS values are within the stipulated 2000 mg/l. Range of chlorides and sulphates concentrations ranges from 110.3 mg/l- 152.4 mg/l and 39.6 mg/l – 53.46 mg/l respectively. Fluoride concentration ranged from 0.32 mg/l – 0.44mg/l and is found to be within the permissible limits. Iron concentrations in ground water varied from 1.11-1.32 mg/l. Zinc levels varied from 0.55-0.81 mg/l respectively. Aluminium concentration in ground water <0.02mg/l at all locations.

    c) Air quality: The maximum value for PM10 observed at Pankalabadi mine site location 70 µg/m3 and minimum value for PM10 observed at Mangalpur Village 44.2 µg/m3. The 24 hours applicable limit for industrial, Residential Rural and Other Areas is 100 µg/m3. The maximum value for PM2.5 observed at Pankalabadi mine site location 44.1 µg/m3 and minimum value for PM2.5 observed at Mangalpur Village 26.0 µg/m3. The 24 hours

applicable limit for industrial, Residential Rural and Other Areas is 60 µg/m3. The maximum value for SO_2 observed at Pankalabadi mine site location 11.3 µg/m3 and minimum value for SO_2 observed at Damodarpalli Village 5.1 µg/m3. The 24 hours applicable limit for industrial, Residential Rural and Other Areas is 80 µg/m3. The maximum value for NO_2 observed at Pankalabadi mine site location 19.6 µg/m3 and minimum value for NO_2 observed at Damodarpalli Village 7.3 µg/m3. The 24 hours applicable limit for industrial, Residential Rural and Other Areas is 80 µg/m3. The maximum value for CO observed at project site location 1.07 mg/m3 and minimum value for CO observed at Baharhaguraha Village 0.43 mg/m3. The 24 hours applicable limit for industrial, Residential Rural and Other Areas is 4 mg/m3.

d) Noise study: The daytime (Leqday) noise levels are observed to be in the range of 46.4 – 54.6 dB(A) which are within the prescribed limit of 55 dB(A). The maximum noise level of 54.6 dB (A) was observed at Pankalabadi mine site and the minimum noise level of 46.4 dB(A) was observed at Village Damodarpalli during the study period. It is observed that the day time noise levels are in accordance to the prescribed limit of 55 dB (A). The night time (Leqnight) Noise levels are observed to be in the range of 34.8 – 43.8 dB(A) Which are within the prescribed limit of 45 dB(A). The maximum noise level of 43.8 dB (A) was observed at Pankalabadi mine site and the minimum noise level of 34.8 dB (A) at Village Damodarpalli during the study period. It has been found that the night time noise levels are in accordance to the prescribed limit of 45 dB (A).

12. **Replenishment study**: The volume of sand available after post monsoon is around 10,406 m^3, which can be treated as safe extractable within the framework of the study after arrival of river level. Further volume of sand which can be extracted as on date (Pre- monsoon survey date) is 22,425 m^3. As it is a new mine no excavation has done in this year. But in post-monsoon the available area for mining is 12,100 m^2 and available sand is 10,406 m^3 whereas, approved production capacity for the year is 11,000 m^3.
13. **Total production and reserves**: The average production is proposed to be 11000cum/year and 55000 cum is the total production during the plan period. As estimated, total geological reserve of sand is 54502.5 cu.m/annum and mineable reserves is 37425 cum per annum. Extractable mineable reserve is 22425 cum.
14. **Mining method**: The mode of the deposit, geomorphology of the area and its hydrological condition are some of the factors that favours the open cast method of mining. Mining will be done with manual method transported from Laxmipur sand bed to the users/ destination through trucks /tractors. The mining will be undertaken on single shift basis. The local man power shall be engaged in the mine. No benching will be necessary. One quarry with a depth of 1.0 m will be developed. The floor level at the end of the five year plan period of the concession will be 43 m RL.
15. **Water requirement**: Total water requirement for the project will be 3.0 KLD. Water required in the project will be for drinking purpose and dust suppression, which will be sourced from water tanker. NOC will be obtained from Gram Panchayat.

16. **Mine Drainage**: The entire deposits will be protected by making barrier around the lease boundary. Mining will be done above the water level of river. Any water accumulating inside the quarry due to occasional rain will be allowed to percolate into the quarry floor.

17. **Power Requirement**: Power requirement will not be required for operations as the mining will be worked out during daytime only. Minimal power required for office shall be taken from the General Electric supply of the area.

18. **Greenbelt**: Plantation will be done on the bank of the river.250 plants are to be planted on the riverbank to protect the river bank side from erosion & protection of the environment. Sampling of trees like Karanja, Nim, Banyan, Peepal, Mahaneem, Arjun Kadamba, Mango, Jackfruit, Jamun, Kendu etc to be planted

19. **Employment Generation**: For the proposed project is 23 nos. of people is required as manpower. Indirect employment through creation of shops/ stalls, hired vehicles, etc. also can be generated to full fill the day-to-day requirements of the mining personals.

20. **Project cost**: The estimated cost of the project is Rs. 50.00 Lakhs. A budget of Rs 4.7 lakhs as capital cost and Rs. 2.35 lakhs as recurring cost is allocated for environment protection measures.

S. No.	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
i)	Air pollution Control: Dust Suppression/ Water Sprinkling	30,000	1,00,000
ii)	Road Maintenance	50,000	60,000
iii)	Greenbelt	40,000	25,000
iv)	Personal Protective Equipment	-	20,000
v)	Environmental monitoring	-	30,000
vi)	Addressal of Public Hearing issues	3,50,000	-
Total		4,70,000/-	2,35,000

21. The Environment consultant **M/s Parivesh Environmental Engineering Services (PEES), Lucknow - 22** along with the proponent made a presentation on the proposal before the Committee.

Considering the information furnished and the presentation made by the consultant, **M/s Parivesh Environmental Engineering Services (PEES), Lucknow** along with the project proponent, the SEAC decided to take the decision on the proposal after receipt of the following from the proponent:

a) Declaration/Undertaking from the concerned Tahasildar that the road is connecting to lease.

b) Revised Replenishment Study Report.

c) Proposal for maintenance of transportation road by the lessee.

ITEM NO. 04

PROPOSAL FOR ENVIRONMENTAL CLEARANCE FOR KRUSHNANDPUR PAIKA NADI SAND SAIRAT OVER AN AREA OF 12.65 ACRES OR 5.12 HECTARES UNDER TIRTOL TAHASIL OF JAGATSINGHPUR DISTRICT OF SRI DAMODAR MOHAPATRA - EC

1. This proposal is for Environmental Clearance of Krushnandpur Paika Nadi Sand Sairat over an area of 12.65 acres or 5.12 hectares under Tirtol Tahasil of Jagatsinghpur District of Sri Damodar Mohapatra.
2. **Category:** As per the EIA notification 2006 and its subsequent amendment, proposed project falls in category B1 under Schedule of item 1(a)-Mining of Minerals.
3. The lease area of Paika Sand Bed over an area of 12.65 acres (5.12 ha.) is located in Village-Krushnandapur, Tahasil–Tirtol, in district Jagatsinghpur of Odisha. Sri Damodar Mohapatra is selected as successful bidder of the Sand Bed for a lease period of 5 (five) years from 2020-21 to 2024-25.
4. Letter of Intent has been issued by Tahasildar, Tirtol to Damodar Mohapatra vide letter no.472 dated 24.02.2021 for a period of five years.
5. The Mining plan has been approved for a period of five years i.e. 2020-21 to 2024-25 by The Deputy Director of Geology, Bhubaneswar. Vide letter no – 7958 DG, on dated 04.12.2020 in favour of Tahsildar, Tirtol. After approval the said lease has granted to Sri Damodar Mohapatra on 30.11.2020.
6. The District Survey Report for River Sand in respect of Jagatsinghpur 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, Jagatsinghpur on dated 28.01.2020.
7. **TOR Details**: Terms of Reference (TOR) was granted by SEIAA, Odisha vide letter no 1503 dated 17.06.2021.
8. **Public hearing details**: The public hearing in respect of Environmental Impact Assessment for Krushnandapur Paika Nadi Sand Sairat of Sri Damodar Mohapatra over an area of 5.12Ha. under Tirtol Tahasil in Jagatsinghpur district, Odisha was conducted on 27.04.2022 at 10.30 A.M at Paikakula playground of Krushnanadpur village in Jagatsinghpur District. Issues raised during Public hearing are employment generation, development of road, provision towards repair and maintenance of village tube wells in Krushnanandapur Village, provision of assistance to Krushnanandapur Primary School, pollution control measures including operation of water sprinkling system and plantation. Total expenses to be incurred for the action plan towards public hearing issues is Rs.7 lakhs.
9. **Location and connectivity:** The said lease is located in survey of India Topo Sheet No. 73 L/7 (F45U/3), bounded by Latitude: 21°21’49.70” to 21°21’57.00” N, Longitude: 86°15’24.10” to 86°15’34.70” E bearing Khata no 1743 and plot no 72/4147. The area over 5.12 ha is a non-forest Govt. land of Nadi kissam, having ground elevation of 29 mRL. Lease area is accessible from Krushnandapur village at 0.50 km, which is well connected to Main roads and Highways.

The nearest major railway station is Jhankadsarala Road at distance 6km from the lease area. Nearest National Highway is NH – 16 at a distance of 47 Km. Nearest road bridge and river embankment is 600 m and 450 m respectively.

10. 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.

11. Topography and drainage: The sand bed is on the River Mahanadi. The Krushnandpur Paika Nadi Sand Sairat deposit represents a gently sloping to almost flat terrain with highest altitude of 29 mRL. The general slope is towards east. Vegetation is scanty with small bushes existing in the auction hold area. There is no human settlement within the area. The drainage of the district is mainly controlled by rivers like Mahanadi, Devi, Biluakhai & Paika. During rainy season the river water carries sand which is formed due to disintegration of rock bodies along with other suspensions. After recession of the water flow the sand gets deposited in the locations where there is less energy. The river Mahanadi flowing from west to east and forming the northern boundary of the district forms the main drainage system in the district. Besides the river Devi, a tributary to Kathajori and flowing north-northwest to south-southeast with a meandering course also forms a drainage system in the district.

12. **Baseline study**: The baseline information on micro-meteorological data, ambient air quality, water quality, noise levels and soil quality have been generated for the period of October to December 2021.

PERIOD	**October to December 2021**	**Applicable Standards**
AAQ PARAMETERS AT 7 LOCATIONS	PM2.5 – 18.9 to 33.6 µg/cu.m	60 µg/cu.m
	PM10 – 37.8 to 67.3 µg/cu.m	100 µg/cu.m
	SO2 – 5.7 to 10.8 µg/cu.m	80 µg/cu.m
	NOx – 11.8 to 26.3 µg/cu.m	80 µg/cu.m
Ground water Quality at 6 Location	pH – 6.8 to 7.5	6.5 to 8.5
	Total Hardness – 80 to 92 mg/l	600 mg/l
	Chloride - 6 to 12 mg/l	250 mg/l
	Fluorides – 0.18 to 0.20 mg/l	1.5 mg/l
	TDS – 160 to 190 mg/l	1000 mg/l
	Heavy metals (Cd <0.001, As <0.01, Hg<0.0001) mg/l	Heavy metals (Cd <0.003, As <0.01, Hg<0.001) mg/l
Surface water at 4 locations	pH – 7.1 to 7.4	
	Dissolved Oxygen – 5.9 to 6.5 mg/l	
	Biochemical Oxygen Demand – 1.5 to 2.8 mg/l	
	Chemical Oxygen demand – 8 to 20 mg/l	

Noise at 7 locations	Day (dBA Leq) 42.3 to 52.3	55
	Night (dBA Leq) - 29.8 to 43.1	45
Soil Quality at 4 locations	pH – 6.95 to 7.3, Potassium – 64.5 to 94.1 Kg/ Ha, Phosphorous – 50 to 60.9 mg/ kg, Organic Carbon % - 0.28 to 0.39, Electrical Conductivity- 55 to 75 ms/Cm	

13. **Replenishment study**: Replenishment study for pre & post monsoon period on December'2020 and May'2021 using volumetric method as per Envorcement and Monitoring Guidelines for Sand Mining. 2020). The Geologoical Reserve of the Area is 43552 cum and Mineable Reserve of the Area is 33420 cum. Annual Production as per Mining Plan is 15360 cum. Sections considered is 10m x 10m (3 nos CS and 1 no LS). Elevation in Pre monsoon is 16mRL and Elevation in Post monsoon is 17mRL. Annual rate of Replenishment – 32760cum.
14. **Total production and reserves**: The lessee is going to work within the said area for 5 year from 2020-21 to 2024-25 with a maximum production of 15,360 cum per annum with a total production of 76,800 cum during plan period. As estimated, the geological reserve is 43,552 cum and Mineable Reserve is 33,420 cum.
15. **Mining method**: The method of excavation of sand from Krushnandapur Sand quarry will be manual open cast mining. The mode of the deposits, geomorphology of the area and its hydrological condition are some of the factors that favour the open cast method of mining. In this deposit, the mining is done by dry-pit method i.e., Sand will be excavated within the active channel on dry intermittent or ephemeral stream beds. The excavator is used for removal of sand from the pits. The sands are extracted, loaded, and transferred from pits to the users through trucks and tractors.
16. **Water requirement**: Total water requirement will be approx, 5 KLD for different purposes like domestic, dust suppression, plantation purposes. The water will be sourced by the lessee by tanker.
17. **Traffic study**: The V/C ratio on the Paika road connecting the Syphone Bridge which is connect to Tarapur Road is 0.240. However, with the commencement of mining activity maximum 8 no. of trucks/tractor will carry sand from the lease area and 4 cycles for transportation of employees which will have additional PCU load of 11.4 per hour. So, with the additional PCU load due to mining operation the V/C ratio will remain as 0.249 with LoS B.
18. **Greenbelt**: It is proposed for planting 250 saplings of suitable species per annum by the lessee in vicinity of the riverbank as avenue plantation which will be undertaken in consultation with the concerned authority. There is the proposal for development of green belt towards both sides of the riverbank. The riverbank plantation will be carried out in the 1st year of mining operation.
19. **Manpower requirement**: 25 Nos. (Out of which 2 nos. are skilled, 4 nos. are semi-skilled and 15nos are unskilled) of persons are required as manpower for the proposed project.
20. **Project cost**: Estimated cost of the project is 80 lakhs. Budget for EMP cost is 3 lakhs.

