

**PROCEEDINGS OF THE MEETING OF STATE LEVEL EXPERT APPRAISAL
COMMITTEE, ODISHA HELD ON 03RD MARCH 2023**

The SEAC met on 03rd March 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
2. Dr. K. Murugesan	-	Member Secretary
3. Dr. Rabi Narayan Patra	-	Member
4. Dr. Chittaranjan Panda	-	Member
5. Prof. (Dr.) H.B. Sahu	-	Member (through VC)
6. Prof. (Dr.) Abanti Sahoo	-	Member (through VC)
7. Dr. Ashok Kumar Sahu	-	Member (through VC)
8. Er. Fakir Mohan Panigrahi	-	Member
9. Prof. (Dr.) B.K. Satpathy	-	Member
10. Dr. K.C.S Panigrahi	-	Member (through VC)
11. Shri Jayant Kumar Das	-	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 RBI GREENFIELD DATA CENTER AND ENTERPRISE LEVEL TRAINING INSTITUTE AT IDCO PLOTS NO. S5-H-05, EMC PARK, INFOVALLEY II, JANLA, BHUBANESWAR OVER AN AREA 18.55 ACRES, IN KHORDHA DISTRICT BY SRI SANTOSH KUMAR BEHERA- EC

1. This proposal is for environmental clearance for RBI Greenfield data centre and enterprise level training institute at IDCO, plot no. S5-H-05, EMC park, InfoValley II, Janla, Bhubaneswar over an area 18.55 Acres, Khordha of Sri Santosh Kumar Behera.
2. **Category:** As per EIA Notification, 2006 and its subsequent amendments, this project falls under category B of item 8(a)-Building and Construction projects.
3. Stage I clearance has been approved vide letter no 5-ORB550/2023-BHU dated 23rd February 2023 for Forest land of area 1.22 acres (Mouza Chandihata, Khata no. 65, Kisam – Gramya jungle).
4. **Location and connectivity:** The proposed site of RBI DC and TC is located at IDCO Plot No. S5-H-05, EMC Park, Info Valley II, Bhubaneswar, in Khordha district of Odisha. The geo coordinates of the project is – Latitude 20°14'1.12" to 20°14'6.68" N and Longitude 85° 42' 24.43" to 85° 42' 31 .43"E and finds place in Toposheet No. 73 H/12. The immediate surroundings of the site have the Infosys campus to the west, Cancer hospital (under construction) to the south. Info valley police station is situated at about 1.5 km North-east and GIS substation is located due west, behind Infosys, at 1.5 km. The site is very well connected by road, road and air

communication. Biju Pattnaik airport is located east of the site at a traversing distance of 15 km. NH 16 is at 3 kms Southeast. Bhubaneswar Railway is at 15km.

5. The project is proposed to be constructed over an area of 18.55 acres with total built up area of 95110 Sq.m. Out of the total land allocated to RBI, 1.22 acres is under Rakhita Kissam which is under the process of conversion. The Training and Residential site is accessed via the 45 M main road to the south, gently slopes from the west to the east and is defined by a large land depression to the south-east of the site, along with a tree grove.

6. Area summary and Land use:

AREA STATEMENT	
Site area	75, 069 Sq.m (18.55 acres)
Maximum permissible FAR	2
Maximum Permissible area	1,50,138 Sq.m
Proposed FAR	1.097
Proposed FAR area	82,385.76 Sq.m
Maximum permissible ground coverage	40%
Maximum permissible ground coverage area	30,027.6 Sq.m
Proposed Ground coverage	27.6%
Proposed ground coverage area	20,719 Sq.m

LAND USE PATTERN				
Sl. No.	Particulars of Land use	Area (SQM)	Area (Acres)	Percentage (%)
1	Total Plot Area	75,090.40	18.55	NA
2	Ground Coverage area	20,719.00	5.12	27.59
3	Open Area	13,066.40	3.23	17.40
4	Landscape area	24,780.00	6.12	33.00
5	Paved area	1,250.00	0.31	1.66
6	Road area	15,275.00	3.77	20.34

7. **Water requirement:** Daily Fresh water requirement for the project will be 85 KLD and treated water requirement will be 50 KLD which will be used for flushing purpose. There is the proposal for installation of 125 KLD STP for wastewater treatment. Out of the total water requirement 37% will be met by recycled water. Potable water will be sourced from IDCO water supply.
8. **Wastewater generation/STP:** Total wastewater generation from the apartments will be 122 KLD which will be treated through the sewage treatment plant of 125 KLD capacity.

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9. **Power requirement:** Total power requirement will be 13 MVA and sourced from Orissa Power Transmission Corporation. Backup DG sets required for the project will be 6x1800 KVA + 3 x1500 KVA. Further, there are 2sets of 6x1800 KVA DG sets as it is a Tier IV data center, which requires backup in n+n configuration. The DG sets will be provided with 30m stacks for emission of gases. 678 Solar PV panels are proposed to generate about 650 KW of Electricity which will be used for outdoor lighting and solar water heating. 678 Solar PV panels are proposed to generate about 650 KW of Electricity (5% of the total power consumption). Heat pump based Solar water heater is proposed of capacity 30 KLD which theoretically saves 100KW per day.
10. **Rainwater harvesting:** For rainwater harvesting there is the proposal for construction of 23 nos of recharge pit with 27 cu.m capacity. Further there is the proposal for construction of water reservoir of 925 cu.m capacity for storage of rainwater from open area and green area.
11. **Parking requirement:** Total parking area required is 20819.751sqm and parking area provided for parking is 21,625.00sqm as per the following table.

Details	Area in Sq.m
Parking for Office Space	
Area of Office space (B2+B3+B4)	28,247.94
Parking area required (40%)	11,299.196
Parking area allocated	10,945.00
Parking for Residential Purpose	
Area of essential staff quarters and guest house (B5+B6)	31,735.25
Parking area required (30%)	9,520.575
Parking area allocated	10,680.00
Total parking area Required	20,819.751
Parking area provided	21,625.00 Sq.m
Basement Parking	7415.00
Surface Parking area 1	8083.00
Surface Parking area 2	5197.00
Surface Parking area 3	930.00
Total area	21,625.00 Sq.m

12. **Fire-fighting installations:** The proposed building classified as Business Building and light hazard as per the recommendations of NBC-2016 for all design basis. It includes wet riser system, external and internal hydrants, automatic sprinkler system (for all buildings in all floors except server rooms, UPS and electrical rooms), gas-based fire suppression system for server

rooms, ups and electrical rooms, portable fire extinguisher system (for all buildings as per NBC, IS CODES and Local fire dept requirements). Centralized water reservoir with capacity of 4,00,000 litres shall be provided which includes hydrants and sprinklers, for every 100 nos of hydrant valves, one set of pumps and storage as per nbc-2016, since the no of hydrant valves are more than 100 nos, storage to be doubled in capacity as per NBC-2016 and additional Diesel engine and jockey pump to be provided

13. **Greenbelt development:** Total area allocated for green belt development is 24780 Sq.m (33% of the plot area). Along the boundary, road and open space is 15100 Sq.m (20% of plot area) Intermittent green patches seen near parking, along building side, intermittent space & existing green area is 9680 Sq.m. Number of saplings proposed to be planted is 5910 Nos. Existing plants within the project site is 870 in numbers. Existing plant species are dominated by Anacardium occidentale. Other species present are Acacia, Gambhari, Bel, Arjuna, Achu, Kasi, Jamu, Kurua, Mango etc. Existing plants remaining untouched are 400 in numbers. Number of saplings proposed to be transplanted is 250 in numbers. IDCO has provided passion of the land between boundary of the project and connecting road and the Project proponent has planned to develop a three-tier plantation over the area. 63000 cu.m of soil excavated during construction will be spread along the boundary and green belt will be developed over it.
14. **Solid waste management:** Solid waste generated from the project will be 375 Kg/ day. The solid Wastes generated are segregated at its point of generation, collected and stored at a common designated place and Organic solid waste will be composted in Organic waste converter and used as manure for Landscape. The inorganic solid waste is proposed to be safely disposed through authorized agency.

Total no. of employees	1500
Assuming per capita solid waste generation rate as 0.25 kg/capita/day	
Quantity of solid waste generated	375 kg/day
Organic solid waste : 60 % of the total waste	225 kg/day
Inorganic solid waste : 40 % of the total waste	150 kg/day

15. **Project cost:** Total project cost is estimated to be 675 crores which includes all the construction and installation cost of the building. For implementation of environment management plan a capital amount of 305 lakhs and recurring amount of 13.5 lakhs per annum is proposed by the project proponent.

Sl. No	Particulars	Amount (Rs in Lakhs)	Activities	Allocated Budget (Rs.)/ Annum
Capital Cost			Recurring Cost	
01	Installation of STP within the project site	75.0	Maintenance of STP	10,00,000.00
02	Construction of Rain Water Harvesting structure and recharge pits	50.0	Plantation and maintenance of the green belt and avenue plantation	1,00,000.00
03	Plantation along the project boundary and transplantation of existing trees in the green belt area	20.0	Regular maintenance of DG set and monitoring of DG stack	1,00,000.00
04	Construction of Surface Water Drains	50.0	Environmental monitoring	1,50,000.00

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05	Construction of DG stack	100.0		
06	Solid waste management	10.0		
Total		305.0	Total	13,50,000.00

16. **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 valid for 10 years with stipulated conditions as per **Annexure – A** in addition to the following specific conditions.

- i) **The Proponent before implementation of the project shall convert the land to Gharabari and shall take the ownership of the land if not already taken.**
- ii) **The Proponent shall obtain permission/NOC from Executive Engg (PHD) and / or from the appropriate authority for disposal of excess STP treated water to the nearest drain without which the Proponent will not start construction work. Also, in case of the connecting drain passing through others land (Govt. or Private land), the Proponent shall obtain the permission and possession as the case may be.**
- iii) The proponent shall use solar energy atleast to the tune of 5%of total power requirement as proposed.
- iv) Trees located within the project area shall be transplanted to alongside the boundary green development area.
- v) To reduce discharge of treated water to open drain, the proponent shall use more water for increased number of trees proposed to be planted in the green belt area & shall also utilize this treated water for car washing, floor washing to minimize the surplus discharge to drain.
- vi) The proponent shall explore the possibility for connecting of the stacks of all DG sets into one and relocate it in the appropriate direction so that pollution don't come upto buildings.
- vii) Traffic study report shall be vetted by a reputed institute.
- viii) The proponent shall implement the Pollution Control Measures and safeguards as proposed in the Environment Management Plan (EMP) of project report.
- ix) **All compliances submitted/ committed by PP(s) shall be strictly adhered to them in addition to all the conditions/ specific conditions of EC.**

ITEM NO. 02

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR BENTAKARPADA SAND QUARRY (UNDER CLUSTER APPROACH) IS A SAND MINING PROJECT OVER AN AREA OF 25.00 ACRES/10.12HA LOCATED IN VILLAGE BENTAKARPADA, TAHASIL- BARANG IN DISTRICT CUTTACK BY SRI SUBASH CHANDRA ROUT - EC

