

**PROCEEDINGS OF THE MEETING OF STATE LEVEL EXPERT APPRAISAL
COMMITTEE, ODISHA HELD ON 29TH AUGUST 2023**

The SEAC met on 29th August 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.

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

Draft proceedings of the meeting was finalized by the members through e-mail and final proceedings 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 KHEMABEDA DECORATIVE STONE MINES OVER AN AREA OF 4.755HA. TOTAL CLUSTER AREA 9.696 HA) IN VILLAGE KHEMABEDA, TAHASIL BOIPARIGUDA, DISTRICT KORAPUT OF SRI HOTHAVENKATESH - EC

1. This proposal is for Environmental Clearance for Khemabeda Decorative stone mines over an mining lease area of 4.755Ha. The Total cluster area is 9.696 Ha. located in village Khemabeda, Tahasil - Boipariguda, District - Koraput of Sri Hotha Venkatesh.
2. **Category:** As per EIA Notification, 2006 and subsequent amendments the project falls under Category B1 under Schedule of item of 1(a) - Mining of Minerals.
3. Letter of Intent from Govt. of Odisha, Dept. of Steel & Mines, has issued vide letter no. 1484 / S&M, Bhubaneswar, on dated **08.02.2021** for grant of mining lease of 4.755 Ha.
SM-NC2-MC0002-2021
4. Successful bidder is Sri Hotha Venkatesh residing at H. No. 16.31-IXMI-203 9th Phase, Near Community Ground, KPHB colony, Hyderabad for a period of 30 years.
5. The Mining Plan along with the PMCP for 4.755 ha. was approved by Director of mines, Bhubaneswar vide letter No. MXXII-(b) 12/2021 9441/DM dated 02.12.2021.

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6. This source is not present in the DSR report of the district, as this is newly demarcated source by mining department.
7. Another mine i.e., Khemabeda Decorative stone over an area of 4.941Ha. is located within the 500m from the proposed project so the project comes under cluster approach with total area of 9.696Ha. Cluster certificate has been issued by Mining officer, Koraput, Odisha.
8. **TOR details:** Approved Terms of Reference (TOR) was issued by SEIAA, Odisha vide letter no. 5085/SEIAA (SEIAA File No. SIA/OR/MIN/73400/2022), Odisha dated 02.08.2022.
9. **Public hearing details:** The public hearing of Khemabeda Decorative Stone mines cluster was conducted on Dtd.08.02.2023 at 11:00 A.M. at village Khemabeda under Boipariguda Tahasil of Koraput, Odisha. Major issues raised during the meeting are: - protection of agricultural land due to vehicles movement, construction of boundary wall and mandap for village Temple, school boundary, drinking water supply to villages and school, employment of local youths / villagers on priority basis in the Mines, construction of school for children, Installation of mobile tower so that the children will online education, repair of road in the area, Yearly health camps and plantation activities in the area, Guard walls on the bridge, Ambulance facilitation. Budget allocated towards public hearing is 22.66 Lakhs.
10. **Location and connectivity:** Khemabeda Decorative Stone mines cluster is situated at Village Khemabeda No.200, Tahasil - Boipariguda, District - Koraput, Odisha State. The proposed project area of 4.755Ha. is bearing Khata No. 315, Plot No-1355/p and the other mine area of 4.941Ha. is bearing Khata no. 315, Plot No-1355,1356,1360. The cluster area is coming under Parbat Kissam and type of land is Abada Ajogya Anabadi. The project site falls in survey of India Toposheet no.65J/6 (E44K6).The area of 4.755Ha. having geo coordinates as follows - latitudes 18°38'09.67" N to 18°38'15.09 N & longitudes 82°24'5.59" E to 82° 24'16.79" E. The other mine area of 4.941Ha. have geo coordinates as latitudes 18°38'13.9" N to 18° 38'21.8" N & longitudes 82°24'18.6" E to 82°24'26.8". The nearest railway station is Koraput Railway Station at an aerial distance of 37 Km. The lease area can be approached from NH- 5 & SH- 25 at 38 Km & 6.2 Km. The nearest water body is Nagavalli River at 8.2 Km and nearest Reserved Forest is Dasamatpur RF – 5.0 Km and nearest Village is Khemabeda Village – 2.5 Km. The Project is not located within Eco-Sensitive Zone (ESZ) or Eco-Sensitive Area (ESA) notified by the MoEF&CC. The nearest sanctuary is Karlapat Wildlife Sanctuary is situated 98km distance from the lease area.
11. **Reserves and total production:** Total geological reserves of the 4.755Ha. mine will be 358480 cum and mineable reserves is 252128.40cum. Total geological reserves of the 4.941Ha. mine will be 579955 cum and mineable reserves is 425181cum. Total production in 5years is 3500cum and cluster production will be 4700cum/annum.
12. **Mining method:** Opencast semi mechanized method with the deployment of Machines like Jack Hammer Drill, Compressor, Hydraulic Excavators & Tippers will be adopted for excavation of the mine. Volume of Decorative Stone will be 700 (cum)/annum. Maximum depth of excavation will be up to 630mRL and ground level is at 610mRL. The loaded vehicles will cover distance of approximately 10km to meet SH 25.
13. **Waste generation and management:** Total intercalated waste from proposed Granite during 5 years of plan period is 13440m³. Out of total waste, 40% of the waste will be used for construction

and maintenance of the road i.e., 5376m³. Remaining 806 m³ waste will be dumped in the dump area at an average height of 2.5m in an area of 3301m³.