21. **Environment Consultant**: The Environment consultant **M/s Kalyani Laboratories Pvt Ltd (KLPL), Bhubaneswar** along with the proponent made a presentation on the proposal before the Committee.

Considering the information furnished and the presentation made by the consultant, **M/s Kalyani Laboratories Pvt Ltd (KLPL), Bhubaneswar** along with the project proponent, the SEAC decided to take the decision on the proposal after receipt of the following from the proponent

i) How it has been concluded that the depth of sand deposit is 1 meter?

ii) Exact length of the bridge.

iii) Revised Replenishment Study Report using Drone method covering details of RL, cross sections taken, grid position etc.

ITEM NO. 05

PROPOSAL FOR ENVIRONMENTAL CLEARANCE FOR MANGARAJPUR MAHANADI SAND QUARRY OVER AN AREA OF 14.00 ACRES OR 5.66 HA. HAVING KHATA NO.641(A.A.A), PLOT NO. 3720/3749 IN VILLAGE MANGARAJPUR UNDER BARAMBA TAHASIL OF CUTTACK DISTRICT OF SRI HARA SENAPATI - EC

1. This proposal is for Environmental Clearance of Mangarajpur Mahanadi Sand Quarry over an area of 14.00 Acres or 5.66 Ha having Khata No.641(A.A.A), Plot No. 3720/3749 in village Mangarajpur under Baramba Tahasil of Cuttack District of Sri Hara Senapati.

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.

3. **TOR Details**: Terms of Reference (TOR) was granted by SEIAA, Odisha vide letter no 1346/SEIAA dated: 24.05.2021.

4. Earlier EC was granted by SEIAA, Odisha vide letter no 4404 dated 17.08.2015.

5. Mining plan was approved by Deputy Director of Geology, Bhubaneswar. Vide letter no – 7431 DG, on dated 12.11.2020.

6. This is a new project and the lease has been granted to successful bidder Sri Hara Prasad Senapati by the Tahasildar, Baramba vide letter no- 05, dated 01.01.2021.

7. The said lease is an identified sairat source in District Survey Report, Cuttack in Pg – 54, Sl.no. - 90 prepared by Collector, Cuttack.

8. **Public hearing details**: Public hearing was conducted on 14.09.2022 at Village -Mangarajpur under Tahasil Baramba of Cuttack district. Issues raised during public hearing were dust pollution, noise pollution, fixed time limit for movement of sand transportation vehicles, sand should be lifted from exact location, sand transportation vehicles shouldn’t move through social forest area and near school area and a particular road should be used for sand transportation. Budget earmarked for action plan of public hearing is Rs. 5 Lakhs.

9. **Location and connectivity:** Mangarajpur Mahanadi Sand Quarry is located in village Mangarajpur under Baramba Tahasil of Cuttack district, Odisha consisting over an area of 14.00 Acres/5.66 Hectares. The proposed lease area is featured in Survey of India toposheet no. 73H/7 and bounded between the Latitudes of N20°22'26.9" to N20°22'35.5" and Longitudes of E85°18'39.6" to E85°18'47.7" bearing Khata No.641, Plot No.3720/3749. The proposed lease area is located at a distance of 60 Km from the district headquarters Cuttack. The nearest railway station is Begunia Railway Station which is about 24.5 km from the mine lease area. The nearest airport is Biju Pattnaik International Airport, Bhubaneswar at about 55 km from the mining site. Nearest river embankment, electric transmission pole and road bridge is 2.4 kms,700 m and 12km respectively. As per Seismicity Map of India, the project location/study area falls in Zone II

10. **Topography and drainage:** The general topography of the area around the mine site is general plan agricultural land along the river. The area constitutes almost alluvial plain without any conspicuous topographical features and forms a part of the vast Indo-Gangetic plain. The proposed area is undulating. The flow rate of the river varies with the quantity of precipitation in the catchment area. The lease area surrounded mostly with agricultural lands. There is no major impact of mining on the topography of the area. The mining lease area in riverbed will be replenished with sediments after monsoon and the area which in agriculture field will be reclaimed after mining.

11. **Replenishment study:** The present date survey by using UAV/Drone indicates the mineable sand deposit is around 26504cum. As per Sustainable Sand management guidelines potential sand deposits may be identified and Replenishment study may be done in regular intervals. Besides 60% of the above computed mineable reserve as above has been taken as available mineable reserve over the area as per MoEF Notification dated 25.07.2018. Maximum of 26504Cu.m of sand per annum may be allowed for mining activities. 60% of the mineable reserve is 15902cum. The maximum extraction limit as per sustainable sand mining Rule of MoEF Guideline is 15902cum.

12. **Baseline details:** The baseline data was collected for the pre-monsoon season i.e. Oct-21 to Dec 2021 in the 10 km study area results.

    a) Air Quality Results - The maximum value for PM2.5 was observed, as 25.4 µg /m3 at Village- Ogalpur (A3) while 24 hours applicable limit is 60µg/m3 mixed use areas. The area observes average PM2.5 concentration in the range of 11.3-24.4µg/m3 with the lowest concentration of 11.3 µg/m3 recorded at Village-Ogalpur Area (A1). The maximum value for PM10 was observed, as 63.5µg/m3 at village- Ogalpur(A5) while 24 hours applicable limit is 100µg/m3 for mixed use areas. The area observes average PM10 concentration in the range of 34.2 -63.5µg/m3 with the lowest concentration of 34.2 µg/m3 recorded at Village-Ogalpur (A3).

    The maximum value for SO2 was observed, as 18.3µg/m3 at Village- Ogalpur(A3) while 24 hours applicable limit is 80µg/m3 for industrial and mixed-use areas. The area observes average SO2 concentration in the range of 5.7- 18.3µg/m3 with the lowest concentration of 5.7 µg/m3 recorded at Village- & Ogalpur Area (A1). All the villages have observed value well under the prescribed limit.

The maximum value for NOX was observed, as 19.5 µg/m3 at Village-Mangarajpur(A2) while 24 hours applicable limit is 80µg/m3 for industrial and mixed use areas. The area observes average NOX concentration in the range of 8.4- 19.5-µg/m3 with the lowest concentration of 8.4 µg/m3 recorded at Village- Ogalpur(A5). All the villages have observed value well under the prescribed limit.

b) Ground water Quality results - Total 5 Groundwater samples and 5surface water samples were analyzed and concluded that: The ground water from all sources remains suitable for domestic purposes as all the constituents are within the limits prescribed by drinking water standards by Indian Standards IS: 10500.

c) Surface water Quality results analysis it is evident that most of the parameters of the samples comply with IS-2296: 1992 Category “C" standards of CPCB, indicating their suitability for Drinking water source after conventional treatment and disinfection.

d) Soil Samples collected from identified locations indicate the soil is Loamy type and the pH value ranging from 6.37 to 6.68 which indicating that soil samples are neutral in nature.

13. **Reserves and total production:** As estimated geological reserve and mineable reserve of the proposed project is 28931 and 24679 cum. Annual production of the proposed project is 3000 cum/annum.

Year	Production (m3)
1st Year	3,000
2nd Year	3,000
3rd Year	3,000
4th Year	3,000
5th Year	3,000
Total	15,000

14. **Method of mining:** The project is a new mine and lies on the bed of Mahanadi. The project for production of Sand (minor minerals) from Mangrajpur Sand Quarry which has been proposed for a total production of 15,000 Cu.m during the plan period. The open cast manual method and transportation through dumpers and tractors. No mining activity will be undertaken during the monsoon season. So, the material will be replenished during the monsoon season every year. The benching pattern is not required for sand mining. The maximum depth of mining will be of 1m or up to water table which is less. No drilling & blasting will be performed for production requirement.

15. **Water requirement:** Total water requirement approx, 5 KLD will be required for different purposes like Domestic, Dust suppression, plantation purposes & sourced from as per the availability.

16. **Power/fuel requirement:** Minimal power required for office shall be taken from the General Electric supply of the area. Dumpers, tractors will be used for transportation. So, the approximate quantity of the fuel used per day is 0.014 KLD diesel is required as fuel.

17. **Green Belt**: It is proposed to have plantation on both sides of the roads as greenbelt to provide cover against dust dissemination. Riverbanks will be strengthened by way of plantation on the banks. Plantation will also be carried out as social forestry programme in village, school and the areas allocated by the Panchayat/State authorities. Native plants and other local species will be planted. A suitable combination of trees that can grow fast and have good leaf cover shall be adopted to develop the greenbelt. It is proposed to plant 250 Numbers of native species will be planted during the 5-year plan period.

S. No.	Saplings to be planted	Species	Place of Plantation
i)	50	Neem, Mango, Peepal, Shisham, Sirish, Babool, Chakunda	Along the roads, in schools and public building and other social forestry programme
ii)	50		
iii)	50		
iv)	50		
v)	50		
Total	250		

18. **Manpower requirement:** In the mine for total production of 3,000 cum/annum of River Sand and 6 nos. of person are to be employed daily. The indirect employment opportunities for hired vehicles, etc. also can be generated to full fill the day-to-day requirements of the mining personals.
19. **Project Cost**: The project proponent will incur a total cost of Rs. 290.00 Lakhs sand may vary from place to place and with magnitude of the sand mining. EMP cost includes a capital cost of Rs. 14,50,000 and recurring cost of Rs. 5,80,000.

Particulars	Capital Cost	Recurring Cost
Environmental Monitoring	3,00,000	1,00,000
Plantation	2,00,000	20,000
Dust Suppression	5,00,000	4,50,000
Others (Pollution Control Equipment)	4,50,000	10,000
Total	14,50,000	5,80,000

20. The Environment consultant **M/s EHS360 Labs Pvt Ltd (EHSL), Chennai - 68** along with the proponent made a presentation on the proposal before the Committee.

Considering the information furnished and the presentation made by the consultant, **M/s EHS360 Labs Pvt Ltd (EHSL), Chennai - 68** along with the project proponent, the SEAC decided to take the decision on the proposal after receipt of the following from the proponent:

i) Revised Replenishment Study along with all the details as there is net loss of replenished sand in the present replenishment study report.

ITEM NO. 06

PROPOSAL FOR ENVIRONMENTAL CLEARANCE FOR BAITARANI RIVER SAND BED, JAMBHARA OVER AN AREA OF 8.62 HA. IN VILLAGE JAMBHARA, TAHASIL HATADIHI, KEONJHAR DISTRICT OF SRI GURUBRATA KHANDAI - EC

1. This proposal is for Environmental Clearance of Baitarani River Sand Bed, Jambhara over an area of 8.62 Ha. in Village Jambhara, Tahasil Hatadihi, Keonjhar district of Sri Gurubrata Khandai.

2. **Category**: This project falls under Category "B1" under Schedule of Item 1(a)-Mining of Minerals as per the EIA Notification, 2006 and its amendments thereof.

3. Letter of Intent has been issued by Tahasildar, Hatadihi to Successful Bidder Sri Gurubrata Khandai vide letter no.6411 dated 25.09.2020.

4. The Mining plan has been approved for a period of five years i.e. 2020-21 to 2024-25 by The Joint Director of Geology, Keonjhar vide letter no – 2398/CZ, on dated 30.07.2020 in favour of Tahsildar, Hatadihi.

5. **TOR details**: Terms of Reference (TOR) has been issued by State Impact Assessment Authority (SEIAA) Orissa vide File No. 59914/57- MINB1/01-2021; dated 28.02.2021.

6. **Public hearing details**: Public Hearing was held on 13.05.2022 (11:00 am) at Jambhara village of Keonjhar district. Issues raised during public hearing are air pollution control, road repair and plantation. Budget earmarked for action plan of public hearing is Rs. 12 lakhs.

7. **Location and connectivity:** The said lease is located in survey of India Topo Sheet No. 73 K/4, bounded by Latitude: 21002'19.78" to 21002'36.93" N, Longitude: 86013'58.07" to 86014'07.93" E bearing Khata No-237 Plot No-1689/2080, Kisam Nadi. The Lease area is accessible from Jambhara-Hubaleswar village road at a distance of 0.25 km, which is well connected to Highways. Nearest National Highway at a distance of 11.27 Km (SSE) and State Highway SH-53 at a distance of 11.75 KM (NNE). The nearest railway station is Baitarani Railway Station at distance 5.74 km and Biju Patnaik International Airport is at a distance 97.19km from the lease area. Nearest city is Byasanagar at 14.32 km, 92.93km from District Headquartes, Keonjhar. Nearest Road Bridge is at 1.5km and electric transmission line is 0.25km.