1. This proposal is for environmental clearance for Bentakarpada sand quarry (under cluster approach) is a sand mining project over an area of 25.00 acres/10.12 Ha located in village Bentakarpada, Tahasil- Barang in District Cuttack of Sri Subash Chandra Rout.
1. **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.
2. The Quarry lease has granted by the Tahasildar, Baranga to the applicant (successful bidder) Sri Subash Chandra Rout, At-Trisulia, Po-Baranga, Cuttack for mining of river sand (I) for five years.
3. As per the Director of Geology, Odisha, the mining plan has been approved by the Deputy Director of Geology, Bhubaneswar, Odisha vide memo no. GXV(j)- 152/2018/545/DG on dated 21.01.2019.
4. **TOR details:** The Terms of Reference (ToR) has been issued by SEAC, Odisha vide Letter No. SIA/OR/MIN/61621/2021 on dated 29.07.2021.
5. **Public hearing details:** The Public Hearing in respect of Environmental Impact Assessment for Bentakarpada Sand Quarry (under cluster approach) of Sri Suresh Chandra Rout over an area of 10.12Ha. in village Bentakarpada under Barang Tahasil in Cuttack district, Odisha was conducted on 22.06.2022 at 11.30 A.M at the field adjacent to Bentakarpada Sand Quarry under Barang Tahasil of Cuttack. Issues raised in public hearing were dust pollution, water sprinkling on road, not to construct road across the riverbed for the sand quarry, not to construct road through CDA side. Total expenses to be incurred for the action plan is 6 lakhs.
6. There is an another mines within 500 meters of the proposed quarry i.e., Kathajodi River Sand, Tangarhuda of Cuttack Sadar Tahasil, The distance of Kathajodi River Sand, Tangarhuda from the proposed quarry Bentakarpada Sand quarry is 210 meters. This mine had obtained Environment Clearance from SEIAA, Odisha vide letter no. 6183/SEIAA dated 01.11.2018. The Tangarhuda Sand Quarry (Kathajodi R/S) is over an area of 35.00 acres or 14.17 ha. of Smt. Rajashree Behera at village Tangarhuda, Tahasil Sadar Cuttack, District Cuttack.
7. **Location and connectivity:** The proposed project is for the extraction of sand from the allotted Khata No.-57, Plot No-70p, Kissam- Nadi. The project is in survey of India toposheet no. 73H/14 and 73H/15 and bounded between the latitudes of 20°27'57.05"N to 20°28'4.9"N and longitudes of 85°19'31.2"E to 85°49'48.06"E. Nearest road is Cuttack- Athagarh road which is located at a distance of 0.7km from quarry lease area. This site is well connected to NH-16 at distance of 6.4kms and State Highway at 2km. Nearest Airport is Bhubaneswar Airport at 24km. The major district road is Banki road which is located at 1.9kms. Nearest railway lines is Naraj-Marthapur railway line which is located at distance of 4.90 kms from the lease area. The nearest road bridge is located at a distance of 1.34km and railway bridge at 8.80km from the lease area. River embankment is at a distance of 500m from the lease boundary. Nearest sanctuaries are Chandaka Elephant sanctuary at 7.50km and Nandankanan Sanctuary at 7.70km.
8. **Topography and drainage:** The proposed project land is the government land leased for excavation of river sand. There will be no change in land use pattern after the end of plan period as the land will remain as the part of Kathajodi riverbed and the quarry area will be replenished during the rainy season. The Sand bed is on the Kathajodi River. The sand bed deposit represents a gentle sloping to almost flat terrain with highest altitude of 32mRL. The drainage of

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the district is mainly controlled by rivers like Mahanadi, Kathajodi, Kuakhai, Birupa, Chitrapala, Sidua, Luna and Devi. The river basins are much wider and the sand sources are very much suitable for construction purposes. Being highest order of streams, the energy of the streams is less and the suspensions including the river sand are deposited through sedimentation.

9. **Reserves and total production:** The Geological reserves of the proposed project is estimated to be 303510 cum and mineable reserves is 274920 cum. The rate of proposed production will be maximum up to 105000Cu.m per annum for the period of 5 years.

Year Wise Production Plan	
Year	Production (m³)
1st Year	105000
2nd Year	105000
3rd Year	105000
4th Year	105000
5th Year	105000
Total	525000

10. **Mining method:** The method of excavation of sand from Sand quarry will be semi mechanized open cast mining. The mode of the deposits, geomorphology of the area and its hydrological condition are some of the factors that favor 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. The mining is done on single shift basis. Benching pattern is not feasible in case of sand, as the angle of repose of sand is 35°, based on this the Ultimate pit slope Limit has been taken as 35°. The maximum depth of mining will be of 2.50 m or up to water table whichever is less.
11. A temporary approach road will be constructed through the riverbed to Cuttack- Banki Road (1500m) through which the vehicles will carry the sand to the user agency. This road connects riverbank road and finally connect to NH 16. There will be movement of 45 nos of vehicles in this road for transportation of sand. The river bank road connect to Banki road which is two lane one way (60 ft wide) is black topped road. There is one school present along the cuttack – banki road used for transportation of sand.
12. **Replenishment study:** Replenishment study for pre & post monsoon period was carried on 20.05.2022 and 21.11.2022 respectively. One base point was fixed with the help of hand held GPS and the coordinates and the RL of the base point was assigned for future reference. The coordinates of the base point is 2264292.454 N and 377988.080 E with RL 26.00 m. Ground survey by total station on 11 numbers of cross sections for pre monsoon and post monsoon and 1 numbers of longitudinal sections were taken. Surveyed area was covered about 11.00Ha. within which the mining lease area is there. Width of the river measured at 27 places is 2270m (Average width). The quantity of sand replenishment within the source during the year 2022-23 as per surface area method is 69580cum and cross-sectional method is 78408cum.

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13. **Baseline study details:** Baseline monitoring period was carried during March to May 2021.

PERIOD	March 2021 to May 2021	Applicable Standards
AAQ PARAMETERS AT 8 LOCATIONS	PM2.5 – 25.6 to 51.3 µg/cu.m	60 µg/cu.m
	PM10 – 43.3 to 77.6 µg/cu.m	100 µg/cu.m
	SO2 – 4.1 to 13.3 µg/cu.m	80 µg/cu.m
	Nox –12.3 to 28.3 µg/cu.m	80 µg/cu.m
Ground water Quality at 4 Location	pH – 6.8 to 7.1	6.5 to 8.5
	Total Hardness – 80 – 180 mg/l	600 mg/l
	Chloride - 20 to 50 mg/l	250 mg/l
	Fluorides – 0 to 0.05 mg/l	1.5 mg/l
	TDS – 90-350 mg/l	1000 mg/l
	Heavy metals (Cd <0.001, As <0.001, Hg<0.0005) mg/l	Heavy metals (Cd <0.003, As <0.01, Hg<0.001) mg/l
Surface water at 2 locations	pH – 8.0 to 8.1	
	Dissolved Oxygen – 7.1 to 7.3 mg/l	
	Biochemical Oxygen Demand – < 1 mg/l	
	Chemical Oxygen demand – < 5 mg/l	
Noise at 8 locations	Day (dBA Leq) 40.1 to 53.6	55
	Night (dBA Leq) - 32.4 to 46.3	45

Soil Quality at 4 locations	pH – 6.7 to 7.2, Potassium – 47 to 99.5 Kg/ Ha, Phosphorous – 23.2 to 42.7 Kg/ Ha, Nitrogen – 87.9-138.1 Kg/Ha, Electrical Conductivity- 155 -300 ms/Cm	
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14. **Water requirement:** For drinking & domestic purpose, water requirement will be 1 KLD, water requirement for green belt development and dust suppression will be 2 KLD. So total water requirement will be 3KLD.
15. **Power/fuel requirement:** No use of electric power as the operation will be done in daytime. However solar lights will be used for day to day living purposes. Trucks and Tractors will be used for transportation. The approximate quantity of the fuel/Diesel used per day is 100Lit/day.
16. **Greenbelt:** Plantation has been proposed on both sides of the roads as greenbelt to provide cover against dust emission. A massive plantation will be done along the riverbank of the lease area to mitigate the negative impact of mining.
17. **Employment generation:** Due to the operation of mines, 54 people (out of which, 5nos. are skilled, 15nos. are semi-skilled, 30 nos. are unskilled and 4 nos are management & supervisory. will be directly employed in the mines and about 100 people will indirectly be employed for other allied activity related to mining.
18. **Project cost:** The estimated cost of the proposed project comes around 10lakh. EMP cost breakup is given in following table:

Sl. No.	Particulars	Cost/ Annum (in Lakhs)
1.	Environmental Monitoring: Air, Noise 3 Point each and Water 2 points (Twice yearly)	Rs. 1.50
2.	Water sprinkling on the haul road	Rs. 1.00
3.	Green belt development in river bank	Rs. 1.00
4.	Occupational health	Rs. 0.50
Total		Rs. 4.00

19. **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 the followings;

- A) The proponent may be asked to submit the following information and documents for further processing of the EC application.
- i) Copy of permission from the Irrigation Department for construction of temporary approach road on the water channel.

- ii) Another sand mine do exist near to the proposed quarry (around 200m away).The said sand mine is in operation having EC in the year 2018. Copy of such Environmental Clearance shall be submitted.
- iii) Justify, as to why this will not be considered under cluster approach.
- iv) Copy of lease documents.
- v) Lease granted in 2019, why this has not been considered for EC since now ?
- B) The proposed site shall be visited by Sub-Committee of SEAC to verify the cluster approach as well as mining activity, if any has been carried out at the site.

ITEM NO. 03

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR BAITARINI SAND BED, ANANDAPUR OVER AN AREA OF 20.47 ACRES (8.284 HA.) IS LOCATED IN VILLAGE- ANANDAPUR, TAHASIL – ANANDAPUR, IN DISTRICT KEONJHAR BY SRI MANAS KUMAR BARIK- EC

1. This proposal is for environmental clearance for Baitarini Sand Bed, Anandapur over an area of 20.47 acres (8.284 ha.) is in Village- Anandapur, Tahasil – Anandapur, in district Keonjhar of Sri Manas Kumar Barik.
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. The Mining plan has been approved for a period 2020-21 to 2024-25 by The Joint Director of Geology, Keonjhar. Vide letter no – 2390/CZ, dated 30.07.2020 in favour of Tahsildar, Anandapur.
4. The lease was granted to Mr. Manas Kumar Barik being the successful bidder for tenure of 5(Five) years from the date on which this executed deed is registered.
5. Mining lease is a running mine identified sairat source in the DSR page no 4, SI No. 34, annexure II.
6. **Public hearing details:** Public hearing was conducted on 22.06.2022 at village Anandapur, Keonjhar district. Issues raised during the public hearing were selling of sand with appropriate price, regular maintenance & monitor of transporting vehicles, PM Indra Aawas & Biju Pucca Ghar beneficiaries shall get sand at reasonable price, protection of dam road & demarcate the area of lease, employment of labour class in sand mining. Budget earmarked for action plan of public hearing amounts to 5 lakhs.
7. **TOR details:** Terms of Reference (ToRs) was issued by SEIAA vide letter no. 241/SEIAA dated 01.02.2021.
8. **Location and connectivity:** The proposed lease area of Baitarani River sand bed quarry situated at village Anandapur, Tahasil- Anandapur, District - Keonjhar. The lease area is under reference featured in the Survey of India Topo sheet no. 73K/4 is on Khata No. 1281, Plot No.3377, Kissam- Nadi. The geo coordinates of the lease area is 21°12'53.78"N 86°07'07.37"E 21°12'58.89"N 86°07'02.63" E. The proposed area is located 6.37 km from District Headquarters Keonjhar and 150 Km from State Capital Bhubaneswar. Nearest railway station is at Tingripal railway station at an distance of 25.0Km. The lease area can be approached from National Highway NH-215(Gumla-Barkote) is at 0.7 Km away from the ML area. State Highway SH-53 (Banarpal-Pallahara) is 1.0 km away (Aerial Distance). Nearest Airport is Bhubaneswar Airport which is at 150Km. The area over 8.284 ha is a non-forest Govt. land of Nadi kissam, having ground elevation of 35 mRL.River bridge is at 1.8 km away and river embankment is 1km away from the proposed lease area.

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- 9. 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.
- 10. Replenishment report:** Considering all the mining constrains, the volume of sand available during pre and post monsoon survey in safe workable area is computed. It is estimated that during pre-monsoon and post-monsoon, the sand available in safe workable area is 14573.22cum and 9904.618cum respectively. The volume of sand available during post monsoon survey around 9904.618m³ which can be treated safe volume to be extracted. Since as per guidelines 60% of extractable sand i.e.5942.77m³ may be allowed to extract, further permits may be decided by SEIAA, Odisha.
- 11. Reserves:** As estimated, geological reserve of sand is 125780cum and mineable reserve is 51840cum.
- 12. Mining method:** The open cast manual method and transportation through dumpers and tractors will be carried. No mining activity will be undertaken during the monsoon season. No drilling & blasting will be performed for production requirement. The bench height will be 1m 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 2m.
- 13. Water requirement:** Water requirement for the project is 5KLD for domestic, plantation & dust suppression which will be sourced from Govt sources of water.
- 14. Power requirement:** The power required for the office is minimal, shall be taken from the General Electric supply of the area. However, if required for lighting in the project area at night power will be sourced from State Grid and for same it is estimate as 1.0 KVA.
- 15. Baseline study:** Baseline studies was carried out during period March 2021 to May 2021, PM10 ranges within 65-37 µg/m³, PM2.5 ranges within 45.0-20µg/m³, SO₂ ranges within 6.4-4.0 µg/m³ & NOx ranges within 13.2-9.0 µg/m³. In Industrial areas daytime noise levels were about 50.3 dB (A) and 42.3 dB (A) during nighttime, which is within prescribed limit by CPCB (75 dB (A) Day time & 70 dB (A) Nighttime). In residential areas daytime noise levels varied from 46.6dB (A) to 55.3 dB (A) and nighttime noise levels varied from 42.3 dB (A) to 50.2dB (A) across the sampling stations. Surface water analysis showed the pH value ranging 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 4.0 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 6.0 mg/l to 7.0 mg/l. BOD of the collected surface water sample ranges from 1.4 mg/l to 1.8 mg/l. The ground water results of the study area indicate that the pH range varies between 6.6 and 7.4. 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 9 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.
- 16. Greenbelt:** It is proposed to plant 50 Nos. per year of native species along with some fruit bearing and medicinal trees during the plan period and a budget of Rs. 0.6 Lakh for plantation

is given in EMP. Common species to be planted are Neem, Peepal, Mango, Shisham, Sirish, Babool, Chakunda.