14. **Water Requirement:** Total water requirement is 7 KLD out of which dust suppression is 2 KLD, Plantation is 3 KLD and drinking/ domestic is 2 KLD.
15. **Power Requirement:** DG set will be used for total power requirement.
16. **Baseline Study:** Baseline study conducted in period March 2022 to May 2022.

PERIOD	March to May 2022	Applicable Standards
Air Quality Parameters At 8 Locations	PM _{2.5} – 16.7 to 30.6 µg/cum	60 µg/cu.m
	PM ₁₀ – 34.3 to 56.2µg/cum	100 µg/cu.m
	SO ₂ – 5.2 to 9.9 µg/cum	80 µg/cu.m
	NO _x – 9.1 to 19.5 µg/cum	80 µg/cu.m
Ground water Quality at 5 Locations	pH – 6.6 to 7.3	6.5 to 8.5
	Total Hardness – 36 to 72 mg/l	600 mg/l
	Chloride - 10.0 to 18.0 mg/l	250 mg/l
	Fluorides – 0.05 to 0.96 mg/l	1.5 mg/l
	TDS – 80 to 140 mg/l	1000 mg/l
	Heavy metals : BDL (Cd <0.001, As <0.01, Hg<0.0001) mg/l Detection limits of analysis method	Heavy metals: (Cd <0.003, As <0.01, Hg<0.001) mg/l
Surface water at 2 locations	pH – 6.7 to 7.0	
	Dissolved Oxygen – 7.1 to 7.5mg/l	
	Biochemical Oxygen Demand – 1.5 to 2.5 mg/l	
	Chemical Oxygen demand – 6 to 15 mg/l	
Noise at 8 locations	Day (dBA Leq)- 35.9 to 45.7	55
	Night (dBA Leq) - 29.0 to 36.1	45
Soil Quality at 4 locations	pH – 6.10 to 6.7, Potassium – 43 to 87.4 kg/Ha., Phosphorous –19.8 to 40.8 kg/Ha., Total Organic Carbon % – 0.85 to 0.98, Electrical Conductivity - 65 to 80 µs / Cm.	

17. **Greenbelt Development:** During the period of 5years there are 2500no. of saplings will be planted both sides of the road and safety zone of the project side.
18. **Manpower:** Total 47 no. of employees will be required for the cluster and for the proposed mine manpower requirement is 22 nos.

19. **Project Cost & EMP cost:** Project cost of the cluster is Rs. 500 Lakhs. For Environment management Plan: Capital cost of the project 6.0 lakhs per each mine and recurring cost is 6.2 lakhs per each mine.

20. **Environment Consultant:** The Environment consultant **M/s Kalyani Laboratories Private Limited, 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 Private Limited, Bhubaneswar** along with the project proponent, the SEAC decided to take the decision on the proposal after receipt of the following from the proponent

- a) Rectify the discrepancy between the lease area mention in Approval Letter of Mining Plan (4.775 ha.) and area applied for EC i.e., 4.755 ha. and revise the same from the mining officer.
- b) The proponent shall ensure that the topsoil excavated shall be stored in an earmarked area and the same shall be used in waste land filling along with plantation on it. A detailed proposal to this effect to be submitted.
- c) Copy of DSR with inclusion of proposed sairat source in DSR.

ITEM NO. 02

PROPOSAL FOR ENVIRONMENTAL CLEARANCE FOR BAITARINI SAND BED, HABALESWAR OVER AN AREA OF 5.26 HA AT MOUZA - HABALESWAR UNDER HATADIHI TAHSIL OF KEONJHAR DISTRICT OF SRI KRUSHNA CHANDRA SWAIN - EC

The project proponent was absent for the meeting. The SEAC decided to defer the proposal to next SEAC meeting.

ITEM NO. 03

PROPOSAL FOR ENVIRONMENTAL CLEARANCE FOR BALIA SAND BED, OVER AN AREA OF 12.850ACRES/5.20HA. LOCATED AT KHATA NO. 1054 & 786, PLOT NO. 2605 & 01, IN VILLAGE BALIA AND ALADIGAON, TAHASIL - PURUSHOTTAMPUR, DISTRICT - GANJAM OF SRI SARAT BEHERA - EC

The SEAC observed that as per KML file submitted for the proposal, the lease area is on the concave side of the river / erosion prone side of the riverbank. The transportation route for sand suggested by project proponent covers major part of the river bed which is also not feasible. Hence SEAC decided to reject the proposal due to environment sensitive point of view, because if the sand mining is permitted for the proposed lease area, it will lead to more floods in that region.