8. **Topography and drainage:** The general topography of the area around the mine site is general plan agricultural land along the river. The area constitutes almost alluvial plain without any conspicuous topographical features and forms a part of the vast Indo-Gangetic plain. The proposed area is undulating. The flow rate of the river varies with the quantity of precipitation in the catchment area. The lease area surrounded mostly with agricultural lands. There is no major impact of mining on the topography of the area. The mining lease area in riverbed will be replenished with sediments after monsoon and the area which in agriculture field will be reclaimed after mining. In general, the drainage pattern is of both dendritic and radial types of the drainage.

9. **Replenishment study**: For the said project replenishment study has been done by UAV/Drone survey (volumetric survey) method. Presently, for the purpose of replenishment

study, two surveys were carried out for data acquisition, the first one for pre-monsoon data on 14.06.2022 and the second one for post monsoon data on 12.11.2022 by using UAV/Drone. Considering a common safe workable area of 21254.53 m^2, it is observed that replenishment of 891.5m^3 has been done with an average thickness of 0.04m. But, here it may be mentioned that the volume of sand available during post monsoon survey around 9345.883m^3, which can be treated as safe extractable within the framework of the study.

10. Baseline details:

a) Air quality: The monitoring results of ambient air quality were compared with the National Ambient Air Quality Standards (NAAQS) Prescribed by MoEFCC; GoI Notification dated 16.11.2009. The baseline levels of PM10 (38– 65µg/m³), PM2.5 (21– 47µg/m³), SO_2 (4 – 8.0 µg/m³), NO_2 (10.0– 15.0µg/m³). The parameters monitored at the project area as per NAAQ standards are found to be within limits. It may be observed that the all parameters at all stations are well within the limits prescribed by Central pollution control Board.

b) Noise levels: In Industrial areas daytime noise levels were about 52.0 dB (A) to 40.0 dB (A) during daytime and 40.0 dB (A) to 42.0 dB (A) night time, which is within prescribed limit by CPCB. In residential areas daytime noise levels varied from 51.0 dB (A) to 60.0 dB (A) and nighttime noise levels varied from 40.0 dB (A) to 48.0 dB (A) across the sampling stations. The field observations during the study period indicate that the ambient noise levels are well within the prescribed limit by CPCB (55 dB (A) Day time & 45 dB (A) Night time).

c) Surface water quality: The pH value ranges from 6.8 to 7.2 and within the limits (6.5 – 8.5) of IS 2296:1992. The sulphate content in the collected surface water ranges 3.2 mg/l to 5.0 mg/l. The chloride content in the collected surface water sample ranges from 9.5 mg/l to 11.0 mg/l. DO of the collected surface water sample ranges from 6.1 mg/l to 7.1 mg/l. BOD of the collected surface water sample ranges from 1.6 mg/l to 1.8 mg/l.

d) Ground water quality: The ground water results of the study area indicate that the pH range varies between 6.8 and 7.3. It is observed that the pH range is within the limit of IS 10500:2012. The acceptable limit of the chloride content is 250 mg/l and permissible limit is 1000 mg/l. The chloride content in the ground water for study area ranges between 7.0 mg/l – 10.5 mg/l. It is observed that all are well within the permissible limit of IS 10500:2012. The desirable limit of the sulphate content is 200 mg/l and permissible limit is 400 mg/l. The sulphate content of the ground water of the study area varies between 2.3mg/l – 3.1 mg/l. It is observed that all the samples are within the permissible limit of IS 10500: 2012

e) Soil quality: The pH of the soil samples ranged from 6.2 to 7.3. Indicating that the soils are slightly acidic to moderately alkaline in nature. Nitrogen content ranged from 0.07 % to 0.09 %. Potassium content ranged from 0.14 % to 0.18%.

11. **Reserves and total production**: As estimated, geological reserve of sand is 68960 cum and mineable reserve is 61343 cum. During the plan period, a total of 36806 cum sand will be extracted. At the end of the plan period the quarry level will be 30.1 m RL. 7361 cum/annum

will be the yearly production and total production for plan period of five years will be 36805 cum.

Year	Production (m^3)
1st Year	7361
2nd Year	7361
3rd Year	7361
4th Year	7361
5th Year	7361
Total	**36,805**

12. **Method of mining**: The winning of mineable reserve of sand of Baitarini sand quarry will be carried out by opencast by manual dry pit mining method. Sand is to be excavated in layers up to an depth of 0.4m. No machines are proposed to be deployed to carry out wining of sand. Total handling of sand from excavation screening stacking and loading to the user carriers like tractors/Tippers will be done manually. The transport carriers will be covered by tarpaulin to prevent air pollution due to flying of sand from the surface of the transport carrier by wind velocity during the course of transportation.
13. **Water Requirement**: Total water requirement or this project is approx, 1 KLD that will be required for different purposes like domestic, dust suppression, plantation purposes & sourced from as per the availability.
14. **Power/Fuel Requirement**: No electrical power shall be required for operations as the mining will be worked out during day time only. Minimal power required for office shall be taken from the General Electric supply of the area. Dumpers, tractors will be used for transportation. So, the approximate quantity of the fuel used per day is 80 Lts/day.
15. **Greenbelt**: It is proposed to have plantation on both sides of the roads as greenbelt to provide cover against dust dissemination. Riverbanks will be strengthened by way of plantation on the banks. Plantation will also be carried out as social forestry programme in village, school and the areas allocated by the Panchayat/State authorities. Native plants and other local species will be planted. A suitable combination of trees that can grow fast and have good leaf cover shall be adopted to develop the greenbelt. It is proposed to plant 250 numbers of native species will be planted during the 5-year plan period.

S. No.	Saplings to be planted	Species	Place of Plantation
i)	50	Neem, Peepal, Mango,Shisham, Sirish, Babool, Chakunda	Along the river bank & Approach road
ii)	50		
iii)	50		
iv)	50		
v)	50		

S. No.	Saplings to be planted	Species	Place of Plantation
Total	**250**		

16. **Manpower Requirement**: In the mine for total production of 7361 cum/Annum of River Sand and 11 nos. of person are to be employed daily. The indirect employment opportunities for hired vehicles, etc. also can be generated to full fill the day-to-day requirements of the mining personals.

17. **Project Cost**: The project proponent will incur a total cost of Rs. 50.00 Lakhs for the proposed project. 2.0 % of capital cost has been earmarked towards CSR is Rs 1.00 Lakh. Environment Management Plan (EMP) cost will include a capital cost of Rs. 2,50,000 and recurring cost of Rs. 50,000 as per the given Table.

Particulars	Capital Cost	Recurring Cost
Dust suppression and Pollution Control	1,00,000	30000
Environmental Monitoring	1,00,000	15000
Plantation	50,000	15000
Totals	**250000**	**50000**

18. The Environment consultant **M/s EHS360 Labs Pvt Ltd (EHSL), Chennai - 68** along with the proponent made a presentation on the proposal before the Committee.

Considering the information furnished and the presentation made by the consultant, **M/s EHS360 Labs Pvt Ltd (EHSL), Chennai - 68** along with the project proponent, the SEAC decided to take the decision on the proposal after receipt of the following from the proponent

i) The distance of bridge from the lease area.

ii) Justification how the mining will be carried out as KML file shows sand quarry lease area is surrounded by water.

ITEM NO. 07

PROPOSAL FOR ENVIRONMENTAL CLEARANCE FOR KANDARSINGI SAND QUARRY OVER AREA OF 12.106 HA. FOR PRODUCTION OF 7,250 CUM/ANNUM AT KHATA NO.- 567, PLOT NO 3222, 3119,3112,2794 & 2268, VILLAGE KANDARSINGI, TAHASIL- JAGANNATHPRASAD, DISTRICT- GANJAM OF SRI SAMIR TARAI - EC

1. This proposal is for Environmental Clearance of Kandarsingi Sand Quarry over area of 12.106 ha. for production of 7,250 cum/annum at Khata No.- 567, Plot No 3222, 3119,3112,2794 & 2268, village Kandarsingi, Tahasil- Jagannathprasad, District- Ganjam of Sri Samir Tarai.
2. **Category:** As per EIA notification, 2006 and subsequent amendments, the project is coming under B1 Category under Schedule of item 1(a)-Mining of minerals.
3. The mining plan for the ML area has been approved by the Dy. Directorate of Geology, Directorate of Geology, Bhubaneswar Odisha vide Memo no 1630/DG dated 03.02.2020.

4. Letter of Intent has been issued by Tahasildar, Jagannathprasad to Successful Bidder Sri Samir Tarai vide letter no.3199 dated 17.09.2019.
5. **TOR Details**: Terms of Reference (TOR) was granted by SEIAA, Odisha vide letter no 3016/SEIAA dated: 28.09.2021.
6. **Public hearing details:** Public hearing has been conducted on 21.10.2022 at adjacent to Prathmika Vidyalaya, Kandarsingi (plot no- 1160 kata no- 338) under Jagannathprasad Tahasil in Ganjam District of Odisha under the supervision of Addl. District Magistrate, Ganjam. Issues raised during public hearing are air pollution due to transport, destruction of forest due to mining, water pollution due to mining and transportation, damage of river embankment and crop loss, movement of transportation vehicles in front of school will lead to problem of commuting by school children and women at bathing ghats are facing problems due to frequent movement of transportation vehicles. Budget allocated towards public hearing issues is mainly for Environment protection & pollution control and for it, about Rs. 4.7 lakh as capital cost & 3.8 lakhs/annum as recurring cost has been allocated in the EMP budget. CER budget allocated is Rs.80000.
7. **Location and connectivity**: The total lease area of quarry is about an area of 12.106 Ha. / 29.915 Acre in Burha River over Khata no.-567 and Plot no.- 3222, 3119, 3112, 2794 & 2268 situated in village - Kandarsingi, Tahasil- Jagannathprasad, Dist.- Ganjam, Odisha. The lease is located in survey of India Topo Sheet No. E45A9, E45A13, F45S12, F45S16, bounded by Latitude: 19˚54' 16.19" N to 19˚54' 36.46" N, Longitude: 84˚43'18.57" E to 84˚43'42.15'' E bearing Khata no -567 and Plot No 3222,3119,3112,2794 & 2268. The highest elevation of the river sand bed is 82 mRL and the lowest elevation of the lease area is 79 mRL. The Mine Lease area is approx. 67kms of aerial distance from the district headquarters Chatrapur. The proposed ML area can be approached by SH 21 road which is in Westside from ML area. Nearest Road Bridge, river embankment, and electric transmission line pole is 0.28km (NE), 0.28km (NE), and 1.50 km (SE) respectively. The project site falls under seismic zone II which is a least active zone (MSK VIII).
8. There are no National parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Tiger/Elephant Reserves (existing as well as proposed) with in 10 kms radius of Mine lease area.
9. **Drainage**: The drainage pattern in the study area is from East to West. The proposed project does not impact natural drainage pattern of the area.
10. **Baseline details:** Baseline data collection through field survey has been commenced in pre monsoon season i.e., March to May, 2021.
    a) Ambient air quality: The major contributors of air emissions are industrial emission, vehicular movement combustion of bio-fuel and other man made sources. During the study period the concentration of PM10 varies from 34-69 µg/m3 .Concentration of PM2.5 varies from 17.1 µg/m3 to 32.4 µg/m3 .The concentration of SO2 varies from 5.1 to7.5 µg/m3 and NOx concentrations vary from 7.41 to 16.2µg/m3 . From the ambient air quality monitoring carried out for three months (March-May 2021) of the study

period shows that the critical pollutants like PM10, SOx and NOx are well within the permissible limits.

b) Noise quality: The mine lease area is River Bed without any human interference. So the present noise level of the area is lower comparative with the village. The noise level as measured in the core zone is 51.8dB (A) &53.8 dB (A) respectively. The maximum & minimum noise levels at night time were found to be 36.2dB (A) &39.1 dB (A) respectively. The noise level is below the standard as per the Noise Rule, 2000 for rural area. The lease area and all the sampling points are comes under rural area.

c) Ground water quality: The analysis results indicate that the pH ranges between 7.35 and 7.58. Total Dissolved Solids (TDS) varies from 278 to 410mg/l. Total Hardness varies from 162 to 236 mg/l. Fluoride varies from 0.2 to 0.4mg/l. The chlorides and Sulphates were found to be in the range. From the above water quality results it can be inferred that all the parameters analysed are under the prescribed limit specified under IS10500, 2012 for drinking water. The water is free from microscopic organism and do not contain any pollutant which would be hazardous for human, animal or crop health, So it is fit for drinking purpose

d) Surface water -The pH ranged from 7.18 to 7.64. Dissolved Oxygen (DO) ranged from 6.2 to 6.9 mg/l. BOD ranged from <2.0 to4.6 mg/L. COD ranged from 10 to 28mg/l.

e) Soil quality- The soil analysis result shows that, the pH value ranges from 7.62 to 7.84 with organic carbon 0.52 to 0.62%. The concentration of Nitrogen, Phosphates & Potassium has been found to be in good amount in the soil samples. Project site and in the study area is sandy soil as site is located at the river bed. Results of soil sampling analysis showed best for fertility. From the soil analysis result it can be concluded that the soil of the area is highly fertile and suitable for agricultural purpose

11. **Replenishment study**: For the said project replenishment study has been done by UAV/Drone survey (volumetric survey) method. In this case, replenishment study requires three surveys. The first survey has been carried out in the month of May/June before closing of mines for monsoon season. The second survey is carried out in the Month of Nov/Dec after the monsoon to know the quantum of material deposited / replenished in the mining lease. The estimated average erosion thickness is computed within the entire lease area and common safe workable area respectively. However, the volume of sand available after post monsoon is around 73083.12 m^3, which can be treated as safe extractable within the framework of the study after arrival of river level as it was in pre monsoon. Further volume of sand also computed, which can be extracted as on date (Pre monsoon survey date) is 166098 m^3. As it is a new mine no excavation has done in this year. So, total minable reserve available for mining is 73083.12 + 166098 = 239,181.12 m^3 whereas, approved production capacity for the year is 7250 m^3.