17. **Manpower requirement:** In the mine for total production of 10368 Cu.m/Annum of River Sand 16 nos. of person are to be employed daily.
18. **Project cost:** The estimated cost of project is 50 Lakhs. EMP capital cost of the project is 11.0 Lakhs and recurring cost is 4.50Lakhs/Annum.
19. **Environment Consultant:** The Environment consultant **M/s EHS 360 Labs Private Limited, Chennai** 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 EHS 360 Labs Private Limited, Chennai** along with the project proponent, the SEAC decided to take decision on the proposal after receipt of the following from the proponent:

- a) Span and length of bridge and Anandapur barrage.
- b) Rainfall data of last year June from the concerned authority.
- c) Previous production details and distance of proposed quarry from nearest sanctuary.
- d) The traffic study report vetted by a reputed institute.

ITEM NO. 04

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR KERANDI SAND BED OVER AN AREA OF 20.717 ACRES OR 8.384 HECTARES IN VILLAGE KERANDI UNDER PARLAKHEMUNDI TAHASIL OF GAJAPATI DISTRICT BY SRI G. VENKATARAMANA- EC

1. This proposal is for environmental clearance for Kerandi sand bed over an area of 20.717 acre or 8.384 Hectares In village Kerandi under Parlakhemundi Tahasil of Gajapati District of Sri G. Venkata Ramana.
2. **Category:** The project is categorized in Category-B-1 of Schedule under item 1(a)-Mining of Minerals in the EIA notification, 2006 and its subsequent amendments.
3. The proposed mine lease has been granted to Tahasildar Paralakhemundi, Gajapati District. The mining plan for the ML area has been approved by the Dy. Directorate of Geology Authorized officer, O/o Joint Directorate of Geology, Berhampur (South Zone), Odisha vide Memo no 260(2)/SZ dated 25.02.2020.
4. The Letter Of Intent for mining has been issued for 5 years period dated 20.05.2019.
5. The sairat at of the Mine has been auctioned for leasing purpose and the Mine lease has been awarded to Sri. G.Venketa Ramana by Tahasildar Paralakhemundi, Gajapati District. vide letter no 7325/ Sairat Dated 31.12.2019
6. **Public hearing details:** Public hearing was held on 19.09.2022 in the Gram Panchayat office ,Kerandi village,Gajapati district.Issued raised during public hearing were sand mining from the river bed,transportation of sand,dust suppression measure, environment protection,peripheral development, road development and plantation. The CER budget will be 2% about Rs. 40000 of the total project cost will be spend after discussion with District Collector.
7. **TOR details:** Terms of Reference (ToR) of proposed Sand mining project has been issued by SEIAA, Odisha vide File no-SIA/OR/MIN/70575/2021 dated 02.03.2022
8. **Location and connectivity:** The proposed Kerandi sand quarry comes under the village Kerandi, Tehsil-Paralakhemundi, District- Gajapati, in the State of Odisha. The project site is located in survey of India Toposheet No. 74B/1 & 74B/2 and bounded between the Longitude

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84°06'23.5"E to 84°07'28.8"E and Latitude 18°45'49.00"N to 18°46'09.3"N. Mine Lease area is accessible through by own conveyance from SH 4 which is 1.2 Km away from ML area in North direction. The area is at a distance of 03km from district headquarters Gajapati.. The nearest railway station is Paralakhemundi railway station at a distance of 4.10 Km in NW. Nearest road bridge and river embankment is at a distance of 2km and in southwest direction of the project site.

- 9. Topography and drainage:** The proposed sand bed is on the River Mahendratanya. The river flows from East to West direction along the quarry lease area. The quarry lease area is present a bove 2.0 Km in North–East of the village Kerandi. The proposed area is more or less flat with highest elevation of 56 m above msl. The shallow depth excavation on dry/nominally wet sand close to the bank or dry river bed mining has been proposed which will have no impact on drainage. Abandoned stream channels on terrace and inactive flood plains have been preferred rather than active channels and flood plains.
- 10. Replenishment report:** 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 48370 m³, which can be treated as safe extractable within the framework of the study after arrival of river level as it was in Premonsoon. Further volume of sand also computed which can be extracted as on date (during mining plan preparation) is 96740 m³. As it is a new mine no excavation has done in the present year. So, total minable reserve available for mining is 1,45,110 m³ whereas, approved production capacity is for the year is 6,000 m³.
- 11. Reserves:** Total Geological reserves is estimated to be 150980Cum. and total minable reserves is estimated to be 96740 Cum. Total production is given in the following table:

Year	River Sand Production in cum
1st	6000
2nd	6000
3rd	6000
4th	6000
5 th	6000
Total	30000

- 12. Mining method:** It is proposed to produce targeted sand production by opencast manual method of mining without drilling and blasting. Sand from river bed within the lease area will be extracted by manual method using 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. Mining will be started from north western part of the quarry and progress towards eastern side. A 7.5 m wide safety barrier will be left undisturbed around the mine lease boundary. The mineral extraction will be done for a period of 210 days in a year. Dry pit mining will be followed i.e mining at all times will be above flowing river bed water level with no mining when water is

above bed level. Sand will be collected in slices up to a depth of 2.0 m. Sand will be transported to the buyer's location by 8 Cum/4 Cum capacity trucks/tractors.

13. Water requirement: Total water requirement for the mining project is 4.0KLD. This water will be supplied from the nearby village through hired tankers.

Activity	Water requirement in KLD	Source
Dust suppression /allied mining activity	2.0	Through tankers from nearby villages & bore well
Green Belt/Plantation	1.0	
Domestic	1.0	
Total in KLD	4.0	

14. Baseline study: The baseline data generation has been carried out during March 2021 to May 2021 for the period of three months.

- During the study period the concentration of PM₁₀ varies from 60.56 µg/m³ to 92.14 µg/m³. Concentration of PM_{2.5} varies from 39.4 µg/m³ to 55.6 µg/m³. The concentration of SO₂ varies from 4.5µg/m³ to 11.3 µg/m³ and NO_x concentrations vary from 11.3 µg/m³ to 22.1 µg/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, SO_x and NO_x are well within the permissible limits.
- The noise level as measured in the core zone is 55.8 dB (A) in daytime and 43.5 dB (A) in the night time. In the buffer zone the noise level ranges from 50.4 dB(A) & 56.4 dB(A) during day time and 40.1 dB(A) & 46.8 dB(A) during night time.
- The pH level of the ground water sample ranges from 7.32-7.52. This indicates that the pH of the ground water in the study area is nearly neutral and as per the drinking water standard. Total hardness ranges from 250-315 mg/l, and total dissolved solid ranges from 415 to 471 mg/l.
- The pH range of the surface water samples is neutral ranging from 7.1 to 7.9. Dissolved oxygen in the surface water sample ranges from 7.2-7.8 mg/l. Chemical oxygen demand of the surface water body is 6-8 mg/l.
- The analysis results show that soil is basic in nature as pH value ranges from 7.82 to 8.24 which show that the soil is alkaline in nature. Potassium is found to be from 48.21 mg/kg to 60.45 mg/kg. The water holding capacity is found in between 15.28% to 17.46%.

15. Greenbelt: Plantation will also be carried out along the mineral transportation roads in the nearby villages. About 200 saplings will be planted in year. Also plantation will be carried out in the available free government areas with in the study area.

S.No	Year	No. of plants to be Planted	Area of Plantation in Ha.
1	1st Year	40	0.035

2	2nd Year	40	0.035
3	3rd Year	40	0.035
4	4 th Year	40	0.035
5	5 th Year	40	0.035
	Total	200	0.175

16. **Manpower requirement:** Besides the direct and indirect employment to 33 persons, the company will provide vocational skill training to the unemployment youth of the neighbouring villages through outside agencies. Local villagers residing in the nearby villages shall be employed as semi-skilled workers.
17. **Project cost:** The estimated project cost is Rs 20 Lakhs. For EMP the budget is Rs. 2.26 lakhs as capital cost and Recurring cost of 1.766 lakhs. For Corporate Environmental responsibility budget allocated is Rs.40000/-. For Occupational health checkup a sum of Rs. 202000 had been allocated.

Budget for Environmental Protection

S.No	Particulars	Amount per Annum(INR)	
		Capital	Recurring Cost
1	Dust suppression	100000	100000
2	Plantation and its protection	100000	50000
3	Personal Protective Equipment	66000	66000
4	Environmental Monitoring	100000	100000
5	Budgetary for Tarpaulin @ Rs 2000/- (18*12)	20000	20000
6	Maintenance of the Road		100000
	Total in INR	386000/-	436000/-

18. **Environment Consultant:** The Environment consultant **M/s Cognizance Research India Pvt. Ltd** 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 Cognizance Research India Pvt. Ltd** along with the project proponent, the SEAC decided to take decision on the proposal after receipt of the following from the proponent:

- a) Site photographs alongwith Geo-Tag photos along with Coordinates indicated the date of photos.
- b) Clarification regarding mis-match of Plot no. in DSR and documents submitted online.
- c) As per Sand Sustainable Guidelines, 2020, no mining should be allowed below water level. Brief note/justification on procedure mining of sand will be conducted as per guidelines.
- d) There is a mis-match in budget submitted for Environmental Protection and EMP budget in EIA and presentation. This shall be clarified.

ITEM NO. 05

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR HATURIPAL SAND QUARRY OVER AN AREA OF 26.50 ACRES OR 10.72 HA IS LOCATED IN VILLAGE HATURIPAL, TAHASIL-TALCHER IN ANGUL DISTRICT BY SRI TOPHAN MOHANTY- EC

1. This proposal is for environmental clearance for Haturipal Sand Quarry over an area of 26.50 acres or 10.72 ha is located in village Haturipal, Tahasil - Talcher in Angul district of Sri Tophan Mohanty.
2. **Category:** The project is categorized in Category-B under item 1(a)-Mining of Minerals in the EIA notification, 2006 and its subsequent amendments.
3. The Mining plan has been approved by The Joint Director of Geology, Zonal survey, Dhenkanal Vide letter no – 668, on dated 01.06.2020 in favour of Tahsildar, Angul.
4. The lease was granted to Mr. Tophan Mohanty being the successful bidder for tenure of 5(Five) years from the date on which this executed deed is registered.
5. **Public hearing details:** The Public Hearing meeting was held in respect of environmental Impact assessment of Hathuripal Brahamni Nadi Sand Quarry on 30.06.2022 at Hathuripal Matha of Talcher Tahsil of Anugul district. Issues raised were Dust suppression and Water Pollution Control, Afforestation Programme, Local employment opportunity, Provision for repair and maintenance of village roads, Strict adherence of sand mining guidelines, Supply of sand to the locals with reasonable price/free of cost, Speed restriction during school timing. The budget earmarked for the action plan is 16.10 lakhs.
6. **TOR details:** Terms of Reference (ToR) Issued by State Impact Assessment Authority (SEIAA) Orissa, Vide Letter. No. SEACSEIAA/OR/MIN/65843/2021 dated 27.12.2021
7. **Location and connectivity:** Hathuripal Sand Quarry ML area 10.72ha. situated at Hathuripal village of Tahasil - Talcher of District-Anugul, Odisha. The lease area under reference featured in the Survey of India Topo sheet no. 73H/5 and is on Khata No. 83, Plot No.100/343, Kissam-Nadi. The geo coordinates of the lease area is 20°53'24.78"N to 20°53' 58.65"N 85°15'19.39"E to 85°15'29.97"E. The area is located 3.0 km from District Headquarters Talcher and 100 Km from State Capital Bhubaneswar. Nearest railway stations is at Talcher railway station at an distance of 4.0Km. The lease area can be approached from NH:53 & NH:149 at a distance of 2 Km. Nearest Airport is Bhubaneswar Airport which is at a distance of 100Km.
8. **Replenishment report:** The replenishment of Sand has been calculated by volumetric survey method. Amount of sand Replenishment within the quarry area is 10368 Cum/annum & proposed production is 14400cum/annum as mentioned in Replenishment Study Report i.e.

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approx. 72 % replenishment can be done. Therefore, the areas for sand exploitation within the lease area has been divided into two zones, one for First-Third-Fifth years' mining and the other for Second-Fourth years' mining. In the applied lease area replenishment depends upon the rainfall, if adequate amount of sand will not replenish during monsoon, then excavation of sand will be limited to the quantity which will be equivalent to the replenished material up to a depth of 0.3-0.4 mtrs.

9. **Reserves:** As estimated, the proved geological reserve of River Sand is 84640Cu.m and proved mineable reserve is 45430Cu.m. During the plan period, a total of 45000cum (saleable) River Sand will be produced as per the mining plan.
10. **Mining method and production:** Total lease area is 26.50 acres(10.72ha) of non- forest Govt. land of "Nadi" kisam and the lessee is going to work within the said area for plan period of five years with a total production of 45000Cu.m of River Sand @ 9000 Cum/annum. Mining shall be done by open cast Manual method and transportation through dumpers and tractors. The mineral extraction will be done for a period of 200 days in a year. The Lessee has a proposal to transport of sand is by Tractors/Dumpers of 8-10 tonnes capacity
11. **Water requirement:** Total water approx, 5 KLD will be required for different purposes like Domestic, Dust suppression, plantation purposes & sourced from facility of Govt. Water Resource.
12. **Power/fuel requirement:** The power required for the office is minimal, shall be taken from the General Electric supply of the area. However, if required for lighting in the project area at night power will be sourced from State Grid and for same it is estimate as 1.0 KVA. 0.012KLD diesel is required as fuel.
13. **Baseline study:** Baseline information with respect to Land, Water, Air, Noise, Biological and Socio-economic quality status in the study area were collected by conducting primary sampling / field studies during winter season Dec,20-Feb 2021.

Ambient Air Quality

PM10 ranges within 71.0-39.0 $\mu\text{g}/\text{m}^3$, P 2.5 ranges within 38.0-13.0 $\mu\text{g}/\text{m}^3$, SO₂ ranges within 7.3-4.1 $\mu\text{g}/\text{m}^3$ & NO_x ranges within 14.7-8.4 $\mu\text{g}/\text{m}^3$.

The parameters monitored at the project area as per NAAQ standards are found to be within limits. It may be observed that all parameters at all stations are well within the limits prescribed by Central pollution control Board.

Noise Levels

- a) Day time noise levels were varying from 51.40 dB(A) and 40.00 dB(A)
- b) Daytime noise levels varied from 39.2 dB(A) to 30.0 dB(A)

Surface water

- a) The pH value ranges from 6.98 to 7.56 and within the limits (6.5 – 8.5) of IS 2296:1992.
- b) The sulphate content in the collected surface water ranges from 7.4 mg/l to 9.4 mg/l.
- c) The chloride content in the collected surface water sample ranges from 10.7 mg/l to 16.3 mg/l. DO of the collected surface water sample ranges from 6.3mg/l to 7.0 mg/l.
- d) BOD of the collected surface water sample ranges from mg/l to 2.1 mg/l.

Ground water

- a) The ground water results of the study area indicate that the pH range varies between 6.98 and 7.74
- b) The Total Dissolved Solids range is varied between 49 mg/l – 74 mg/l for the ground water.

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- c) The chloride content in the ground water for study area ranges between 1.4 mg/l – 2.6 mg/l.
- d) The sulphate content of the ground water of the study area varies between 1.6 mg/l – 2.5 mg/l.

Soil quality analysis

- a) Soil Samples collected from 5 identified locations indicate the soil is Sand Loamy type and the pH value is ranging from 6.21 to 7.11.
- b) Nitrogen content ranged from 0.042 mg/Kg to 0.084 mg/kg and Phosphorous ranged from 0.018 Kg/Ha to 0.034 Kg/Ha.

14. **Greenbelt:** About 7500 saplings of local species will be planted under the green belt (safety zone) and non-mineralized area for five years.

S. No.	Saplings to be planted	Budget in INR	Species	Place of Plantation
1	2500	90000	Neem, Peepal, Mango, Shisham, Sirish, Babool, Chakunda	Along the lease approach roads, schools and public buildings in Sirigida village and if any social forestry programme will be provided the contribution
2	2500	90000		
3	2500	90000		
4	Maintenance	20000		
5	Maintenance	20000		
Total	7500	3,10,000		

15. **Manpower requirement:** Total manpower requirement for the proposed project is 13 nos (For supervisor & statutory person 1 nos of person, skilled labourers (operator & helper) 3 nos of person, semi- skilled labourers 3 nos. & unskilled labourer 6 nos). Indirect manpower requirement is 10 numbers of persons.

16. **Project cost:** The cost of project is 30.0Lakhs. EMP capital cost of the project is 16.10Lakhs(capital) and recurring cost is 6.15Lakhs/Annum.

17. **Environment Consultant:** The Environment consultant **M/s EHS 360 Labs Private Limited, Chennai** 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 EHS 360 Labs Private Limited, Chennai** along with the project proponent, the SEAC recommended the followings:

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

- i. Benchmark details and layout of replenishment study.
- ii. In Replenishment Study Report, 14400cum/year is the approved capacity mentioned whereas in mining plan 9000cum/year is proposed. Which is correct? This shall be clarified.
- iii. Land break-up such as water, rocks & sand area details.
- iv. In DSR and Lease Document, Plot No. & Khata No. are mis-matching. This has to be clarified.
- v. Cadastral certificate from Tahasildar showing lease area.
- vi. Road connectivity to the site with Map.

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- vii. Distance from road bridge.
- viii. KML file shows the lease area is surrounded by water with small sand deposit, this has to be clarified.
- ix. KML file also shows the site is stony area and rocky area, this has to be clarified.

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

- i. Actual sand deposit in the lease area & water deposit surrounding the lease area as shown in KML file.
- 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 bridge from the boundary of the lease area.
- vi. Cluster approach if any.

ITEM NO. 06

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR DARGULA SAND BED CLUSTER I & II, OVER AN AREA OF 6.69 HECTARES IN VILLAGE DARGULA, TAHASIL DABUGAON, DISTRICT NABARANGPUR BY TAHASILDAR DABUGAON (SUBMITTED UNDER CLUSTER APPROACH CONSISTING OF 2 SAND QUARRIES) – EC

1. This proposal is for environmental clearance for Dargula sand bed cluster I & II, over an area of 6.69 Hectares in village Dargula, Tahasil Dabugaon, District Nabarangpur of Tahasildar Dabugaon (submitted under cluster approach with consisting of 2 sand quarries).
2. **Category:** The project is categorized in Category-B-1 of Schedule under item 1(a)-Mining of Minerals in the EIA notification, 2006 and its subsequent amendments.
3. The Mining plan has been approved The Joint Director of Geology, Zonal survey, Koraput. Vide letter no – 1120, on dated 08.06.2020 (Quarry I) and 1141, dated 08.06.2020 (Quarry II)
4. The proposed mining cluster project is the river bed sand mining on Angi River at village Dargula under Tahasil: Dabugaon, Dist: Nabarangpur, Odisha over an area of 6.69 Ha. The cluster constituted of two sand bed namely Dargulla sand quarry I over an area of 2.53 Ha , Dargulla sand quarry II over an area of 4.16 Ha , on Angi river. All the two mines located within 500m radius from each other forming a cluster of sand bed. The lease has been allocated to the successful bidders by Tahasildar Dabugaon.
5. The Dargula sand quarry I have been allocated to Sri K. Paban Raju and Dargula Sand Quarry II has been allocated to Sri B. Jogi Raju.
6. **Public hearing details:** Public hearing was successfully executed on date 20.09.2022 at Gram Panchayat office premises of Jabaguda village under Dabugaon Tahasil in Nabarangpur district as per the guidelines given in EIA Notification 14th Particular September' 2006 and its subsequent amendment. Road repairing and widening of roads and supply of sand on concessional rates to local people were the main issues raised during public hearing and budget allocated for it was Rs. 1,48,000.
7. **TOR details:** TOR has been granted by SEIAA- Odisha prescribed the Reference No: 651/SEIAA dated 26-02-2021.
8. **Location and connectivity:** The proposed river bed sand mining will be carried out on Angi River located at village: Dargula, under Tahasil: Dabugaon, Dist Nabarangpur, Odisha The

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project site is located in survey of India toposheet no-(65I/7). Dargula Sand Quarry I falls between latitude of 19°26'09.73"N to 19°26'18.09"N and longitudes of 82°20'23.12"E to 82°20'34.50"E and Dargula Sand quarry II falls between latitude of 19°26'13.93"N to 19°26'29.44"N and longitudes of 82°20'34.91"E to 82°20'45.80"E. Nearest Railway station is Kotpar Railway Station at a distance of 44.02 Km from the project site. The nearest road is a village road located at a distance of 100m. The site is well connected to NH-201 & SH-39 at a distance of 21.09 Km & 6.7 Km respectively. Nearest airport is Jharsuguda Airport located at a distance of 326Km from the mining Lease Cluster.

9. **Topography and drainage:** Topography of the area is a flat terrain which lies at an elevation of more than 2m from the level of flow of water. The gradient of flow of water in the river is gentle. So, in the lease area, the highest elevation is 115mRL & lowest elevation is 113mRL in sand. Drainage system in the region is dendritic. General flow direction of river is from North to South. Work will continue only during summer months when there is no water in the leasehold. Mining will be restricted to a depth above the ground water level.
10. **Replenishment report:** The estimated average erosion thickness is computed within the entire lease area and common safe workable area respectively. However, the volume of sand available in Dargula-I sand quarry after post monsoon study is around 6465.3 m³, which can be treated as safe extractable within the framework of the study after arrival of river level. As it is a new mine no excavation has done in this year. So, total minable reserve available for mining is 36825.3 m³ whereas, approved production capacity for the year is 6072 m³. The volume of sand available in Dargula-II sand quarry after post monsoon study is around 12814.68 m³, which can be treated as safe extractable within the framework of the study after arrival of river level. So, total minable reserve available for mining in Dargula-II is 46244.68 m³ whereas, approved production capacity for the year is 6670 m³.
11. **Reserves:** Geological reserves and mineable reserves of Dargula Sand Quarry I is 62301.96 cum and 31463.64cum respectively and for Dargula Sand Quarry II is 77265 cum (geological reserve) and 33430 cum (mineable reserve). Total production of the proposed project is given below in the following table.

Sl. No.	Year	Dargula -I Production in m ³	Dargula II Production in m ³	Total Production in m ³ (Cluster)
1.	1st	6072	6670	12742
2.	2nd	6072	6670	12742
3.	3rd	6072	6670	12742
4.	4th	6072	6670	12742
5.	5th	6072	6670	12742
Total		30360	33350	66710

12. **Mining method:** The method of excavation of sand from Dargula Sand Quarry – I & II will be by manual method. The mode of the deposits, geomorphology of the area and its hydrological condition are some of the factors that favor 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. The mining is done on single shift basis. The local manpower has been engaged in the

mine. Benching will not be feasible in case of sand mining as the maximum depth of mining will be only 1 m.

13. Water requirement: the water requirement for workers for the Dargula I, 7.0 KLD of water will be required and 8.0 KLD of water will be required for Dargula II. Total water requirement for the cluster will be 15.00 KLD. This water will be supplied from the nearby area.

Activity	Calculation	Round off Figure in KLD
Drinking	@ 10 lpcd per labor 10*21/1000= 0.21 KLD	0.21
Dust Suppression	Total approach road to be water sprinkled = 1540 m 1540 m*6m*0.5 *2 times/1000= 9.24 KLD	9.24
Plantation	2610 plant (during plan period) @ 2 L/per plant= 2610*2lts= 5220/1000= 5.22 KLD	5.22
Total		14.67 ~ 15.0

14. Baseline study: Baseline study was conducted for period of 3 months (October'21 to December'21).

- a) Ambient Air Quality Monitoring reveals that the minimum & maximum concentrations of PM₁₀ for all the 7 AQ monitoring stations were found to be 58.7 µg/m³ at AQ3 and 89.34 µg/m³ at AQ1, respectively. Ambient Air Quality Monitoring reveals that the minimum & maximum concentrations of PM_{2.5} for all the 7 AQ monitoring stations were found to be 23.21 µg/m³ at AQ3 and 56.21 µg/m³ at AQ1, respectively. As far as the gaseous pollutants SO₂ and NO_x 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 3.24 µg/m³ at AQ2 & 17.21 µg/m³ at AQ1, respectively. The minimum & maximum concentrations of NO_x were found to be 9.83 µg/m³ at AQ3 & 25.10 µg/m³ at AQ1, respectively.
- b) Analysis results of ground water during study period reveal pH varies from 7.19 at GW4 to 7.73 at GW6; total hardness varies from 280.34 mg/l at GW4 to 329.4mg/l at GW3 ;total dissolved solids vary from 846 mg/l at GW4 to 1238 mg/l at GW6.
- c) Surface water analysis results indicate that the pH ranges between 7.32 and 7.72. Dissolved Oxygen (DO) was observed in the range of 6.8 to 7.4 mg/l against the minimum requirement of 4 mg/l. BOD values were observed to be in the range of 3.62 – 4.3 mg/l. The chlorides and Sulphates were found to be in the range. Bacteriological examination of surface water samples revealed the presence of total coliform in range of 1.8×10³MPN/100 ml to 2.0×10³. MPN/100 ml.
- d) Noise monitoring reveals that the maximum & minimum noise levels at daytime were recorded as 59.4 Leq. dB (A) at NQ3 & 50.6 dB (A) at NQ5, respectively. The maximum & minimum noise levels at night-time were found to be 48.2 dB (A) at NQ3 & 38.8 dB (A) at NQ5.
- e) Samples collected from identified locations indicate the soil is sandy type and the pH value ranging from 7.25 to 8.02, which shows that the soil is alkaline in nature. Potassium is found

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to be from 234.20mg/kg to 253.56mg/kg. The water holding capacity is found in between 26.94 % to 32.09%.