12. **Reserves and total production**: The proposed production capacity is 7,250 cum/annum (36250cum for 5 years) for a period of Concession of 5 years. As estimated, the geological reserves and mineable reserves of the proposed project is 242120 cum and 166098 cum respectively.

Sl. No.	Year	Production in m3
1.	1st	7250
2.	2nd	7250
3.	3rd	7250
4.	4th	7250
5.	5th	7250
Total		**36250**

13. **Mining method**: The sand will be excavated by open cast manual method. Since the depth of sand deposit is 2m, handpicks, Spade, Hand shovel and manually loaded into trucks/tractors and dispatched. The sand will be collected in dry river bed in the lease area. A 7.5m wide safety barrier will be left undisturbed around the mine lease boundary.

14. **Water requirement**: The daily fresh water requirement is 2.0 KLD. Water will be obtained from nearby village.

Activity	Calculation	Round off Figure in KLD
Drinking	@ 10 lpcd per labor 10 lt*22 labors/1000= 0.22 or 0.3 KLD	0.3
Dust Suppression	Approach road length= 550m, road width= 6m, water required= 0.5 lt twice a day 100 m*6m*0.5 *2 times/1000= 0.6 KLD	0.6
Plantation	Total sapling to be planted= 500 (during plan period), water required= 2lt/plant 500*2 lts/1000= 1.0 KLD	1.0
	Total	**1.9 or 2.0 KLD**

15. **Greenbelt**: About 500 saplings will be planted during first & second year of plan period. Also plantation will be carried out in the available free government areas with in the study area.

Year	Total No. of plants	No of plants along both side of approach road	No. of plants in buffer zone consulting local authorities	Location	Species
1st	250	50	200	Approach road – 100 m, 100 nos. along both sides of road at spacing of 2 m. Village area – 400 nos. In village area like school premises, Aangawadi, Panchayat bhavan	Guava, mango, Jammun, jhaun, neem etc.
2nd	250	50	200		
3rd	Maintenance	Maintenance	Maintenance		
4th					
5th					
Total	**500**	**100**	**400**		

16. **Traffic study**: Traffic study has been carried out at village road & SH 21. From the traffic analysis it is observed that V/C ratio will change from 0.134 to 0.136 at Village road & will remain same i.e, 0.179 at SH-21 with LOS remain “A” i.e “Excellent”. So the additional load on the carrying capacity will be affected to a minimum level.
17. **Employment potential**: Total requirement of labours and other supervisory manpower will be around 22persons during the mining period. The project will also provide some 5-10 people indirect employment to the people of nearby area of mine site.
18. **Project Cost**: Total Project Cost is estimated to be 40 lakh for the proposed project. About Rs. 4.7 lakh as capital cost & Rs. 3.8 lakhs/annum as recurring cost has been allocated in the EMP budget which will be used for Environment protection & pollution control. The CER budget will be 2% of total project cost of Rs. 40 lakh i.e, Rs.0.8lakh.

S.No	Particulars	Amount per Annum (Lakh)	
		Capital Cost	**Recurring Cost**
i)	Dust suppression	2.0	0.5
ii)	Plantation and its protection (@ Rs. 400/sapling- including fencing)	2.0	1.0 (for Maintenance @ Rs 300/- per day)
iii)	Personal Protective Equipment (@ Rs. 2000/PPE kit)	0.5	0.5
iv)	Environmental Monitoring (Air, water, soil, noise)	--	1.2 (0.5 lakh, 0.4 lakh, 0.20 lakh, 0.10 lakh)
v)	Haul road construction/ maintenance	0.2 (@ Rs 2.0 Lakh/km)	0.6(@ Rs. 300*200 days*1 labor)
	Total	**4.7**	**3.8**

Budget for occupational health

Particulars	Recurring Cost per year (Rs.)
For routine checkup	44,000
Medical aid as per ESI Scheme	1,10,000
Training	50,000
Total	**2,04,000**

Sl. No.	Activity	Capital Cost (in Rs.) /annum
i)	Distribution of educational kits, books & sports kits to the students of village Kandarsingi	40,000
ii)	Financial aid for medical camp for villagers in Kandarsingi village.	40,000
TOTAL		**80,000**

19. The Environment consultant **M/s Atmos Sustainable Solutions Pvt. Ltd.** prepared the EIA report and **P and M Solution, Noida** along with the proponent made a presentation on the proposal before the Committee.

Considering the information furnished and the presentation made by the consultant, **M/s P and M Solution, Noida** along with the project proponent, the SEAC decided to take the decision on the proposal after receipt of the following from the proponent

i) Revised KML file excluding the concave areas of the river and marking the pocket areas of the lease proposed for mining of sand.

ii) Mark the mineable area, safety zone and area taken for the replenishment study in those pocket areas.

iii) Annual replenishment sand in pocket areas and submit revised replenishment study report.

iv) Details of transport route for sand transportation since mining is proposed in pocket areas.

ITEM NO. 08

PROPOSAL FOR ENVIRONMENTAL CLEARANCE FOR BADAMADHAPUR SAND QUARRY OVER AN AREA OF 6.070 HA. IS LOCATED AT KHATA NO. 1399, PLOT NO. 909/7520, VILLAGE- BADAMADHAPUR, TAHASIL-CHATRAPUR, DISTRICT- GANJAM OF SRI SARAT BEHERA - EC

1. This proposal is for Environmental Clearance of Badamadhapur Sand Quarry over an area of 6.070 ha. is located at Khata No. 1399, Plot No. 909/7520, village- Badamadhapur, Tahasil - Chatrapur, District - Ganjam of Sri Sarat Behera.
2. **Category:** As per EIA notification 2006 and subsequent amendments, the project falls under B1 category item 1(a)-Mining of Minerals in the Schedule of EIA Notification, 2006 & Subsequent amendments thereof. The project is coming under B1 Category as the lease area is greater than 5.0 Ha.
3. Letter of Intent has been issued by Tahasildar, Chatrapur to Successful Bidder Sri Sarat Behera vide letter no.2026 dated 09.05.2022.
4. The mining plan for the ML area has been approved by the O/o Joint Director of Geology, South Zone, Berhampur, Odisha vide Memo no 430 /SZ dated 05.04.2022.
5. **TOR Details**: Terms of Reference (TOR) was granted by SEIAA, Odisha vide letter no 4567/SEIAA dated: 19.05.2022.
6. **Public hearing:** Public hearing was successfully executed on date 11.11.2022 at Mouza-Badamadhapur (over the Govt. Land in Khata No 1397, Plot No 10, Area 0.050 Acres, which is adjacent to Kali Thakurani Temple).Issues raised during public hearing are speed of transporting vehicles shall be controlled in market area and road passing adjacent to schools, air pollution due to transportation is impacting vegetation, hence water sprinkling should be carried out on transportation roads; dust pollution, traffic personnel should be appointed in

order to check traffic during rush time, plantation should be undertaken around river bank as well as along road, 2% of profit margin from the mining should be invested in development of the locality, health facility, local employment, social activity / local development, plantation of fruit bearing plants along the transportation roads. Budget allocated towards Public Hearing issues has covered under Environment Management Plan (i.e., Rs. 4.464 Lakhs as Capital Cost & Rs. 2.83 Lakh as Recurring cost) Occupational Health (Rs. 2.52 lakhs) and CER (Rs. 1 lakh) respectively.

7. **Location and connectivity:** The mine lease area is located in Village – Badamadhapur, Tahasil – Chatrapur, District – Ganjam, is on Khata No. 1399, Plot No. 909/7520 of Rushikulya river covered in the Survey of India Topo Sheet No – 74A/14, 74A/15, 74E/2 & 74E/3 and is bounded between the Latitude - 19°27'41.6" N to 19°27'55.2" N and Longitude – 84°58'04.8" E to 84°58'14.5" E. Nearest river bridge, river embankment, electric H.T line is 2.56 km,0.15km and 0.57 km respectively. Nearest Railway Station is Ganjam Railway Station, approx 10.8 km towards ESE direction. Nearest Airport is Biju Patnaik International Airport is approx 124.0 km towards NE direction**.** SH-31 is approx 4.20 km in NE direction. NH- 16 is approx 11.80 km in East direction. Mathakhol RF is approx 5.20 km in NE direction.

8. **Topography and drainage**: The topography of the area is more or less flat with highest elevation of 7 mRL. The lease area here is a Sand Quarry. Drainage system in the region is dendritic. General flow direction of Rushikulya River is from North West to South East. Work will continue only during summer months when there is no water in the leasehold. Mining will be restricted to a 1.20 m depth

9. **Replenishment details**: For the said project replenishment study has been done by UAV/Drone survey (volumetric survey) method. In this case, replenishment study requires three surveys. The first survey has been carried out in the month of May/June before closing of mines for monsoon season. The second survey is carried out in the Month of Nov/Dec after the monsoon to know the quantum of material deposited / replenished in the mining lease. The estimated average erosion thickness is computed within the entire lease area and common safe workable area respectively. the volume of sand available after post monsoon is around 34190 m^3 , which can be treated as safe extractable within the framework of the study after arrival of river level as it was in pre-monsoon. Further volume of sand also computed, which can be extracted as on date (during mining plan preparation) is 63120 m^3. As it is a new mine no excavation has done in this year. So, total minable reserve available for mining is 63120 + 34190= 97310 m^3 whereas, approved production capacity for the year is 21850 m^3.

10. **Baseline summary**: Baseline study has been conducted for Pre Monsoon Season i.e., from March 2022 to May, 2022

    a) **Ambient Air Quality:** Monitoring results reveals that the minimum & maximum concentrations of PM10 for all the 7 AQ monitoring stations were found to be 53.26 µg/m3 at AQ4 and 81.95 µg/m3 at AQ1, respectively. The minimum & maximum concentrations of PM2.5 were found to be 24.36 µg/m3 at AQ3 and 40.77 µg/m3 at AQ7, respectively. As far as the gaseous pollutants SO2 and NOx are concerned, the prescribed CPCB limit of 80µg/m3 for residential and rural areas has never surpassed at

any station. The minimum & maximum concentrations of SO2 were found to be 7.24 µg/m3 at AQ4 & 11.43 µg/m3 at AQ3, respectively. The maximum & minimum concentrations of NOX were found to be 10.36 µg/m3 at AQ6 & 17.14 µg/m3 at AQ7, respectively.

b) **Ground water Quality:** Monitoring results reveals that pH varies from 7.26 at GW6 to 7.89 at GW5 during study period. Total hardness varies from 359.47 mg/l at GW5 to 505.79mg/l at GW4 during study period. Total dissolved solids vary from 1053.14 mg/l at GW5 to 1481.83 mg/l at GW4 during study period.

c) **Surface water Quality:** The analysis results indicate that the pH ranges between 7.32 and 7.46. Dissolved Oxygen (DO) was observed in the range of 4.8 to 7.5 mg/l against the minimum requirement of 4 mg/l. BOD values were observed to be in the range of 4.1 – 7.80 mg/l. The chlorides and Sulphates were found to be in the range. Based on the results it is evident that most of the parameters of the samples comply with 'Category 'B' standards of CPCB indicating their suitability for Drinking water source after conventional treatment and disinfection.

d) **Noise levels:** Noise monitoring reveals that the maximum & minimum noise levels at day time were recorded as 57.9 Leq. dB (A) at NQ1 & 50.8 dB (A) at NQ5, respectively. The maximum & minimum noise levels at night time were found to be 47.6 dB (A) at NQ1 & 37.5 dB (A) at NQ5.There are several other sources in the 10 km radius of study area, which contributes to the local noise level of the area. Traffic activities as well as activities in nearby villages and agricultural fields add to the ambient noise level of the area.

e) **Soil environment:** Samples collected from identified locations indicate the soil is sandy type and the pH value ranging from 7.25 to 7.81, which shows that the soil is alkaline in nature. Potassium content is found to be from 218.20 mg/kg to 297.28 mg/kg. The water holding capacity is found in between 30.00 % to 35.80 %.

11. **Total production and reserves**: Proposed sand quarry is scheduled to produce @ 21,850 cum/year (maximum) 109250 cum is the total production for the plan period. As estimated geological and mineable reserves of the proposed project is 72840 and 63120cum respectively.

Year	Vol. of Sand in (cum)
1st	21,850
2nd	21,850
3rd	21,850
4th	21,850
5th	21,850
Total	**1,09,250**

12. **Method of mining**: The sand will be excavated by open cast pit manual method. Since the depth of mining is 1.20 m, excavator, handpicks, spade, hand shovel will be used by laborers for extracting & loading of sand. Benching parameters is not feasible in case of

sand mining. The maximum depth of mining will be 1.20 m. The mine will be developed in South to North direction. At the end of plan period the quarry floor will be 7.00 mRL.