15. **Greenbelt:** Plantation will be done with suitable local species like Teak, Mango, Neem, Jammun, Jhaun etc after consultation with the local authorities. A time bound progressive schedule for greenbelt is given in the following table. Total 2610nos. of saplings will be planted from the cluster during plan period.

Dargula Sand Quarry - I					
Year	Safety Zone	No of plants along both side of approach road	Location	Species	
1 st	0.480/480	740	Approach road – 740 nos – along both sides 0.74 km of approach road at spacing of 2 m.	Guava, mango, Jammun, jhaun, neem etc	
2 nd	Maintenance	Maintenance			
3 rd					
4 th					
5 th					
Total	480	740			
Total	1220				

Dargula Sand Quarry - II					
Year	Safety Zone	No of plants along both side of approach road	No. of plants in buffer zone consulting local authorities	Location	Species
1 st	0.491/490	800	100	Approach road – 800 nos – along both sides 0.80 km of approach road at spacing of 2 m. Village area – 100 nos. In village area like school premises, Aangawadi, Panchayat bhavan	Guava, mango, Jammun, jhaun, neem etc
2 nd	Maintenance	Maintenance	Maintenance		
3 rd					
4 th					
5 th					
Total	490	800	100		
Total	1390				

16. **Manpower requirement:** Total manpower requirement of Dargula sand quarries is 21 nos. (i.e. Dargula sand quarry I is 10nos. and Dargula sand quarry II is 11nos.).

17. **Project cost:** The estimated cost of project is around Rs. 60 lakhs. CER budget proposed for this project is 1,20,000/- and for EMP a budget of Rs.830000 has been allocated as capital cost and Rs. 270000 as recurring cost.

Dargula Sand Quarry– I & II (For Cluster) Budget for environmental protection

SI. No.	Measures	Capital Cost (In Rs.)	Recurring Cost (In Rs.)
1.	Pollution Control Dust Suppression /Water Sprinkling	--	50,000
2.	Pollution Monitoring i) Air pollution ii) Water pollution iii) Soil Pollution iv) Noise Pollution	--	50,000 40,000 10,000 10,000
3.	Green belt development	5,22,000	50,000
4.	Maintenance of haul road	3,08,000	60,000
Total		8,30,000	2,70,000

18. **Environment Consultant:** The Environment consultant **M/s 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 recommended the following;

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

- a) Exclude concave portions (area prone to erosion) from the mining zone.
- b) Revisit and submit replenishment study.
- c) The exact distance of the nearest bridge from proposed quarry.
- d) Certificate from concerned DFO for absence of Schedule – I species and the flora and fauna of the region.

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

- i. Actual sand deposit in the lease area as shown in KML file.
- 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 bridge from the boundary of the lease area.
- vi. Cluster approach if any.
- vii. Distance of embankment from sand deposit.

ITEM NO. 07

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR SANTHAPADA SAND QUARRY – A (UNDER CLUSTER APPROACH) IS A SAND MINING PROJECT OVER AN AREA OF 36.00ACRES/ 14.56HA. LOCATED IN VILLAGE - SANTHAPADA, TAHASIL - TALCHER IN DISTRICT ANGUL BY SRI ABHIMANYU BEHERA- EC

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1. This proposal is for environmental clearance for Santhapada Sand Quarry – A (under cluster approach) is a sand mining project over an area of 36.00acres/ 14.56 Ha. located in village - Santhapada, Tahasil - Talcher in District – Angul of Sri Abhimanyu Behera.
2. **Category:** The project is categorized in Category-B item 1(a) - Mining of Minerals in the EIA notification, 2006 and its subsequent amendments.
3. The Mining plan has been approved by The Joint Director of Geology, Zonal Survey, Dhenkanal.. Vide letter no – 662, on dated 01.06. 2020 for a period of five years.
4. Santhapada Sand Quarry – A mining lease is over an area of 18.00acres/ 7.28Ha granted by Tahasildar, Talcher, Angul and has been leased out to the successful bidder Sri Abhimanyu Behera (Managing Director) M/s Sheranwali Infrastructure Pvt. Ltd., At-Jagannath Colony, PO/PS-South Balanda, Dist – Angul.
5. There is another sand quarry in cluster i.e. Santhapada Sand Quarry – B, over an area of 18.00acres/ 7.28Ha. which is an operating mine (EC has been granted) and located within 500 meters of Santhapada Sand Quarry – A which had been granted to Sri. Gagan Mohanty, resident of Talcher, Dist – Angul, Odisha
6. **Public hearing details:** Public hearing was successfully executed on date 24.06.2022 at 11:00 AM, as per the guidelines given in EIA Notification 14th September' 2006 and its subsequent amendment. Issues raised in Public Hearing are water pollution, decrease in ground water table, traffic congestions due to sand transport, affecting fish cultivation, river bank/soil erosion and subsequent effect on plantation, air pollution, adequate plantation to be done, obstruction in river flow pattern, local employment and development activities, pollution control measures, and assistance to nearby villages. Budget allocated for CER is 1,20,000/-
7. **TOR details:** TOR has been granted by SEIAA- Odisha prescribed the Reference No: 1796/SEIAA dated 26th July, 2021
8. **Location and connectivity:** The mine lease area is located in village – Santhapada, Tehasil– Talcher, District – Angul, Odisha is on Khata no- 480, Khasra no. 4198 of Kisam 'Nadi' covered in the Survey of India Topo Sheet No – 73I/5 and is bounded between the Latitude - 20° 54'45.1" N to 20° 54' 53.7" N & Longitude – 85° 14' 02.8" E to 85° 14' 20.6" E. Nearest Railway Station is Talcher Thermal Railway Station, approx. 4.2 km, SW direction. Nearest Airport is Biju Patnaik International Airport, approx 96 km towards SE direction. Nearest Highway is NH-200, approx 0.5 km in North direction. NH-23 is approx 1.5 km in West direction. Nearest Road bridge is Approx. 0.51km from mining lease.
9. **Topography and drainage:** Topographically the district can be divided in to three natural tracks. First is a chain of hills running along the northeastern boundary of the district covering Pallahara. Another chain of hills runs along with south-west boundary covering Athamallik and Angul. The third natural division is a valley of river Brahmani running along with boundary of Talcher through Kaniha touching Pallahara. The agriculture in the district is primarily rain fed because of inadequate irrigation facility. Area irrigated through all sources is only 31% during kharif season and 21% during rabi season as per the available data. The district has 216403 Ha of cultivable land.
10. **Replenishment report:** Based on the replenishment study, both the sections (pre-monsoon and post-monsoon) volumes had been calculated and found that estimated amount of sand deposited is 86400 cum in addition to the previous minable reserve is 124416 + 86400 = 210816 cum of this year. During the operation the mRL level has increased from 60.00 to 61.25 at the 1st replenishment study. However, Replenishment depends upon the above-mentioned natural

parameters, which may vary time to time. However, Approved Annual Production Capacity = 24882 m³ as per approved mining plan.

11. **Reserves and production:** The average production is proposed to be 24,882 cum/year (34,834.8 TPA) and 1,24,410 cum is the total production during the 5 years plan period. The total geological reserve of the proposed quarry is 218400 cum and extractable mineable reserve is 124416 cum.
12. **Mining method:** Mining will be done by semi mechanized method without adoption of drilling & blasting. Since the depth of sand deposit is 1m, excavator, handpicks, spade, hand shovel will be used by laborers for extracting & loading of sand. The proposed mined out areas will gradually get filled up by river sands transported with water from upstream direction. Quarry floor level (RL) at the end of the lease period will be 65.5m RL of Santhapada Stone Quarry – A & 53.0m RL of Santhapada Stone Quarry –B.
13. **Water requirement:** The total water requirement will be around 3 KLD. This water will be supplied from the nearby area.

Activity	Calculation	Round off Figure in KLD
Drinking	@ 10 lpcd per labor 10*31/1000= 0.31KLD	0.31
Dust Suppression	Total approach road to be water sprinkled = 150 m 150 m*6m*0.5 *2 times/1000 = 0.90 KLD	0.90
Plantation	750 plants @ 2 L/per plant= 750*2 lts= 1500/1000= 1.50 KLD	1.50
Total		2.71 ~ 3.0

14. **Baseline study:** 24 hr hourly monitoring was carried out for SO₂, NO_x, PM_{2.5} & PM₁₀. Summarized project site meteorological data for post-monsoon twice a week at each station for a study period of 3 months (December'20 to Feb '21) was taken. The Ambient Air Quality Monitoring reveals that of monitoring stations with minimum Concentrations of PM₁₀ were 58.60µg/m³ and maximum 90.25µg/m³.
 - a) The result of PM_{2.5} reveals that the minimum concentration of 23.97µg/m³ while maximum concentration of 55.5µg/m³. The gaseous pollutants SO₂ and NO_x were within the prescribed CPCB limit of 80 µg/m³. For residential and rural areas at all stations. The minimum & maximum concentrations of SO₂ were found to be 5.91µg/m³ &15.03µg/m³ respectively. The minimum & maximum concentrations of NO_x were found to be 10.62µg/m³ at AQ2 & 24.51µg/m³ at AQ4.
 - b) Ground water pH varies from 7.19 at GW1 to 7.62 at GW6. Total hardness varies from 263.3 mg/l at GW1 to 317.37 mg/l at GW5. Total dissolved solids vary from 335 mg/l at GW5 to 364 mg/l at GW3.
 - c) Surface water analysis results indicate that the pH ranges from 7.92 to 8.19. Dissolved Oxygen (DO) was observed in the range of 226 to 294 mg/l BOD values were observed to be in the range of 3.8 to 4.1 mg/l. COD values were observed to be in the range of 14 to 16.72 mg/l.

- d) Samples collected from identified locations indicate the soil is sandy type and the pH value ranging from 6.71 to 7.52, which shows that the soil is alkaline in nature. Potassium is found to be from 68.85 mg/kg to 81.13 mg/kg. The water holding capacity is found in between 28.82 % to 32.90 %.
- e) Noise monitoring reveals that the minimum & maximum noise levels at daytime were recorded as 48.26 Leq. dB (A) at NQ7 & 64.15 Leq. dB (A) at NQ1, respectively. The minimum & maximum noise levels at night-time were found to be 37.55 dB (A) at NQ5 & 52.44 dB (A) at NQ1.
15. **Greenbelt:** 150 number of saplings proposed during plan period will be planted. Plantation shall be done with suitable local species like Teak, Mango, Neem, Jammu, Jhaun etc. per year. Plantation can also be done along the approach road during the plan period.

Year	No. of Plants	Species
1st	150	Teak, Mango, jammu, jhaun, neem etc
2nd	150	
3rd	150	
4th	150	
5th	150	
Total	750	

16. **Manpower requirement:** A total of 38 nos. of manpower are to be employed in the lease area for mining 24,882 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:** The estimated project cost for Santhapada Sand Quarry A is Rs 60 Lakhs. Capital cost of EMP is Rs. 187500 Lakhs and recurring cost is Rs. 429000..Budget allocated for CER is Rs.1,20,000/-, Budget for onsite shelter and Facilities for Mine Workers – Rs.140000 as capital cost and Rs.50000 as recurring cost. Budget for Occupational Health is Rs. 2,00,000.