13. **Water requirement**: The water requirement for workers for drinking purpose will be around 0.52 KLD & the total water requirement will be around 4.73 KLD.

Activity	Calculation	KLD
Drinking	@ 10 lpcd per labor 10*52/1000= 0.52 KLD	0.52 KLD
Dust Suppression	Total approach road to be water sprinkled = 500 m 500 m*6m*0.5 *2 times/1000= 3.0 KLD	3.0 KLD
Plantation	607 plant (during plan period) @ 2 L/per plant= 607*2lts= 1214/1000= 1.21 KLD	1.21 KLD
Total		**4.73 KLD**

14. **Traffic study**: The V/C ratio will be changed from 0.191 to 0.195 with LOS remain "A" i.e "Excellent". So the additional load on the carrying capacity will be affected to a minimum level
15. **Green belt**: Plantation will be done along the approach road and around the river banks. About 607 numbers of trees will be planted along approach road & around the river banks during the first year. Plantation will be done with suitable local species like Teak, Mango, Neem, Jammun, Jhaun etc after consultation with the local authorities.

Year	Greenbelt development	Plantation along both sides of approach road	Plantation around the River Banks	Location	Species
1st Year				Approach road –320 nos – along both sides 0.50 km of approach road at spacing of 2 m. Around the River Banks – 287 nos.	Guava, Teak, mango, Jammun, jhaun, neem etc.
2nd year	607 plants	320	287		
3rd year	Care / protection of Plants				
4th year					
5th Year					
Total	**607**	**320**	**287**		**----**

16. **Manpower requirement**: A total of 52 nos. of manpower are to be employed in the lease area for mining 21,850 cum/year of sand. Indirect employment through creation of shops/ stalls, hired vehicles, etc. also can be generated to full fill the day to day requirements of the mining personnel.
17. **Project cost**: Estimated cost of the proposed project is 50.0 lakhs. Capital cost of EMP is Rs. 4.464 Lakhs Recurring cost of the EMP is Rs. 2.83 Lakh. Budget for Occupational Health and CER is Rs. 2.52 lakhs and Rs. 1 lakh respectively.

BUDGET FOR ENVIRONMENTAL PROTECTION

Sl. No.	Measures	Capital Cost (In Rs.)	Recurring Cost (In Rs.)
1.	Pollution Control Dust Suppression /Water Sprinkling	2,00,000	50,000
2.	Pollution Monitoring i) Air pollution ii) Water pollution iii) Soil Pollution iv) Noise Pollution	--	50,000 40,000 20,000 10,000
3.	Green Belt Development	1,21,400	50,000
4.	Maintenance of Haul Road	1,25,000	63,000
Total		**4,46,400**	**2,83,000**

Budget for Corporate Environmental Responsibility (CER)

Sl. No.	Activity	Capital Cost (in Rs.)/annum
1.	Financial aid for medical camp in Badamadhapur village. @ Rs. 50,000/ camp (1 camp in a year)	50,000
2.	Provision of toilets and sanitation in Badamadhapur village.	25,000
3.	Skill development program camps like computer learning, sewing etc. in Badamadhapur village. @Rs 25,000/trainer (1 trainer)	25,000
TOTAL		**1,00,000**

18. **Environment Consultant**: The Environment consultant **M/s P and M Solution** along with the proponent made a presentation on the proposal before the Committee.

Considering the information furnished and the presentation made by the consultant, **M/s P and M Solution** along with the project proponent, the SEAC decided to take the decision on the proposal after receipt of the following from the proponent

i) Details of Revised Replenishment Study.

ITEM NO. 09

PROPOSAL FOR ENVIRONMENTAL CLEARANCE FOR KOTADWAR SAND GHAT OVER AN AREA OF 20.235 HA AT VILLAGE-PATUGADADHARPUR, TAHASIL - BANKI, CUTTACK DISTRICT OF SRI ABHISEK MOHANTY – EC

1. This proposal is for Environmental Clearance of Kotadwar Sand Ghat over an area of 20.235 ha. at village-Patugadadharpur, Tahasil - Banki, Cuttack district of Sri Abhisek Mohanty.

2. Category: The project is categorized in Category B1 of Schedule under Item1(a)-Mining of Minerals in the EIA notification, 2006 and its subsequent amendments.

3. Letter of Intent has been issued by Tahasildar, Banki to Successful Bidder Sri Abhisek Mohanty vide letter no.1951 dated 18.07.2019.

4. The Mining plan has been approved for a period of five years i.e. 2019-20 to 2023-24 by The Deputy Director of Geology, Bhubaneswar. vide Lr. No. 1149/DG dated 12.02.2019.

5. The District Survey Report for River Sand in respect of Cuttack 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.

6. **TOR Details**: Terms of Reference (TOR) was granted by SEIAA, Odisha vide letter no 2308/SEIAA dated: 26.08.2021.

7. **Public hearing details:** The Public Hearing meeting for Kotadwara sand ghat on Mahanadi River over ML area 20.235 ha., was held on 09/02/2022 at 11:30 am at Patugadadharpur Village, field near Kotadwara School under Banki Tahasil of Cuttack District. Issues raised during public hearing are plantation to be done, provide tarpaulin cover on sand loaded vehicles, provide water sprinkling on road during movement of vehicles, Regulate the movement of sand vehicles by taking care of the movement of school, college students and domestic animals. Budget earmarked for the action plan of public hearing is Rs. 7.10 lakhs.

8. **Location and connectivity**: The lease area is located in survey of India Toposheet no.73H/11 & between latitude of 20°22'23.8" E to 20°22'43.5" E & longitude of 85°30'11.80" N to 85°30'35.30" N bearing Khata no 1 and plot no 25(p), Kisam-Nadi. Nearest National Highway is NH-224 at 17 Km away and State Highway is SH-65 at 6.5 km away from the ML area (Aerial Distance). Nearest Airport is Bhubaneswar Airport at 21 km and nearest station is Naraj Railway station at 30km. Nearest road bridge, river embankment, electric H.T line is 26.0 km,26.0km and 2.0 km respectively.

9. No Ecologically Sensitive Zones like wildlife sanctuaries, national parks are present within 10 Km radius. The project area falls in seismic zone III.

10. **Topography and drainage**: Banki is located in the hilly area to the western part of Cuttack District and on the confluence of the Mahanadi & Kathajodi River. The river Mahanadi flowed to the north side of the state, separating it from Baramba and Tigiria. It was bound in the south by Puri district and in the west by Khandpara State; a little part of the state was located north of the Mahanadi. Drainage system in the region is dendritic.

11. **Replenishment study:** For the said project, replenishment study has been carried out by Volumetric Survey using GPS to define the topography, Contours, RLs of the lease area. The Pre-monsoon Survey was carried out on 04.06.2022 by Field Survey method whereas the post-monsoon survey has been done on 21.12.2022 using Drone & DGPS. In order to estimate the replenished volumes of sand, Cross-section points of each grids for both the surveyed data were compared, the data obtained in pre-monsoon & post monsoon surveys. The safe workable area due to various statutory mining restrictions as per the Sand Mining Guideline, 2020 has been considered for calculations of reserve estimation. It is estimated that an area of 124695 m^2 during pre-monsoon survey & 140610 m^2 during post-monsoon survey is considered as safe workable area.From the study, it is found that the quantity of sand available during pre-monsoon survey is 224451 m^3.The quantity of sand available during Post-monsoon survey is 253098 m^3.The Replenishment Volume = 253098 - 224451=

28647 m^3 .It may be concluded that 28647 m^3 volume of sand is replenished during monsoon, which can be treated as safe extractable within the framework of the study.

Surveys	Safe workable Area in m2	Average thickness in m	Mineable Volume (m^3)	Extractable Volume = 60% in m^3
Pre-monsoon Survey	124695	3	374085	**224451**
Post-Monsoon Survey	140610	3	421830	**253098**

12. **Baseline summary**: Baseline study data was collected during the study period (March 2021-May 2021)

    a) Air Quality: The monitoring results of ambient air quality were compared with the National Ambient Air Quality Standards (NAAQS) prescribed by MoEFCC dated 16.11.2009. The baseline levels of PM10 (38– 67µg/m³), PM2.5 (24–56 µg/m³), SO_2(<4-<8.9 µg/m³), NO_2(<9– < 13.9µg/m³), While thus it was found that concentration of pollutants was within the limits of NAAQ standards.

    b) Ground water Quality: The ground water results of the study area indicate that the pH range varies between 7.2 and 7.4. The Total Dissolved Solids range is varied between 166 mg/l – 188 mg/l for the ground water. The acceptable limit of the chloride content is 250 mg/l and permissible limit is 1000 mg/l. The chloride content in the ground water for study area ranges between 1.4 mg/l – 2.2 mg/l. The desirable limit of the sulphate content is 200 mg/l and permissible limit is 400 mg/l. The sulphate content of the ground water of the study area varies between 2.1 mg/l – 3.5 mg/l. It is observed that all the samples are within the permissible limit of IS 10500: 2012.

    c) Surface water Quality: The pH value ranges from 6.8 to 7.3. The sulphate content in the collected surface water ranges from 11.0 mg/l to 13.6 mg/l. The chloride content in the collected surface water sample ranges from 11.0 mg/l to 14.0 mg/l. DO of the collected surface water sample ranges from 7.0 mg/l to 7.2mg/l. BOD of the collected surface water sample ranges from 1.5 mg/l to 1.8 mg/l

    d) Noise levels: In residential areas, day time noise levels were about 51.5 dB(A) and 43.3 dB(A) during night time, which is within prescribed limit by CPCB (55 dB(A) Day time & 45 dB(A) Night time).

    e) Soil quality: The pH of the soil samples ranged from 6.2 to 6.8. Indicating that the soils are slightly acidic to moderately alkaline in nature. Nitrogen content ranged from 0.07 % to 0.09 %.

13. **Reserves and total production**: As estimated, geological reserve is 607050 cum and mineable reserve is 550002 cum. The project for production of Sand (minor minerals) from Kotadwara Sand Quarry has been proposed for a total production of 55,0000 cum (110000 cum/annum) during the plan period.

YEAR	Surface area in m^2	Thickness in mtr	PRODUCTION (m^3)
1ST YEAR	36666.7	3	1,10,000
2ND YEAR	36666.7	3	1,10,000
3RD YEAR	36666.7	3	1,10,000
4TH YEAR	36666.7	3	1,10,000
5TH YEAR	36666.7	3	1,10,000
TOTAL			**5,50,000**

14. **Mining method**: The open cast manual method will be undertaken and transportation through dumpers and tractors will be carried out. No mining activity will be undertaken during the monsoon season. The bench height will be 1.0 to 3 m and width will be along the base of deposit. There will be no under cuttings or over hangs. The average thickness of the deposit is 1.0m.

15. **Water requirement**: The total water requirement will be approximately 3.0 KLD for different purposes like domestic, dust suppression, plantation purposes. Water will be withdrawn from tube wells from nearby village.

16. **Power Requirement**: No electrical power shall be required for operations as the mining will be worked out during daytime only. Minimal power required for office shall be taken from the General Electric supply of the area. Dumpers, tractors will be used for transportation. So, the approximate quantity of the fuel used per day is 80 Lts/day.

17. **Greenbelt**:

S. No.	Saplings to be planted	Species	Place of Plantation
i)	50	Neem, Peepal, Mango,Shisham, Sirish, Babool, Chakunda	Along the river bank & Approach road
ii)	50		
iii)	50		
iv)	50		
v)	50		
Total	**250**		

18. **Manpower Details**: Total 154 nos. of persons will be employed in the mine.

19. **Project cost**: Total cost of Project is Rs. 2.0 Crores. CER and CSR budget includes Rs.4 lakhs and Rs. 20,000 respectively. Environment Management Plan Cost includes a capital cost of Rs. 155000 and recurring cost of Rs.96000.

20. The Environment consultant **M/s EHS360 Labs Pvt Ltd (EHSL), Chennai – 68** along with the proponent made a presentation on the proposal before the Committee.

Considering the information furnished and the presentation made by the consultant, **M/s EHS360 Labs Pvt Ltd (EHSL), Chennai – 68** along with the project proponent, the SEAC recommended the following:

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

i) Complete replenishment study report as only post monsoon study is uploaded online.

ii) Number of cross sections taken for Replenishment Study Report.

iii) Details of sand transportation route as KML file shows sand lease area is surrounded by water.

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

i) Suitability for mining activity and availability of sand.

ii) Environmental settings of the lease area.

iii) Mining activity, if any carried out in the lease area.

iv) Road connectivity to the lease area.

v) Distance of the road and railway bridge from the boundary of the lease.

vi) Distance of embankment from sand deposit.

vii) Any other issues including local issues.