Budget for Environment Protection for Santhapada Sand Quarry – A & B (For Cluster)

Sl. No.	Measures	Capital Cost (In Rs.)	Recurring Cost (In Rs.)
1.	Pollution Control Dust Suppression /Water Sprinkling	--	3,00,000
2.	Pollution Monitoring i) Air pollution ii) Water pollution iii) Soil Pollution iv) Noise Pollution	--	56,000 (8 samples) 32,000 (4 GW & 4 SW) 16,000 (2 samples) 14,000 (2 samples)
3.	Green belt development	3,00,000	2,00,000
4.	Maintenance of haul road	1,12,500	2,40,000
Total		4,12,500	8,58,000

Budget for Environment Protection for Santhapada Sand Quarry – A

Sl. No.	Measures	Capital Cost (In Rs.)	Recurring Cost (In Rs.)
1.	Pollution Control Dust Suppression /Water Sprinkling	--	1,50,000
2.	Pollution Monitoring i) Air pollution ii) Water pollution iii) Soil Pollution iv) Noise Pollution	--	28,000 (8 samples) 16,000 (4 GW & 4 SW) 8,000 (2 samples) 7,000 (2 samples)
3.	Green belt development	1,50,000	1,00,000
4.	Maintenance of haul road	37,500	1,20,000
Total		1,87,500	4,29,000

Budget for Environment Protection for Santhapada Sand Quarry – B

Sl. No.	Measures	Capital Cost (In Rs.)	Recurring Cost (In Rs.)
1.	Pollution Control Dust Suppression /Water Sprinkling	--	1,50,000
2.	Pollution Monitoring i) Air pollution ii) Water pollution iii) Soil Pollution iv) Noise Pollution	--	28,000 (8 samples) 16,000 (4 GW & 4 SW) 8,000 (2 samples) 7,000 (2 samples)
3.	Green belt development	1,50,000	1,00,000
4.	Maintenance of haul road	75,000	1,20,000
Total		2,25,000	4,29,000

18. **Environment Consultant:** The Environment consultant **M/s 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 recommended the following;

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

- i. KML file shows small quantity of sand deposit surrounded by water & most part of the quarry is inside the water, this has to be clarified.
- ii. No transportation road from the lease area as per KML file, road connectivity to the site with Map.
- iii. KML file and Mining Plan mis-matching, this has to be clarified.
- iv. Mineable area is very less comparing to Lease sanction area, this has to be clarified.

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

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- i. Actual sand deposit in the lease area & water deposit surrounding the lease area as shown in KML file.
- 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 bridge from the boundary of the lease area.

ITEM NO. 08

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR ALLIABAD SAND QUARRY OVER AN AREA OF 12.50 ACRES OR 5.058 HA. BEARING KHATA NO.610, PLOT NO.328/1310 IN VILLAGE ALLIABAD, TAHASIL- GANJAM, DISTRICT GANJAM BY SRI KRUPASINDHU MUDULI- EC

1. This proposal is for environmental clearance for Alliabad sand quarry over an area of 12.50 acres or 5.058 Ha. bearing Khata no.610, Plot No.328/1310 in village Alliabad, Tahasil- Ganjam, District Ganjam of Sri Krupasindhu Muduli.
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. The mining lease granted by Tahasildar, Ganjam, has been auctioned and leased out to the successful bidder Sri. Krupasindhu Muduli, At – Ramakrushna Nagar, 2nd Lane, Brahmapur, Dist – Ganjam. 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. The proposed project activity will be carried out in the bed of the river Rushikulya.
4. Mining plan was approved by Joint Director of Geology, South Zone, Berhampur vide letter no 419 dated 05.04.2022.
5. **Public hearing details:** Public hearing was successfully executed on date 18.11.2022 over the Vacant Land in Khata No 593/483, Plot No 304/2292, Mouza Alliabad under Ganjam Tahasil of Ganjam District. Issues raised were plantation, proper maintenance of road, local employment, water sprinkling for dust suppression and speed of transporting vehicles shall be controlled and shall be covered with tarpaulins. Budget for Public Hearing Issues are as follows- Rs 1,01,000 have been allocated for the development of greenbelt which will be done in the second (II) year of mining and Rs. 1,58,000 for proper maintenance of road.
6. **TOR details:** Terms of Reference (ToRs) was issued by SEIAA, Odisha vide reference No: 4563/SEIAA; dated: 19.05.2022.
7. **Location and connectivity:** The mine lease area is located in Village- Alliabad, Tehsil- Ganjam, District- Ganjam, State- Odisha is on Khata No. 610, Plot No. 328/1310 of Rushikulya river covered in the Survey of India Topo Sheet No – 74A/14 & 74E/3 and is bounded between the Latitude - 19° 23' 36.40" N to 19° 23'45.03" N and Longitude – 85° 01' 48.65" E to 85° 01' 56.55" E. Ganjam Railway Station is situated approx 1.67 km towards South direction. Biju Patnaik International Airport is approx 125.19 km towards NE direction. NH-16 is approx 1.38 km in SE direction. SH-36 is approx 7.55 km in SW direction. Ranibara Reserve Forest is approx.5.5 Km NE.
8. There are no Biosphere reserves or Wildlife Sanctuaries or National Parks or Important bird areas (IBAs) or other ecologically sensitive areas within 10 Km from the boundary of the project site

- 9. Topography and drainage:** Drainage system in the region is dendritic. General flow direction of Rushikulya River is from NW to SE. Work will continue only during summer months when there is no water in the leasehold. The maximum depth of mining will be of 2m or up to water table whichever is less.
- 10. Replenishment report:** 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 13493.76 m³, 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 68440 m³. As it is a new mine no excavation has done in this year. So, total minable reserve available for mining is 81933.76 m³ whereas, approved production capacity for the year is 12,000 m³.
- 11. Reserves and production:** Proposed sand quarry is scheduled to produce at 12,000 cum/year (maximum) for the plan period. Geological reserve is 81460 cum/annum and mineable reserve is 68440 cum/annum

Year	Vol. of Sand in (cum)
1st	12,000
2nd	12,000
3rd	12,000
4th	12,000
5th	12,000
Total	60,000

- 12. Mining method:** The sand will be excavated by Open Cast Manual Method. Since the depth of mining is 2.0 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 2.0 m. The mine will be developed in North to South direction. At the end of plan period the quarry floor will be 03 m RL.
- 13. Water requirement:** The one-time water demand will be around 5.93 KLD, out of which 0.18 KLD is required for domestic purpose and 4.74 KLD for dust suppression. The water demand will be met from nearby village.

Activity	Calculation	Round off Figure in KLD
Drinking	@ 10 lpcd per labor 10*18/1000= 0.18 KLD	0.18
Dust Suppression	Total approach road to be water sprinkled = 790 m 790 m*6m*0.5 *2 times/1000= 4.74 KLD	4.74

Plantation	505 plant (during plan period) @ 2 L/per plant= 505*2lts= 1010/1000= 1.01 KLD	1.01
Total		5.93

- 14. Power requirement:** All the activities will be carried out manually i.e. loading the trucks/trolley/carrying vehicles manually by the working people. There is no power requirement for the project.
- 15. Baseline study:** 24 hr hourly monitoring was carried out for SO₂, NO_x, PM_{2.5} & PM₁₀ twice a week at each station for a study period of 3 months (March to May 2022). Ambient Air Quality Monitoring reveals that the minimum & maximum concentrations of PM₁₀ for all the 7 AQ monitoring stations were found to be 59.37 µg/m³ at AQ2 and 90.09 µg/m³ at AQ1, respectively. The minimum & maximum concentrations of PM_{2.5} were found to be 23.74 µg/m³ at AQ2 and 49.33 µg/m³ at AQ1, respectively. As far as the gaseous pollutants SO₂ and NO_x 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 5.52 µg/m³ at AQ4 & 17.8 µg/m³ at AQ7, respectively. The maximum & minimum concentrations of NO_x were found to be 26 µg/m³ at AQ7 & 9.53 µg/m³ at AQ2, respectively. Samples collected from identified locations indicate the soil is sandy type and the pH value ranging from 7.15 to 7.64, which shows that the soil is alkaline in nature. Potassium is found to be from 49.57 mg/kg to 253.56 mg/kg. The water holding capacity is found in between 26.94 % to 32.09%. Noise monitoring reveals that the maximum & minimum noise levels at day time were recorded as 61.75 Leq. dB (A) at NQ1 & 40.75 dB (A) at NQ6, respectively. The maximum & minimum noise levels at night-time were found to be 49.94 dB (A) at NQ1 & 35.74 dB (A) at NQ5.
- 16. Greenbelt:** About 505 number of trees will be planted along approach road & in village during the first year and will be maintained remaining years as per the below table. Plantation will be done with suitable local species like Teak, Mango, Neem, Jammun, Jhaun etc after consultation with the local authorities.

Year	No of plants along both side of approach road	No. of plants At other place like school premises, Aangawadi, Panchayat bhavan	Total Plantation
1 st	250	255	505
2 nd	Maintenance	Maintenance	Maintenance
3 rd			
4 th			
5 th			

Total	250	255	505
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17. **Manpower requirement:** A total of 18 nos. of manpower are to be employed in the lease area for mining 12,000 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.
18. **Project cost:** Estimated cost of the project is 50 Lakhs. Capital cost of EMP is Rs. 4.59 Lakhs and recurring cost is Rs. 2.83 Lakhs. Budget allocated for Corporate Environmental Responsibility (CER) is 1 lakh.

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	1,01,000	50,000
4.	Maintenance of haul road	1,58,000	63,000
Total		4,59,000	2,83,000

19. **Environment Consultant:** The Environment consultant **M/s 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 & M Solution, Noida** along with the project proponent, the SEAC recommended the followings:

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

- a) The span and length of the nearest railway bridge and road bridge and exact distance from Rushikulya bridge.
- b) Certificate from concerned DFO that proposed sand mining activity will not affect the turtle nesting grounds.

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

- i. Distance of the turtle nesting ground.
- ii. Environmental settings of the lease area.

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- iii. Mining activity, if any carried out in the lease area.
- iv. Road connectivity to the lease area.
- v. Distance of the road and railway bridge from the boundary of the lease area.
- vi. Cluster approach if any.
- vii. Distance of embankment from sand deposit.

ITEM NO. 09

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR KALIAGUDA & BADABORASINGI STONE QUARRIES CLUSTER OVER AN AREA OF 68.825 ACRES OR 27.853 HECTARE IN THE VILLAGE KALIAGUDA & BADABORASINGI, TAHASIL BELLAGUNTHA, DISTRICT GANJAM, STATE ODISHA BY SRI MANAS RANJAN PRADHAN (SUBMITTED UNDER CLUSTER APPROACH WITH TOTAL CLUSTER AREA 27.853 HECTARES CONSISTING OF 2 STONE QUARRIES) - TOR

1. This proposal is for Terms of Reference for Kaliaguda & Badaborasingi stone quarries cluster over an area of 68.825 acres or 27.853 hectare in the Village Kaliaguda & Badaborasingi, Tahasil Bellaguntha, District Ganjam, State Odisha of Sri Manas Ranjan Pradhan (submitted under cluster approach with total cluster area 27.853 Hectares with consisting of 2 stone quarries).
2. **Category:** The proposed project of under total cluster area 68.825 Acres or 27.853 Ha of 2 stone quarries and falls under Category- "B" item 1(a) - Mining of Minerals as per EIA Notification 2006 of the Ministry of Environment Forests & Climate Change, New Delhi & Their amendments thereof.
3. The Kaliaguda Stone quarry lease has been granted by the Tahasildar, Bellaguntha to the applicant Sri Manas Ranjan Pradhan for mining of stone for 5 years and it doesn't come under DLC land as certified by the Tahasildar, whereas Badaborasingi stone quarry has not been auctioned yet. And hence the applicant is Tahasildar, Badaborasingi.
4. Mining plans has been approved by the Joint director of Geology, O/o Joint director of Geology South Zone, Berhampur dated 28th March,2022 vide Memo no.365 and Memo no.354.
5. **Location and connectivity:** The quarry area is in SW part of Village Kaliaguda & Badaborasingi, under Bellaguntha Tahasil of Ganjam district, Odisha State. Kaliaguda - A & Badaborasingi Stone Quarry Cluster area forms a part of Survey of India Toposheet No. E45A98 (74A/9). The Badaborasingi Stone Quarry is in Khata no. 1037 and plot no.4315,4417 and 4459 and Kaliaguda - A stone quarry is in Khata no. 950 and plot no.4340. The cluster area is bounded between the Latitude -19°49'02.73"N to 19°49'25.75"N and Longitude - 84°34'09.55"E to 84°34'42.50"E. The cluster is accessible from state head quarter Bhubaneswar by covering 170 km and District headquarters Chatrapur at a distance of 67 Km. The quarry is at 8 Km away in NE from the state highway is SH-30. The nearest railway station is Khallikote Railway station

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Environmental Scientist, SEAC

located at a distance 63.00 km from the quarry area. Nearest Reserve forest is Dumudumi East RF at 1.70km in SW. Nearest river embankment is a distance of 6.80km in NE. Nearest sanctuary is Lakhari valley wildlife sanctuary is at a distance of 44.50km in SW. Nearest habitation is

6. There are no National Parks/Sanctuaries/Tiger-Elephant Reserves as per 'Wildlife Protection Act,1972' within 10 km radius from proposed mine site.
7. **Reserves:** Total geological reserves and mineable reserves of the cluster is 5482353cum (Kaliaguda - A = 997249cum + Badaborasingi Stone Quarry = 4485104cum) and 3725958cum (Kaliaguda - A = 506800cum + Badaborasingi Stone Quarry = 3219158cum) respectively.
8. **Mining method:** Stone in the quarry area will be excavated by conventional method of opencast mining through the formation of safe benches which is semi-mechanized and on single shift basis. Benches are formed and worked in a top to downward manner. Because of presence of hard and competent rock mass, drilling and blasting is performed for loosening of the rock mass. Height of the quarry benches are kept at 5m and the width will 5m. The individual bench faces are kept nearly vertical (85°) whereas the overall quarry slope angle (the angle between the line joining the toe of bottom bench and the crest of the top bench with the horizontal) is maintained at around 45° with the horizontal.
9. **Total Production:** The maximum production of construction stone from this Cluster quarries are **6350 cu.m/annum and total production 31750cum.**

Plan Period	Name of Quarry	Maximum Production (cum)	Waste (cum)
5 Years	Kaliaguda Stone Quarry – A Plot No. 4340 , (5.603 Ha)	3150	350
5 Years	Badaborasingi Stone Quarry Plot no. 4315,4417 &4459, (22.250 Ha)	3200	800
Total	2 Nos. Quarries	6350	1150
Total production from cluster		31,750	5750

10. **Water requirement:** A total of water requirement of 6 KLD is proposed for this project.

Activity	Calculation	Round off Figure in KLD
Drinking	@ 10 lpcd per labor $30 \times 10 / 1000 = 0.30$ KLD	0.30

Dust suppression	Total haulage road to be water sprinkled = 850m $850 \times 3 \times 2 / 1000 =$ 5.100 KLD	5.10
Plantation	500 plant in five year In one year $500/5 = 100$ plant (80% survival rate) @ 5 L/per plant = $100 \times 5 = 500/1000 =$ 0.50 KLD	0.50
Total		5.90KLD ~ 6.00 KLD

11. **Solid waste management:** During plan period 5750 cum of waste will be generated from the total cluster area. Considering swell factor as 1.2 the total broken volume will be 6900 cu.m. For dumping these waste materials, a proposed dump has been suggested in the NW part of quarry area covering an area of 0.100 Ha.
12. **Greenbelt:** Green belt shall be developed along the boundary of stone quarry area with the native tree species. The plantation proposal has been given to plant around 500 saplings over an area of 0.30 ha in the auctioned area. Species likely to be planted are Chakunda, Neem etc. as per the availability. Spacing between the saplings will be kept 2.5 meters x 2.5 meters only.
13. **Manpower requirement:** Total number of employments will be around 30 (for all quarry sites of Kaliaguda & Badaborasingi Stone Quarries) including management, supervisory personnel, skilled, semi-skilled and unskilled.
14. **Project cost:** The estimated cost of project for cluster will be 0.5crore and CER budget is 2 lakhs.
15. **Environment Consultant:** The Environment consultant **M/s Cognizance Research India Private Ltd.** along with the proponent made a presentation on the proposal before the Committee.

Considering the information / documents furnished by the proponent and presentation made by the consultant **M/s Cognizance Research India Private Ltd**, the SEAC prescribed the following specific ToRs in addition to standard ToRs in cluster approach as per **Annexure – B** for conducting detailed EIA study.

- i. Installation of STP of adequate capacity and requisite design.
- ii. Traffic study duly vetted by reputed institution.
- iii. Green belt in safety zone of each mine and all-round the clusters to be confirmed with details.
- iv. Arrangement of pipeline sprinkling (permanent water line) to be explored and confirmed.

- v. Silt management and SoP for the same to arrest /remedy of silt ingress to surrounding agricultural lands.
- vi. Kisam of land to be submitted.
- vii. Safety measures during blasting including provision of warning to be submitted.
- viii. Vegetation status of the site from DFO with joint verification along with Tahasildar as the site is full of vegetation.


Member Secretary, SEAC

**CONDITIONS TO BE STIPULATED IN ENVIRONMENTAL CLEARANCE FOR
RBI GREENFIELD DATA CENTER AND ENTERPRISE LEVEL TRAINING INSTITUTE
AT IDCO PLOTS NO. S5-H-05, EMC PARK, INFOVALLY II, JANLA, BHUBANESWAR
OVER AN AREA 18.55 ACRES, KHORDHA OF SRI SANTOSH KUMAR BEHERA- EC**

PART A - SPECIFIC CONDITIONS:

1. Consent to Establish / Operate for the project shall be obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.
2. The approval of the Competent Authority shall be obtained for structural safety of buildings due to earthquakes, adequacy of firefighting equipment etc. as per National Building Code including protection measures from lightning etc.
3. The project proponent shall obtain all necessary clearance/ permission from all relevant agencies including town planning authority before commencement of work. All the construction shall be done in accordance with the local building byelaws.
4. The project proponent shall ensure that the guidelines for building and construction projects issued vide this Ministry's OM NO.19-2/2013-IA.III dated 9th June, 2015, are followed to ensure sustainable environmental management.
5. The proponent shall obtain prior clearance from the Standing Committee of the National Board for Wild Life if the project will be located within any Eco-Sensitive Zone of Wild Life Sanctuary.

TOPOGRAPHY AND NATURAL DRAINAGE

6. The natural drain system should be maintained for ensuring unrestricted flow of water. No construction shall be allowed to obstruct the natural drainage through the site, on wetland and water bodies. Check dams, bio-swales, landscape and other Sustainable Urban Drainage Systems (SUDS) are allowed for maintaining the drainage pattern and to harvest rain water. Buildings shall be designed to follow the natural topography as much as possible. Minimum cutting and filling should be done.
7. The permission from competent authority will be obtained to discharge the excess storm water to drain if any. The proponent shall renovate the existing drain to accommodate the discharge and maintain it perennially.
8. Permission for construction of drain alongside the adjacent NH under construction for allowing the proponent to discharge the treated waste water as well excess runoff water during monsoon from NH Authority shall be obtained. The construction of drains shall be synchronized with the completion of the construction of the Housing Project.

WATER REQUIREMENT, CONSERVATION, RAIN WATER HARVESTING, AND GROUND WATER RECHARGE

9. As proposed, fresh water requirement from IDCO water shall not exceed 85KLD.
10. A certificate shall be obtained from the local body supplying water, specifying the total annual water availability with the local authority, the quantity of water already committed the quantity of water allotted to the project under consideration and the balance water available.

This should be specified separately for ground water and surface water sources, ensuring that there is no impact on other users.

11. The quantity of fresh water usage, water recycling and rainwater harvesting shall be measured and recorded to monitor the water balance as projected by the project proponent. The record shall be submitted to the Regional Office, MoEF&CC and SEIAA, Odisha along with six monthly Monitoring reports.
12. Installation of dual pipe plumbing for supplying fresh water for drinking, cooking and bathing etc. and other for supply of recycled water for flushing, landscape irrigation, car washing, thermal cooling, conditioning etc. shall be done.
13. Use of water saving devices/ fixtures (viz. low flow flushing systems; use of low flow faucets tap aerators etc.) for water conservation shall be incorporated in the building plan.
14. Separation of grey and black water should be done by the use of dual plumbing system. In case of single stack system separate recirculation lines for flushing by giving dual plumbing system be done.
15. Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred.
16. The local bye-law provisions on rain water harvesting should be followed. If local bye-law provision is not available, adequate provision for storage and recharge should be followed as per the Ministry of Urban Development Model Building Byelaws, 2016. Rain water harvesting recharge pits of 18 nos. shall be provided.
17. Any ground water dewatering should be properly managed and shall conform to the approvals and the guidelines of the CGWA in the matter. Formal approval shall be taken from the CGWA for any ground water abstraction or dewatering. The proponent shall also obtain permission from Water Resources Department, Govt. of Odisha for drawl of water.
18. The proponent shall keep one bore well as standby domestic water source once municipal water supply is made available in the project area.

SOLID WASTE MANAGEMENT

19. The provisions of the Solid Waste (Management) Rules, 2016, E-Waste (Management) Rules, 2016, and the Plastics Waste (Management) Rules, 2016 shall be followed.
20. Disposal of muck during construction phase shall not create any adverse effect on the neighbouring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.
21. Separate wet and dry bins must be provided in each unit and at the ground level for facilitating segregation of waste. Solid waste shall be segregated into wet garbage and inert materials. Wet garbage shall be composted in Organic Waste Converter. Adequate area shall be provided for solid waste management within the premises which will include area for segregation, composting. The inert waste from group housing project will be sent to dumping site.
22. Any hazardous waste generated during construction phase, shall be disposed off as per applicable rules and norms with necessary approvals of the State Pollution Control Board.

23. A certificate from the competent authority handling municipal solid wastes, indicating the existing civic capacities of handling and their adequacy to cater to the Municipal Solid Waste generated from project shall be obtained.

SEWAGE TREATMENT PLANT

24. Sewage shall be treated in STP of capacity 200 KLD. The treated effluent from STP shall be reused for flushing, horticulture & Filter backwash.
25. Excess treated water shall be discharged to the drain only after getting the permission from the concerned authority. The proponent shall renovate the existing drain to accommodate the discharge and maintain it perennially. To this effect the proponent has to give a legal affidavit before going for construction activity.
26. A certificate from the competent authority shall be obtained for discharging treated effluent/ untreated effluents into the Public sewer/disposal/drainage systems along with the final disposal point.
27. Separate large recharge pits shall be constructed inside the project area to accommodate the rainwater in case the housing project period and the CDP of the Govt. does not synchronize with reference to construction of road and drain.
28. No sewage or untreated effluent water would be discharged through storm water drains.
29. The installation of the Sewage Treatment Plant (STP) shall be certified by an independent expert and a report in this regard shall be submitted to the SEIAA, Odisha before the project is commissioned for operation. Periodical monitoring of water quality of treated sewage shall be conducted. Necessary measures should be made to mitigate the odour problem from STP.
30. Sludge from the onsite sewage treatment, including septic tanks, shall be collected, conveyed and disposed as per the Ministry of Urban Development, Central Public Health and Environmental Engineering Organization (CPHEEO) Manual on Sewerage and Sewage Treatment Systems, 2013.
31. The proponent shall obtain permission from the concerned authority to discharge the liquid waste to any drain i.e. the competent authority of the drain and "Nala" before commencement of any activity at the project site.

ENERGY

32. Compliance with the Energy Conservation Building Code (ECBC) of Bureau of Energy Efficiency shall be ensured. Buildings in the States which have notified their own ECBC, shall comply with the State ECBC. Outdoor and common area lighting shall be LED. Concept of passive solar design that minimize energy consumption in buildings by using design elements, such as building orientation, landscaping, efficient building envelope, appropriate fenestration, increased day lighting design and thermal mass etc. shall be incorporated in the building design. Wall, window, and roof u-values shall be as per ECBC specifications.
33. Energy conservation measures like installation of CFLs / LED for the lighting the area outside the building should be integral part of the project design and should be in place before project commissioning. Used CFLs, TFL and LED shall be properly collected and disposed off/sent for recycling as per the prevailing guidelines/rules of the regulatory authority to avoid mercury contamination.

34. Solar, wind or other Renewable Energy shall be installed to meet electricity generation equivalent to 5% of the demand load or as per the state level/ local building bye-laws requirement, whichever is higher. Follow super ECBC requirement of ECBC 2017 and provide compliance report.
35. Solar power shall be used for lighting in the apartment to reduce the power load on grid. Separate electric meter shall be installed for solar power. Solar water heating shall be provided to meet 20% of the hot water demand of the commercial and institutional building or as per the requirement of the local building bye-laws, whichever is higher. Residential buildings are also recommended to meet its hot water demand from solar water heaters, as far as possible.
36. Use of environment friendly materials in bricks, blocks and other construction materials, shall be required for at least 20% of the construction material quantity. These include Fly Ash bricks, hollow bricks, AACs, Fly Ash Lime Gypsum blocks, compressed earth blocks, and other environment friendly materials. Fly ash should be used as building material in the construction as per the provision of Fly Ash Notification of September, 1999 and amended as on 27th August, 2003 and 25th January, 2016. Ready mixed concrete must be used in building construction.
37. A certificate of adequacy of available power from the agency supplying power to the project along with the load allowed for the project shall be submitted.