ITEM NO. 10

PROPOSAL OF ENVIRONMENTAL CLEARANCE OF KARLICHUAN DECORATIVE STONE MINE OVER AN AREA OF 16.62 ACRES OR 6.726 HA LOCATED IN VILLAGE KARLICHUAN, TAHASIL TENTULIKHUNTI, DISTRICT NABARANGPUR, ODISHA OF SRI PADMA PARI – EC

1. This proposal is for Environmental Clearance of Karlichuan Decorative Stone Mine over an area of 16.62 acres or 6.726 Ha located in Village Karlichuan, Tahasil Tentulikhunti, District Nabarangpur, Odisha of Sri Padma Pari.
2. **Category:** The project is categorized in Category B1 of Schedule under Item 1(a)-Mining of Minerals in the EIA notification, 2006 and its subsequent amendments.
3. Based on the M.L application made by the applicant Department of Steel & Mines, Govt. of Odisha have conditionally granted the above area for 30 years and issued the Terms & Conditions Letter vide Letter No 1480 /S &M, Bhubaneswar, Dt. 08.02.2021 in favour of Smt. Pari Padma, W/o- Sapan Kumar Tripathy, VIP Colony, 1st line, Parabeda, At/Po- Jeypore, District-Koraput.
4. The Mining Plan along was approved by Directorate of Mines, Odisha, Bhubaneswar vide letter no. MXXII-(b)-09/2021/6786/DM on dated 04.09.2021 for a period of five years.
5. DFO, Nabarangpur has certified vide letter no 4353 dated 26/11/2018 that no DLC land involved lease area.
6. **TOR Details**: Terms of Reference (TOR) was granted by SEIAA, Odisha vide letter no. 5069/SEIAA dated: 02.08.2022.

7. **Public hearing details**: The Public Hearing in respect of Environment Impact Assessment for M/s Karlichuan decorative stone mine with production capacity of 1000 cum/Annum over an area of 6.726Ha. in Village Karlichuan under Tentulikhunti Tahasil of Nabarangpur District held on 04.11.2022 at 11.30 A.M. in the GP office premises of Digi village under Tentulikhunti Tahasil of Nabarangpur. Issues raised during Public hearing are employment generation, skill development, provision of health care facility for the villagers, development of education system in nearby village, repair and maintenance of road, formation of village committee, utilization plan for developmental fund, supply of drinking water facility to nearby people and villagers, solar lighting system to be installed in local villages, provision of gross plantation along the road side area, provision of gross plantation along the road side area, plantation in the lease area. Total Budget allocated for the action plan of public hearing is Rs. 16.40 lakhs.

8. **Location and connectivity:** The proposed project is situated at Village Karlichuan, Tahasil - Tentulikhunti, District- Nabarangpur, State-Odisha bearing Toposheet No. E44 E11 (65 I/11) bounded by Latitude N $19^0$16' 21.50" to N $19^0$16' 31.60" & Longitude E $82^0$42' 42.07" to E $82^0$43' 01.30". The land use pattern of the mining lease area comes under the non forest agricultural land (Abada Ajogya Anabadi), bearing Khata no: 146, Plot no: 22/P, 250/P, 253/P; Kisam-Patharbani, Pahada, Parbat. Highest altitude of 624mRL and the lowest point is about 600mRL. Nearest road bridge and nearest reserve forest(Benakhama reserve forest) is 6km and 4km respectively. Nearest railway station is Jeypore Railway Stationat an aerial distance of 46.50 Km from the lease area. The lease area can be approached from SH: 44 at a distance of 33 Km. The village Karlichuan is situated at a distance of 2.3 km from Tentulikhunta. The area is connected with the NH - 26 at a distance of 18 Km. It is under the administrative control of Tentulikhunti Tahasil of Nabarangpur District.

9. **Topography and drainage:** 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 southern part and 600 mRL in the northern part of the M.L area respectively. Overall slope of the area is due north-west. There is no forest land in the M.L. area. The entire area falls in waste land under the revenue class of "Parbat" "Pahad" and "Patharbani". The drainage pattern of the area is dendritic. As the region shows an undulated hilly topography, there is neither any seasonal nor any perennial nalla flowing within the applied mining lease area. The nearest river is Indravati River which is flowing at a distance of 3.6Km from the lease area from the lease area.

10. No other decorative stone mines located within 500m radius of the project site as certified by mining

    Officer.

11. **Baseline study:** The data is generated from December 2021 to February 2022 within study area confined to 10 km radius of the ML area.

    a) Ambient Air Quality: During the study period, the concentration of PM10 in the project site varies from 45.3 - 60.1 µg/m3 and from 43.5-75.2 µg/m3 (Khandia Guda and Salapa) in the nearby villages. The value of PM2.5 in the project site is 23.2-34.9 µg/m^3 and the average of PM2.5 varies from 21.5-38.9 µg/m^3 (Dahana and Mentary) in the surrounding

villages. From the ambient air quality monitoring, it has been found that the concentrations of the particulate matter, SO_2, NOx, are within the NAAQS standard as prescribed by CPCB.

b) Ground water Quality - As per the data, it has been observed that, the pH of the ground water varies from 7.2 -7.9, EC value ranges from 50-250µs/Cm, D.O ranges from 6-6.8 mg/l, BOD in nearby water body is less than 2.5-5 mg/L, TDS ranges from 42-140 mg/l, total hardness varies from 40-116, nitrate value ranges from 0.2-1 mg/l, Fluoride content ranges from 0.3-0.68 mg/l. The ground water has been analysed as per IS 2296:1982and found to be suitable for drinking purpose.

c) Surface water Quality - As per the data it has been observed that the pH of the sample water ranges from 6.5 to 6.8,Chlorides ranges from 10-136 Mg/L, Alkalinity value found to be 82-176, Fluoride value found to be <0.05 to 0.15, Hardness varies from 72-196 mg/l, Total dissolved solid 90-300 mg/l. The surface water has been analysed as per IS 10500: 2012 and found to be suitable for drinking purpose.

d) Soil Type in the Study Area: The soil analysis result shows that the pH of the soil is moderately acidic (pH 5.6 - 6.50).The total organic carbon content of soils is 0.19-2.54 Kg/Ha. i.e. low to very high fertile. Available phosphorus content in the soil varies from 39.8 - 91.1 Kg/Ha. i.e. most of the soil contains very high quantity of phosphorus. Available potassium content in soil of this area is in the range 126.3 to 357.5 Kg/Ha i.e. low to very high fertile. Available Nitrogen content in soil of this area is in the range from 126 to 226 Kg/Ha. i.e., very low in nitrogen content.

12. **Total production and reserves:** As estimated, the geological reserve and the mineable reserve of the proposed project is 174594cum and 120297cum respectively. During the total five-year plan period it has been targeted to excavate 20, 000m^3 of rock zone (ROM) & 4000cum/annum, which will generate 5000.00 m^3 of decorative stone blocks,2000.00 m^3 of non-saleable Blocks and remaining 13000.00 m^3 of waste/rejects. The dimension of the proposed quarry-1 is53m x 54m & quarry-2 is 59m x 49m.

13. **Method of mining**: It has been proposed that the mining will be carried out in a systematic and scientific manner by adopting semi-mechanized open cast method of mining. The height of the benches of the quarry will be kept 3 mtr. & width will be3 mtr. or more than the height. The individual slope of benches will be 90º whereas the overall slope of the proposed quarry would be kept 45º. The gradient of the haul road will be maintained at 1:16 with more width than other benches for easy mobilization of man and machinery. Opencast semi-mechanized method will be adopted using machineries such as Excavator, Line offset, compressor, jack-hammer, wire ropes and drill rod etc. Firstly, the weathered zone of 0.5-1.0 m will be scraped from the top. After removal of weathered zone, drilling will be carried out by using jack hammers driven by air compressors as per the requirements adhering to the drilling norms. Both vertical and horizontal holes will be done to expedite wire saw cutter to detach the stone blocks from the quarry face. The depth of the hole is proposed to be 2 m, and 3 m and diameter will be 32mm.

14. **Waste management**: During the proposed plan period a total of 13000.00m^3 of waste will be generated 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 5200.00m^3 of waste will be utilized for construction and maintenance of roads and remaining 7800.00m^3 of waste will be dumped in the proposed temporary waste dump in the earmarked site over 0.44 acre area with an average height of 5 m in a single terrace. During the process of mining the waste generated will be back filled concurrently after reaching the ultimate pit limit. It has been computed that the waste generated during the conceptual period will be back filled over an area of 4.054 hectares up-to 595mRL.Further, the waste generated from the decorative stone quarry is generally used for construction and road metals and civil construction work. Hence attempt will be taken for sale of the generated waste during the conceptual period with due permission from the concerned authority for civil work and road construction work, if possible.
15. **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. Source of domestic water will be nearby village well.
16. **Traffic study**: The V/C ratio on the panchayat road connecting to the Mukhiguda-Khaliguda road is very less i.e. only 0.025. However with the commencement of mining activity maximum of 3 trucks will carry decorative stone from the lease area to the polishing unit which will have additional PCU load of 10 PCU. So with the additional PCU load due to mining operation the V/C ratio will remain as 0.034 with LoS A.
17. **Rainwater harvesting**: The reservoir of 40x40x5m capacity is proposed within in the lease area to store the rainwater for use in mining. The proposed rainwater reservoir can store water upto 8000 cum. This water will be sufficient to cater the non-domestic water requirement for the mines i.e. 3 KLD. The harvested rainwater will help in ground water recharge. Further this will also be utilized for dust suppression, green belt and decorative stone cutting. The rainwater harvesting will be constructed within 2nd year of the mining operation.
18. **Silt management**: Dust generated during the process of cutting will be approx. 0.0015 Tons/ cum of decorative stone block, will be passing through the used water and settled in the settling tank. Daily generation of silt will be 0.09 Tons. These silts are only the powdered rock mass which finally settled in the quarry pit and this silt will not discharged outside the pit. Considering, suspended solid load of 30-40 mg/l the silt generation with the surface runoff will be 0.3 Tons/ day and this will occur only during heavy rainfall. This surface run off will pass through the garland drains and settled in settling tanks finally stored to the rain water harvesting pond.
19. **Greenbelt**: The green belt is proposed to be developed in a width of 7.5 m in safety zone along the boundary of mine lease area covering 1.2 ha. and along the road side. By the end of conceptual period the dumping and stacking area will be covered under plantation. The species selected for outside boundary plantation are *Azadirachta indica, Syzygium cuminii, Mangifera indica, Ailanthus excels, Acacia nilotica, Acacia leucoploea, Tamarindus indicus, Tectona grandis, Albizia lebbeck, Dalbergia sisso* etc. Species selected for the plantation in

the 2nd tier of the boundary i.e. intermediate tier of plantation are mainly shrubs and small trees with the height of >5m<10m. Species selected for the plantation in the 3rd tier of the boundary i.e. inner moist layer of plantation are mainly herbs and shrubs.

20. **Manpower requirement**: A rough estimate reveals that a total of 22 nos. of technical persons, supervisory staffs and labours to carry out the mining and allied activities will be used as manpower for the proposed project (administrative staffs 03nos. of skilled worker 10 nos, unskilled worker 4 nos. & 5nos. un-skilled).
21. **Project cost**: The total cost of project is Rs.200 lakhs. The capital cost of Environmental Protection Measures is Rs. 11.2 lakhs while the Recurring cost is Rs. 5.7 lakhs which include Pollution Control, Occupational health and for the green belt.
22. **Environment Consultant**: The Environment consultant **M/s Kalyani Laboratories Pvt. Ltd. Bhubaneswar** along with the proponent made a presentation on the proposal before the Committee.

Considering the information furnished and the presentation made by the consultant **M/s Kalyani Laboratories Pvt. Ltd. Bhubaneswar** along with the project proponent, the SEAC recommended for grant of Environmental Clearance with stipulated conditions as per **Annexure – B.**

ITEM NO. 11

PROPOSAL OF AMENDMENT ENVIRONMENTAL CLEARANCE FOR M/S. MAHANADI COALFIELDS LIMITED OF NANDIRA UNDERGROUND COAL MINING PROJECT OF 0.33 MTPA IN ML AREA 370 HA OF M/S MAHANADI COALFIELDS LTD LOCATED IN VILLAGES JAMBUBAHALI, DANARA, BADAJORADA AND NATEDI, TEHSIL TALCHER, DISTRICT ANGUL OF SRI SANTOSH KUMAR MOHANTY – MOD EC

1. This proposal is for Amendment of Environmental Clearance of M/s Mahanadi Coal fields Ltd. for Nandira Underground Coal mining project of 0.33 MTPA in ML area of 370 Ha. of M/s Mahanadi Coal fields Ltd. located in villages - Jambubahali, Danara, Badajorada and Natedi, Tahasil - Talcher, District-Angul of Sri Santosh Kumar Mohanty.
2. The proposed project falls under ‘Category B1’ as per EIA notification 2006 and its subsequent amendments.
3. Nandira Colliery is an old UG mine located in Angul district; Odisha has started its production in 1972-73. At present, the average production is 250 Te/day (Capacity: 0.33 MTPA).
4. Environment Clearance for Nandira UG (0.33 Mty) had been granted in June 2007 vide letter no J-11015/866/2007-IA.II(M) Dt.18/6/2007 under the EIA notification 1994.
5. As per MoEF&CC Notification No. 1350(E) dated 06.04.2018, Revalidation of EC was obtained from MoEF&CC on dated 15.11.2020. As per new EC letter dtd. 15-11-2020.
6. As per new EC letter dtd. 15-11-2020 and its futher amnedments dtd. 16-09-2021, 02-05-2022 and 18.01.2023, establishment of STP (one of the major compliance) is linked with grant of CTO by SPCB. As per the latest amended EC dtd. 18th Jan 2023, the construction of STP should be completed by April’2023.