AIR QUALITY AND NOISE

38. Construction site shall be adequately barricaded before the construction begins. Dust, smoke & other air pollution prevention measures shall be provided for the building as well as the site. These measures shall include screens for the building under construction, continuous dust/ wind breaking walls all around the site (at least 3-meter height). Plastic/tarpaulin sheet covers shall be provided for vehicles bringing in sand, cement, murrum and other construction materials prone to causing dust pollution at the site as well as taking out debris from the site. Sand, murrum, loose soil, cement, stored on site shall be covered adequately so as to prevent dust pollution. Wet jet shall be provided for grinding and stone cutting. Unpaved surfaces and loose soil shall be adequately sprinkled with water to suppress dust.
39. All construction and demolition debris shall be stored at the site (and not dumped on the roads or open spaces outside) before they are properly disposed. All demolition and construction waste shall be managed as per the provisions of the Construction and Demolition Waste Rules, 2016. All workers working at the construction site and involved in loading, unloading, carriage of construction material and construction debris or working in any area with dust pollution shall be provided with dust mask.
40. **Notification GSR 94(E) dated 25.01.2018 of MoEF&CC regarding Mandatory Implementation of Dust Mitigation Measures for Construction and Demolition Activities for projects requiring Environmental Clearance shall be complied with.**
41. The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution. Low sulphur diesel shall be used. The location of the DG set and exhaust pipe height shall be as per the provisions of the Central Pollution Control Board (CPCB) norms.

42. For indoor air quality the ventilation provisions as per National Building Code of India shall be provided.
43. Ambient noise levels shall conform to residential standard both during day and night as per Noise Pollution (Control and Regulation) Rules, 2000. Incremental pollution loads on the ambient air and noise quality shall be closely monitored during construction phase. Adequate measures shall be made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB / SPCB.

GREEN COVER

44. No tree cutting/transplantation of existing trees has been proposed in the instant project. A minimum of 1 tree for every 80 m² of land should be planted and maintained. The existing trees will be counted for this purpose. The landscape planning should include plantation of native species. The species with heavy foliage, broad leaves and wide canopy cover are desirable. Water intensive and/or invasive species should not be used for landscaping. As proposed approx. 1871.96 sqm (20 %) of plot area shall be provided for green area development.

TOP SOIL PRESERVATION AND REUSE

45. Topsoil should be stripped to a depth of 20 cm from the areas proposed for buildings, roads, paved areas, and external services. It should be stockpiled appropriately in designated areas and reapplied during plantation of the proposed vegetation on site.

TRANSPORT

46. A comprehensive mobility plan, as per Ministry of Urban Development best practices guidelines (URDPFI), shall be prepared to include motorized, non-motorized, public, and private networks. Road should be designed with due consideration for environment, and safety of users. The road system can be designed with these basic criteria.
 - Hierarchy of roads with proper segregation of vehicular and pedestrian traffic.
 - Traffic calming measures
 - Proper design of entry and exit points.
 - Parking norms as per local regulation
47. A detailed traffic management and traffic decongestion plan shall be drawn up to ensure that the current level of service of the roads within a 05 kms radius of the project is maintained and improved upon after the implementation of the project.
48. This plan should be based on cumulative impact of all development and increased habitation being carried out or proposed to be carried out by the project or other agencies in this 05 Kms radius of the site in different scenarios of space and time and the traffic management plan shall be duly validated and certified by the State Urban Development department and the P.W.D./ competent authority for road augmentation and shall also have their consent to the implementation of components of the plan which involve the participation of these departments.
49. Vehicles hired for bringing construction material to the site should be in good condition and should have a pollution check certificate and should conform to applicable air and noise emission standards be operated only during non-peak hours.

50. A dedicated entry/exit and parking shall be provided for commercial activities.
51. Barricades shall be provided around project boundary.
52. Speed of the vehicles shall be restricted upto 15 kmph by erecting speed bumps at regular intervals at project site and proper signage shall be provided for guided vehicular movement and speed restrictions.
53. Parking shall be prohibited on the access road to the proposed project site.
54. Footpath shall be seamless with sufficient width.
55. No vehicles shall be allowed to stop and stand in front of the gate on main access.
56. A buffer of minimum 10 m shall be maintained between the entry/exit gate and the road to avoid traffic congestion.
57. The Traffic Management Plan prepared by the proponent shall be duly validated and certified by the State Concerned Competent Authority and shall have also their consent before implementation.

ENVIRONMENT MANAGEMENT PLAN

58. An Environmental Management Plan (EMP) shall be prepared and implemented to ensure compliance with the environmental conditions specified above. A dedicated Environment Monitoring Cell with defined functions and responsibility shall be put in place to implement the EMP. The environmental cell shall ensure that the environment infrastructure like Sewage Treatment Plant, Landscaping, Rain Water Harvesting, Energy efficiency and conservation, water efficiency and conservation, solid waste management, renewable energy etc. are kept operational and meet the required standards. The environmental cell shall also keep the record of environment monitoring and those related to the environment infrastructure.

OTHERS

59. Provisions 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.
60. A First Aid Room shall be provided in the project both during construction and operations of the project.
61. The company shall draw up and implement corporate social Responsibility plan as per the Company's Act of 2013.
62. As per the MoEF&CC, Govt. of India Office Memorandum F.No.22-65/2017-IA.III dated 1st May 2018, the project proponent is required to prepare and implement Corporate Environment Responsibility (CER) Plan. As per para 6(II) of the said O.M. appropriate funds shall be earmarked for the activities such as infrastructure creation for drinking water supply, sanitation, health, education, skill development, roads, cross drains, electrification including solar power, solid waste management facilities, scientific support and awareness to local farmers to increase yield of crop and fodder, rain water harvesting, soil moisture conservation works, avenue plantation, plantation in community areas etc. The activities proposed under CER shall be restricted to the affected area around the project. The entire

activities proposed under the CER shall be treated as project and shall be monitored. The monitoring report shall be submitted to the regional office as a part of half yearly compliance report, and to the District Collector. It should be posted on the website of the project proponent.

PART B – GENERAL CONDITIONS

1. A copy of the Environmental Clearance letter shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industries centre and Collector's Office/ Tehsildar's office for 30 days.
2. The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to the SEIAA, Odisha and MoEF&CC, Govt. of India and its concerned Regional Office.
3. Officials from the Regional Office of MoEF&CC, Bhubaneswar who would be monitoring the implementation of environmental safeguards should be given full cooperation, facilities and documents/data by the project proponents during their inspection.
4. In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by the SEIAA, Odisha.
5. The SEIAA, Odisha reserves the right to add additional safeguard measures subsequently, if found necessary, and to take action including revoking of the environment clearance under the provisions of the Environmental (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time bound and satisfactory manner.
6. All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, the Forest Conservation Act, 1980 and the Wildlife (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponents from the respective competent authorities.
7. These stipulations would be enforced among others under the provisions of the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and the EIA Notification, 2006.
8. The project proponent shall advertise in at least two local Newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded Environmental Clearance and copies of clearance letters are available with the State Pollution Control Board and may also be seen on the website of the SEIAA, Odisha. The advertisement shall be made within Seven days from the date of receipt of the Clearance letter and a copy of the same shall be forwarded to the Regional Office of MoEF&CC, Bhubaneswar.
9. 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.
10. A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parisad / Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The

clearance letter shall also be put on the website of the company by the proponent.

11. The proponent shall submit/upload six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF&CC, Govt. of India, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; SPM, RSPM, SO₂, NO_x (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the project shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.
12. The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective Regional Offices of MoEF&CC, Govt. of India by E-mail.

TERMS OF REFERENCE FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY IN CLUSTER APPROACH AND INFORMATION TO BE INCLUDED IN THE EIA/EMP REPORT FOR KALIAGUDA & BADABORASINGI STONE QUARRIES CLUSTER OVER AN AREA OF 68.825 ACRES OR 27.853 HECTARE IN THE VILLAGE KALIAGUDA & BADABORASINGI, TAHASIL BELLAGUNTHA, DISTRICT GANJAM, STATE ODISHA BY SRI MANAS RANJAN PRADHAN (SUBMITTED UNDER CLUSTER APPROACH WITH TOTAL CLUSTER AREA 27.853 HECTARES CONSISTING OF 2 STONE QUARRIES)

1. Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.
2. A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.
3. Green Belt for individual mines.
4. Common haulage road for cluster
5. Permanent sprinkler system.
6. Separate chapter on year wise generation of waste, use and storage.
7. Details of silt management so that it don't affect nearby agricultural land.
8. Provision for installation of STP, if possible.
9. Traffic study report.
10. Fencing all around each quarry.
11. Detail land schedule plot wise with kissam of land duly certified by DFO that no DLC land involve in the lease area.
12. Permission from Tahasildar/private land owners for plantation of tress.
13. All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.
14. All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/Topo sheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
15. Information should be provided in Survey of India Topo sheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.
16. Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.

17. It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.
18. Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.
19. The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.
20. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
21. Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given. Proposal for Common Non-Mineralized Zone for dumping of rejects / OB.
22. A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.
23. Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.
24. Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.
25. The vegetation in the RF / PF areas in the study area, with necessary details, should be given.
26. A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.
27. Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by

Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.

28. A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.
29. Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered.
30. Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).
31. R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.
32. One season (non-monsoon) [i.e. March - May (Summer Season); October - December (post monsoon season) ; December - February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM₁₀, particularly for free silica, should be given.
33. Air quality modelling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modelling should be provided. The air quality contours may be shown on a location map

clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.

34. Environment Impact Assessment / Environment Management Plan document shall be in accordance with the provisions & generic structure stipulated in the EIA Notification 2006 dated 14.09.2006 & subsequent amendments.
35. EIA-EMP document shall be based on the maximum achievable mineral extraction of the mine and according to the impact of mines in cluster (within 500m) of the said mine.
36. EIA-EMP document shall include complete profile of the all the Project Proponent, implementing organization of mines in cluster (within 500m) of the said mine.
37. EIA-EMP document shall cover land description of project site (plot/survey / khasara number, village, tehsil, district, state & extent of land involved), of mines in cluster (within 500m) of the said mine.
38. EIA-EMP document shall include deposit conditions working depth mining scheme, details of machinery, backfilling of mine pit with type of blasting, drilling and explosives.
39. The general features such as surface drainage, mineral transportation and process flow of beneficiation plant, power and water supply shall be indicated.
40. The baseline environmental status within 10km radius from the boundary limit of mining lease area (buffer zone) and core zone with respect to air, water, noise and soil shall be covered of mines in cluster(within 500m) of the said mine.
41. Baseline data generation for one season (post monsoon) with respect to air, water, noise and soil shall be generated on the same sampling locations for obtaining EC
42. EIA-EMP document shall include land use pattern including agriculture, forest land, water bodies and settlements.
43. Existence of National Park, Wild Life sanctuary, migratory routes of wild animals within 10 km of mine lease area shall be brought out.
44. Topographical map of study area (core & buffer zone -10 km from the boundary of core zone) showing major topographical features shall be included.
45. EIA-EMP document shall include biological environment (flora and fauna) and socio-economic environment within the study area.
46. EIA-EMP document shall include anticipated impacts on land, air, noise and water environment and the mitigation measures of mines in cluster (within 500m) of the said mine.
47. Environmental Monitoring Programme and the environment management plan shall also be covered measures of mines in cluster (within 500m) of the said mine.
48. The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.
49. Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
50. Description of water conservation measures proposed to be adopted in the Project should

be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.

51. Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.
52. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.
53. Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.
54. Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and BGL. A schematic diagram may also be provided for the same.
55. A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.
56. Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.
57. Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.
58. Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.
59. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
60. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.

61. Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
62. Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.
63. Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.
64. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
65. The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
66. A Disaster management Plan shall be prepared and included in the EIA/EMP Report.
67. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
68. Besides the above, the below mentioned general points are also to be followed
 - a) All documents to be properly referenced with index and continuous page numbering.
 - b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
 - c) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.
 - d) Where the documents provided are in a language other than English, an English translation should be provided.
 - e) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.
 - f) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J- 11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.
 - g) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.
 - h) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.

- i) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.
69. **This Terms of References (TORs) is valid for a period of four years from the date of issue of TORs for submission of the EIA/EMP report.**