7. CTO was granted by SPCB vide letter no 4343 dated 22.03.2023 valid for the period of 01.04.2023 to 30.04.2023.
8. But the STP work is not going to be completed by April'2023. Therefore, the current proposal is for amendment in EC for further extension of time line for another 05 months i.e. till September'2023 for completion of construction of STP.
9. The proponent along with the consultant **M/s. Central Mine Planning & Design Institute Ltd., Jharkhand,** made a detailed presentation before the SEAC.

Considering the information / documents furnished by the proponent and presentation made by the consultant **M/s. Central Mine Planning & Design Institute Ltd., Jharkhand,** the SEAC recommended for amendment in EC for further extension of timeline for another 5 months i.e., till September 2023 for completion of the STP **with a condition that no further extension of time period will be allowed and the proponent has to give an undertaking to this effect to SEIAA, Odisha before issue of letter allowing extension of time period**.

ITEM NO. 12

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR PRODUCTION OF 90043 TPA IRON ORE IN RESPECT OF NANGALSILA IRON ORE MINES LOCATED IN VILLAGE NANGALSILA AND MURUMDIHI OVER AN AREA 45.333 HA OF NON-FOREST LAND UNDER KUSUMI TAHASIL IN MAYURBHANJ DISTRICT OF SHRI GOURI SHANKAR CHOUBEY – EC UNDER VIOLATION CATEGORY

1. This proposal is for Environmental Clearance for production of 90043 TPA Iron Ore in respect of Nangalsila iron ore mines located in village Nangalsila and murumdihi over an area 45.333 ha of non-forest land under Kusumi Tahasil in Mayurbhanj District of Shri Gouri Shankar Choubey.
2. **Category:** The proposed project falls under Category 'B' [Sl. No 1(a) of Schedule: Mining of Minerals] of the list of project or activities requiring prior Environmental Clearance from MoEF&CC Notification dated 14th September, 2006 in connection with Environment (Protection) Rules 1986.
3. **TOR Details**: Terms of Reference (TOR) was granted by SEIAA, Odisha vide letter no 4200/SEIAA dated: 14.03.2022.
4. **Chronology of events of the project details:**
    - Mining Lease of **Nangalsila Iron Ore Mines** over 45.333 Ha. located in village Nangalsila & Murumdihi under Kusumi Tehsil, District- Mayurbhanj, Odisha for Iron ore was granted in favour of Sri Gouri Shankar Choubey by the Department of Steel & Mines, Government of Odisha vide proceeding No.6876 dated 07.06.1982 in terms of 20 years. The Deed of Mining lease was executed on 19.04.1985 with the State Government represented through the Collector, Mayurbhanj and registered on 18.07.1985 with the Sub-Register, Baripada. Surface right has been granted over 32.780 Ha by the Collector Mayurbhanj, Odisha vide letter dated 17.08.1985.

- Keeping in view of expiry of the lease period the lessee was applied for 1st Renewal of Mining Lease (RML) over the same lease area of 45.931 Ha which inclusive of 0.174 Ha of village forest land and 0.424 Ha of non-forest revenue as well as private tenanted land under provisions of Rules 24A(1) of Mineral Concession Rules, 1960 for a period of further 20 years on 14.04.2004.
- Scheme of Mining approved for 45.931 Ha by the Indian Bureau of Mines vide Letter No.BBS/MBJ/Fe/MP-284 dated 25.08.2006 for the period 2005-06 to 2009-10.
- The lessee/project proponent had continued production with the earlier capacity up to the year 2008-09. under provisions of Rule 24A(6) of Mineral Concession Rules, 1960 i.e. Deemed extension provision. The Mining Officer, Baripada Circle, Baripada vide letter No.4837/Mines dated 19.11.2009 has suspended mining operation/activities until getting all statutory clearances including environmental clearance. No violation was mentioned in the said notice.
- In compliance to the instruction issued by the Mining Officer, Baripada Circle, the lessee was proposed to surrender the small patch of forest land over 0.174 Ha which was kept unused from any mining activity along with few non-working non-forest lands of 0.424 Ha which was not required for future mining work and occupied by the local villagers.
- The lessee was submitted revised RML application vide its letter dated 28.04.2011 to the Steel & Mines Department, Government of Odisha over the reduced area of 45.333 Ha non-forest land only by surrendering 0.598 Ha of non-working forest and non-forest land to keep the project commercially and technically viable.
- The lessee had submitted Final Mine Closure Plan for the part surrender area over 0.598 Ha inclusive of 0.174 Ha of unused village forest land out of the total ML area of 45.931 Ha. Final Mine Closure Plan of the part surrender of 0.598 Ha out of the total area 45.931 Ha duly approved by Indian Bureau of Mines vide letter No. FMCP/MAN/02-ORI/BHU/2011-12 dated 05.09.2011 under Rule 23 (C) of MCDR, 1988.
- Scheme of Mining along with Progressive Mine Closure Plan duly approved by the Indian Bureau of Mines vide letter No.SM/OTFM/27-ORI/BHU/2011-12 dated 28.10.2011 for the period 2010-11 to 2014-15.
- After satisfactorily complied the terms and conditions imposed in the approval letter dated 05.09.2011, officials from Indian Bureau of Mines was inspected the mine and certificate of FMCP for the approved area over 0.598 Ha under Rule 29A of MCR, 1960 has been issued by the Regional Controller, Indian Bureau of Mines, Bhubaneswar vide his Certificate No. T/FMCP/C/I/BHU-2011 dated 08.02.2012.
- During the pendency of the 1st RML application, the Government of India on 12.01.2015 announced promulgation of the ordinance for amendment in the Mines and Minerals (Development and Regulation) (MMDR) Act, 1957 and introduced new MMDR Amendment Act, 2015. As per the new amendment any lease granted before the commencement MMDR Act, 2015, shall be extended: (i) up to March 31, 2030 for minerals used for captive purpose (specific end-use) and up to March 31, 2020 for

minerals used for other than captive purpose, or (ii) till the completion of renewal period, or (iii) for a period of 50 years from the date of grant of such lease, whichever is later. Accordingly, the lease of Nangalsila Iron Ore Mines is eligible for extension upto 50 years w.e.f. 19.04.1985 to 18.04.2035 under section 8A(3) of the MMDR Amendment Act, 2015.

- In the meanwhile, the Government of Odisha, through Department of Steel & Mines issued notice vide their order No.57111/S&M/III(A)SM-24/2013 dated 25.06.2015 in favor of the lessee declaring the mining lease of Nangalsila Iron Ore mines as "Lapsed" w.e.f. 18.11.2009 under provisions of Section 4A of the MMDR Act, 1957 read with the Rule 28(1) of MC rules, 1960.
- The said notice was challenged by the lessee before the Hon'ble Revisional Authority, Ministry Mines, New Delhi vide RA No.22/46/2015/RC-I dated 06.08.2015. Hon'ble Revisional Authority, Ministry Mines in their common order dated 11.05.2016 set aside the impugned order of lapsing and remanded back to the State Government for suitable reconsideration in-line with the Hon'ble Apex Court's direction dated 04.04.2016 passed in W.P.(C) No.114/2014 (Common Cause vrs Union of India) on the provisions of lapsing.
- Under direction of the Hon'ble Revisional Authority, the Department of Steel & Mines was called lessee to appeared before the Additional Secretary to Government, Department of Steel & Mines for personal hearing vide Notice No.1779/SM, Bhubaneswar dated 17.02.2020.
- After conducted personal hearing and based on representation submitted by the lessee the Steel & Mines Department, Government of Odisha passed an order vide its proceeding order No.8913/SM, Bhubaneswar dated 05.10.2021, wherein the Government after careful consideration have been pleased to consider not to declare the mining lease of Nangalsila Iron Ore Mine of Sri Gouri Shankar Choubey as lapsed under sub-rule 6 of Rule 20 of Rule 20 of MCR, 2016. Further, recommended that resumption of the said mining lease is subject to obtaining statutory clearances and approval of renewal of 1st RML applied by the lessee.
- In the meanwhile, the 1st RML application of Nangalsila Iron Ore Mines was placed in the 19th Meeting of Inter-Departmental Committee of Government of Odisha to consider extension of Mining Lease under section 8(A) of the MMDR Act, 1957 up to 50 years w.e.f. 19.04.1985 to 18.04.2035.

5. **Details of violation**

- The Lessee has produced in excess of approved limit of production under EC, Mining Plan and CTO. In this regard, the details of action initiated under Environment (Protection) Act, 1986.
- Further, in pursuant to order/judgement dated 02.08.2017 in W.P.(C). No.114/2014 (Common Cause Vs Union of India & Others), the Mining Officer, Baripada had issued demand notice to the lessee for payment of Rs.3,46,41,047/- towards compensation for

the production of iron ore without/in excess of the EC Limit under section 21(5) of MMDR Act, 1957 by 31.12.2017.

- Subsequently, the Mining Officer, Baripada vide Notice No.3450 dated 20.12.2017 had issued a revised demand notice to the lessee to deposit Rs.2,91,58,813/- on ore before 31.12.2017 pursuance to para 225 of the order of the Supreme Court dated 02.08.2017.
- Against the such demand, the lessee has paid/deposited entire raised demand towards compensation with applicable interest due to delay in payment totaling to Rs.4,51,50,000/- and complied the order of the Hon'ble Apex Court in the Common Cause matter. In addition to the above, the lessee/project proponent has also made payment towards compensation amounting to Rs.6,51,500/- for which a separate demand notice was issued in violation of MP & CTO. The Director of Mines, Odisha, vide their letter No.5629 dated 23.07.2019 reported that during the period from 03.06.2019 to 02.07.2019, the Noticee/Lessee has deposited the entire demanded amount along with applicable interest.
- The lessee has submitted an affidavit, in compliance of the MoEF&CC, Government of India, O.M. No. F: 3-50/2017-IA.III (Pt.), dated 30.05.2018 on the judgment of Hon'ble Supreme Court, dated the 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India along with TOR application.

6. As the project is declared as a case of violation, the Project Proponent shall be submitting a bank guarantee equivalent to the amount of remediation plan and natural and community resource augmentation plan with the SPCB prior to the grant of Environmental Clearance after recommendation of the SEAC, Odisha and finalized by the regulatory authority i.e. SEIAA, Odisha. Total budgetary provision were made towards the implementation of natural community augmentation plan and shall be utilized within a period of three years (2023 to 2026) as given below:

SL.NO.	PROJECT HEAD	AMOUNT IN RS.
i)	Estimated cost on remediation plan based on the damage assessment due to violation	17,07,500.00
ii)	Cost estimate for natural resources augmentation plan and Community resources augmentation plan	2,55,000.00
iii)	Penalty due to violation	1,08,425.00
	TOTAL	20,70,925.00

7. Consent to establish (CTE) has been granted to the project by State Pollution Control Board, Odisha vide Letter No.2752/IND-II-CTE-6806 dated 23.02.2023 for production of 90,043 TPA (ROM) through opencast semi mechanized method of mining along with installation of (1x60 TPH) crusher and 1x400 TPH Mobile Screening Plant inside the ML area over 45.333 Ha.

8. In compliance to the condition imposed in the deed of lease, the PP has obtained permission for surface operation from the Collector & District Magistrate, Mayurbhanj in 1985 over 32.870 Ha. The PP is paying surface rent on regular basis to the State Government through

Mining Department. An amounting to Rs. 21,40,126/- paid towards SR & DR by the PP up to 1st HYE 2022.

9. **Location and Connectivity**: Nangalsila Iron Ore Mine features in Survey of India Topo-sheet No.73-J/4 and extends over an area of 45.333 hectares non-forest land is located in Villages Nangalsila and Murumdihi at P.S/ Tehsil- kusumi under Bamanghaty Sub-division of Mayurbhanj District. Bounded by Latitude: 22°09'23.58"N – 22°09'21.09"N and Longitude: 86°12'53.79" E – 86°12'57.21"E .The project site is well connected with various places of Odisha, Jharkhand and West Bengal through by Road and Rail network. Kuldhia- Nearest Railway siding and Railway Station-8Km Bisoi-Rairangpur State Highway-11km. NH-220-Rairangpur Dhenkikot-14 km, Bhubaneswar- Airport and Capital of Odisha-300km. Badampaharh R.F. 0.40 km SE, Karan Jharan Dhasra R.F. 0.80 km SE. Nearest major water bodies are Kadkai River 0.54 km NE direction from the lease area, Bankbal Reservoir 7.96 km ENE direction from the lease area, Bankbal Nadi 7.39 km NE direction from the lease area and One seasonal nala/stream starts from 307mRL in southern sector and flows down to through 303mRL in the northern sector.

10. The project site is located well beyond 10KM from Simlipal Biosphere Reserve and Eco-Sensitive zone. The same is authenticated by the Divisional Forest Officer, Rairangpur vide letter No777/3F dated 10.02.2023. Further, No Schedule-I & II flora and Fauna exist within the 10KM of the lease area as per letter No. 1715/3F dated 04.04.2023 of DFO, Rairangpur division.

11. **Land Use**: The percent of total area under different land use/land cover category are presented below.

Land Use Pattern of the Study Area			
Sr. No.	**Classes**	**Area in ha**	**Area in %**
i)	Agriculture Area	25035.90	72.10
ii)	Settlements	2374.70	6.84
iii)	Grazing/ Community Land	1300.00	3.74
iv)	Surface Water Bodies	1111.70	3.20
v)	Forest	3601.00	10.37
vi)	Other	1300.00	3.74
Total		**34723.30**	**100.00**

12. **Size & Magnitude**: The project Nangalsila Iron Ore Mines has been projected to produce 90,043 TPA or 0.09 MTPA iron ore involving lease area 45.333 Ha. The method of mining will be opencast and by other than fully mechanized method. The operation will be done as per the proposal approved in the Review of Mining Plan duly approved by the Indian Bureau of Mines for the period 2020-21 to 2024-25.

13. **Topography and drainage**: The mining lease area of Nangalsila Iron Ores Mines displays a flat topography. Highest and lowest altitudes are noted at 300.5 m and 291.5 m above mean sea level. The maximum altitude difference is (300.5 – 291.5= 9m). M.L area consists of mainly waste land as well as agricultural field and bisected by nalla. Drainage system is

dendritic type. The drainage system of the area is mostly influenced by nalla which passes through the lease area in SE to NW direction and controls the drainage system in the region.

14. **Reserve & Resource:** As per the approved mining plan, proved minable reserve is about 95,868 MT and remaining resource is about 1.2 million tons as per earlier mining plan. Considering the proved reserved category, it is proposed to produce 90,043 TPA during the proposal year. The operation of the mine has been suspended by MO, Baripada vide letter dated 11.08.2009 due to want of certain statutory clearances. In the meanwhile, PP has requested the department of steel & mines vide letter dated 04.05.2022 and department of steel and mines rejected the request of PP stating that the exploration can be done only after execution of supplementary lease deed by obtaining all statutory clearances vide letter dated 22.06.2022. Therefore, it is proposed to explore the entire lease area up to G1 level exploration after opening of the mine and fresh reserve estimation will be done accordingly. Therefore, life of the mine will be positively increased upto 12 years.

15. **Method of Mining**: Opencast Other than fully mechanized (OFTM) method of mining will be adopted on 8 hourly shift basis. Excavator of 0.9m3 capacity will be utilized for excavation & loading and 10 tones capacity tippers will be utilized for transportation of ore to the ore sorting & sizing yard and waste to the dumping site. Hard iron ore will be crushed using a 60 TPH crusher and entire iron ore produced will be screened in a 400tph screening plant. Saleable ore will be dispatched through trucks / train depending upon the location of consuming industries and logistic support. The mine will be operated as Category-A (OTFM) Mine as per MCDR, 2017.

16. **Waste and Over Burden**: During the plan period about 8,343m3 of Top soil and 70,980m3 of over burden and side burden (OB+SB) will be generated during the proposed plan period. An area measuring 0.278 Ha and 1.182 Ha has been earmarked for storage of top soil and over burden dump respectively. Overburden will be dumped at Dump No.3 with individual terrace height of 7.5 meters. Slope of the dump will be maintained at 37degree 30Minute. Retaining wall will be constructed around IB/Waste dump to retain the wash-off materials. Boulder and waste materials will be utilized for construction of retaining wall.

17. **Water requirement:** The water required is mainly for dust suppression, green belt development, drinking and other domestic purpose during mining operations. Water requirement for Domestic purpose, drinking purposes, dust suppression and water sprinkling purpose at the mine site shall be drawn from nearby bore wells& hired tanker for sprinklings. The total water requirement will be approx. **9.8 KLD** will be sourced from borewell and water harvesting pond**.** NOC granted by the Central Ground Water Board, Authority for withdrawing 9.8 KLD water per day for mining & allied activity vide letter No. 21-4/3507/OR/MIN/2022 dated 29.03.2022.

18. **Power requirement**: The estimated power demand is ~10 KW for illumination, operation of weighbridge, surveillance system & water pumps. The power shall be drawn from the grid.

19. **Fuel requirement**: The mining activities will be carried out by opencast mechanized method, using diesel operated machinery. The mining operation will be done in single shift during day time only. The fuel (HSD) consumption in the mine operating at full capacity shall be 2.4 kl.

20. **Green Belt**: About 22,425 saplings has been proposed to be planted within a period of 3 years after commencement of mining operation. Out of which, about 7875 numbers of saplings will be planted in 3150m2/3.15 hectares of area along the Safety zone and other vacate site of ML area. Saplings will be planted at 2m spacing. Watering and manuring will be done periodically. Post plantation care such as soil working, pruning etc. will be conducted. Insecticides will be spread for pest control. Proper watch and ward will be there to save the trees from fire & grazing. Monitoring & Maintenance of the plantation site will be undertaken in such way that there will be at least 80% survival rate through casualty replacement. Species like Sisoo, Sisham, Neem, Pipal, Bargad, Khamer, Chirol, Seetaphal, Karanj, Babool, Kadamb, Amaltas, Ashoka, Aam, Gulmohar and available native fruit bearing species has been proposed to plant. The proposed planted scheduled is tabulated as follows:

SL.NO.	YEAR	NUMBER OF PLANT
i)	1st Year (2023-24)	7,475
ii)	2nd Year (2024-25)	7,475
iii)	3rd Year (2025-26)	7,475
	TOTAL	22,425

21. **Public Hearing Details** - Public hearing has been conducted on 19.08.2022 by the SPCB, Odisha as per provisions of EIA Notification 2006 and proceeding issued vide letter dated 19.09.2022 . Issues raised by the participants are Development of Environment Protection, Employment to the local youth, Development of Education system, Development of Health system, Peripheral Development work to be undertaken nearby villages. Budget allocated amounting to Rs.5,50,000/- earmarked under different category towards implementation of the issued raised by the participants and commitment made by the Project Proponent. Peripheral development work will also be done as per the guidelines notified by the Government.

SL.No.	PH based CER Activities	Amount in Rs.
i)	Economic contribution for cultural activities, sports, education, health care etc.	3,00,000.00

ii)	Construction of Boundary wall & White wash of primary school village Suleipat & Suleipat New Government High School, Provision for one computer with printer in primary school village Suleipat	2,50,000.00
iii)	Peripheral development (Rs. 4,00,000.00)	Already covered in EMP
	TOTAL	**5,50,000.00**

22. **Baseline Study** - The baseline environmental study has been performed for the period of 1st December, 2021 to 28th February, 2022.

    a) Results of Soil Samples: The analysis results show that soil is basic in nature as pH value ranges from 5.15 to 6.55 with the concentration of Sodium(12.0mg/kg to 33.5 mg/kg and Potassium (107.5 kg/ha to 174.7 kg/ha.) has been found to be in good amount in the soil samples.

    b) Analysis results of Ground Water reveal the following: pH varies from to 6.50 to 6.70.Total Hardness varies from 60to 192mg/L.Total Dissolved Solids varies from 80 to 410 mg/L.

    c) Analysis results of surface water reveal the following: pH varies from to 7.6 to 7.7.Total Hardness varies from 42 to 56 mg/L.Total Dissolved Solids varies from 44 to 72 mg/L.BOD varies from <2.0 to 2.5.COD varies from 5 to 10.

    d) Analysis of Air Quality reveals that: - PM_{10} varies from 40.6 $\mu g/m^3$ to 67.9 $\mu g/m^3$. All the observed values are well below 100 $\mu g/m^3$.$PM_{2.5}$ varies from 21.8 $\mu g/m^3$ to 37.3 $\mu g/m^3$. All the observed values are well below 60 $\mu g/m^3$.Sulphur dioxide (SO_2) varies from 4.3 $\mu g/m^3$ to 10 $\mu g/m3$. All the observed values are well below 80 $\mu g/m^3$.Nitrogen (NO_2) varies from 10.9 $\mu g/m^3$ to 18.4 $\mu g/m3$. All the observed values are well below 80 $\mu g/m^3$. Carbon Monoxide (CO) varies from 0.33 mg/m^3 to 0.36 mg/m3. All the observed values are well below 2 mg/m^3.

    e) Analysis of Noise levels reveals that: The day time Leq ranges from 38.5 dB (Min.) to 46.8 dB (Max). The night time Leq varies between 31.4 dB (Min.) to 36.7 dB (Max).

23. **Traffic Study Report** - Traffic study measurements were performed at NH 220 and SH-50. The traffic to and from the proposed site will be through this point. Traffic data collected continuously for 24 hours by visual observation and counting of vehicles under three categories, viz., heavy motor vehicles, light motor vehicles and two/three wheelers. Cumulative traffic Scenario and LOS of existing road as given below:

    - Traffic load on SH-50 Road - Existing scenario
    - Volume in PCU/day – 1136, Capacity in PCU/day – 2000
    - Existing V/C Ratio – 0.56, LOS – C, Performance – Good

24. Proposed production capacity of Nangalsila Iron Ore Mine is 90,043 TPA. Average daily production is 246 MT. Despatch of the Iron ore will be done by rail through Kuldhia Railway siding located about 5 KM from the lease area.

25. **Manpower requirement**: The total manpower required for this proposed project is 111 in numbers.

26. **Project cost**: The proposed project cost is estimated to be approximately Rs 1.65 Crore. The fund estimated towards EMP is Rs. 31,48,500.00 as Capital Cost and Rs. 17,33,350.00 as Recurring Cost. Budget for CER Activities is Rs. 5,50,000.00.

27. The Environment consultant **M/s Aseries Envirotek India Pvt. Ltd, Lucknow (UP)-226008** along with the proponent made a presentation on the proposal before the Committee.

Considering the information furnished and the presentation made by the consultant, **M/s Aseries Envirotek India Pvt. Ltd, Lucknow (UP) - 226008** along with the project proponent, the SEAC decided to take the decision on the proposal after receipt of the following from the proponent

i) Project proponent shall submit the real time video of the mining lease and the transportation route as per ToRs conditions.

ii) Copy of approval of DMG as per ToRs conditions.

iii) Exact distance of the lease boundary from boundary of the Similipal Sanctuary and its Eco-Sensitive Zone duly certified by the concerned Tahasildar.

iv) Kisam of land and supporting documents for conversion of Kissam of Land to Industrial Use.

v) Copy of surface right issued by the Collector-cum-District Magistrate.

vi) A report for quantity of silt generation and silt management along with the layout map.

vii) There is a natural nallah within the lease area. Detailed mitigation measures to be undertaken for protection of Natural Nallah. An undertaking shall be given that they shall not divert the natural nallah for mining purpose without permission from competent authority.

viii) Details of Surface Runoff Management and Treatment System.

Member Secretary, SEAC

ANNEXURE - A

SPECIFIC CONDITIONS TO BE STIPULATED IN ENVIRONMENTAL CLEARANCE OF AMBADAHARA STONE QUARRY OVER AN AREA OF 6.0 HA. AT VILLAGE AMBADAHARA UNDER BANSPAL TAHASIL OF KEONJHAR DISTRICT OF SRI SAPAN KUMAR SAHU (TAHASILDAR)- EC.

1. This Environmental Clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court of Odisha, Hon'ble NGT and any other Court of Law, if any, as may be applicable to the quarry lease.
2. The Environmental Clearance is subject to obtaining requisite NBWL Clearance, if any, from the Standing Committee of National Board for Wildlife for Mining project.
3. The lessee shall implement the Pollution Control Measures and safeguards as proposed in the approved EIA/Environment Management Plan (EMP).
4. The lessee 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.
5. 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 lessee 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.
6. The lessee shall obtain NOC from concerned Block Development Officer (BDO) for usage of haulage road/Panchayat Road.
7. The lessee shall ensure safety of human life and livestock from accidents in case village / any habitation is very nearby the mining lease area.
8. The lessee 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 MOEF&CC and SEIAA, Odisha.
9. The lessee/concerned Tahasildar shall follow the detailed procedure for De-reservation of Gochar kissam land if involve in the lease area before going for mining activity.
10. Under no circumstances, the lessee shall use wagon drilling blasting during mining activity.
11. The lessee shall not store and use blasting materials/explosives inside the lease area without obtaining license/permission/authorization from competent Authority as per Indian Explosives Rules, 1983.
12. The lessee shall obtain NOC from CGWA and permission from WR department, Govt. Of Odisha for use of ground water.

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13. No mining activities shall be allowed in forest area, if any, for which the Forest Clearance is not available.
14. No change in mining technology and scope of working should be made without prior approval of the SEIAA, Odisha.
15. No change in the calendar plan including excavation, quantum of mineral and waste should be made.
16. Mining shall be carried out as per the provisions outlined in the approved mining plan.
17. 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.
18. The illumination and sound at night at the lease area 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. Project Proponents 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.
19. 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.
20. The soil to be generated during mining activity shall be stacked in the earmarked temporary soil stack and shall be utilized for the plantation purpose to be undertaken around the respective hill/patch and adjacent to haul roads of the same in lease area.
21. The abandoned mine pit shall be converted to rain water storage tank and the rain water stored in pit shall be utilized for plantation as well as dust suppression.
22. Total Plantation shall be carried out within 2-3 years of mining activity and maintenance shall be continued in remaining years. Trees present in mining area shall be uprooted & transplanted in safety zone.
23. All the lease holders in a cluster should join hand for grading of the main haulage road to maintain the gradient facilitating smooth movement of vehicles.

Environmental Scientist, SEAC

ANNEXURE -B

CONDITIONS TO BE STIPULATED IN ENVIRONMENTAL CLEARANCE FOR DECORATIVE STONE MINES

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 before 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 last 20 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.

Environmental Scientist, SEAC