ITEM NO. 04

PROPOSAL FOR ENVIRONMENTAL CLEARANCE FOR NILAKANTHAPADA SAND QUARRY OVER AN AREA OF 54.20 ACRES OR 21.934HA. BEARING KHATA NO. 72, PLOT NO. 762(P) IN VILLAGE - NILAKANTHAPADA, TAHASIL - ATHAMALLIK, DISTRICT - ANGUL OF SRI APOLLO KUMAR GARNAYAK - EC

1. This proposal is for Environmental Clearance for Nilakanthapada Sand Quarry over an area of 54.20 acres or 21.934Ha. bearing Khata No. 72, Plot No. 762(P) in Village - Nilakanthapada, Tahasil - Athamallik, District - Angul of Sri Apollo Kumar Garnayak.
2. **Category:** As per EIA Notification, 2006 and subsequent amendments the project falls under Category B1 under Schedule of Item no. 1(a) - Mining of Minerals.
3. The Mining Lease has been granted vide letter no. 762, dated 01.03. 2021. The Successful Bidder is Sri Apollo Kumar Garnayak, At - Arakhakud, Thakurgarh, PS - Thakurgarh, District - Angul, Odisha.
4. The Mining Plan of Nilakanthapada Sand Quarry has been approved by Deputy Director of Geology, O/o The Joint Director of Geology, Zonal Survey, Dhenkanal, Odisha vide letter no.1247, dated 20.11.2020.
5. Mining lease is an identified sairat source in the DSR Report, Page no. 28, Sl. No. 41.
6. The **Terms of Reference (TOR)** letter was issued by SEIAA, Odisha vide letter No. 3997/SEIAA dated 07.02.2022.
7. **Location and connectivity:** The mine lease area is located in Village – Nilakanthapada, Tahasil – Athamallik, District – Angul, is on Khata No. 72, Plot No. 762/P of Mahanadi River and covered in the Survey of India Topo Sheet No – F45S/6. The geo coordinates of the lease area are: Latitudes - 20°44'46.2"N to 20°44'58.5"N and Longitudes 84°26'59.1"E to 84°27'29.1"E. The Kism of land is Nadi. The Nearest National Highway is NH-57 which is at a distance of approx. 9.40 km in SW direction. The Nearest State Highway is SH-62 which is at a distance of approx. 1.80 km in NE direction. The Nearest Airport is Biju Patnaik International Airport which is at a distance of approx. 152.3 km towards ESE direction. The Project lies on the River Mahanadi. The Nearest Reserve Forest is Nuagan RF which is at a distance of 5.86 Km in North direction. Taliapathar RF which is at a distance of 9.15 Km in North direction. The Nearest Road Bridge is near Nuabhuin Road Bridge over Kiakata River at a distance of 6.30 Km in SE Direction. The Nearest Rail Bridge is at a distance of 28.40 Km. The Nearest River Embankment is near Nuabhuin Road Bridge over Kiakata River at a distance of 6.30 Km in SE Direction. The Nearest Electric Transmission Line Pole is at a distance of 1.20 Km in NE direction from the Lease Area. The Nearest Habitation is 0.61 Km in the North direction.
8. **Public Hearing** was conducted on dated 22.09.2022 at Nilakanthapada village, under Athamallik Tahasil of Angul District, Odisha. Issues raised during public hearing are: Employment opportunity to local villagers, plantation in village, movement of vehicles causes dust pollution so as to arrest dust suppression water sprinkling should be done, maintenance and repairing of the road and Peripheral Development of the village. Budget for Corporate Environmental Responsibility (CER) is Rs. 6 lakhs and for environment protection measures Rs.9, 73, 600 as capital cost and Rs. 2, 83, 000 as recurring cost.

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9. **Baseline Study** was conducted during March, 2022 to May, 2022

- **Ambient air quality:** The Ambient Air Quality Monitoring reveals that of seven monitoring stations the minimum concentrations of PM10 are 59.37 µg/m³ at AQ2 and maximum 90.09 µg/m³ at AQ1. The results of PM2.5 reveal that the minimum concentration of 23.74µg/m³ is recorded at AQ2, while maximum concentration of 49.33µg/m³ is found at AQ. As far as gaseous pollutants SO₂ and NO_x are concerned, the minimum concentrations of SO₂ are 5.52 µg/m³ at AQ4 and maximum 17.8 µg/m³ at AQ7. The minimum & maximum concentrations of NO_x are found to be 9.53 µg/m³ at AQ2 and 26 µg/m³ at AQ7 respectively.
- **Ground water :** pH varies from 7.28 to 7.63 during study period. Total hardness varies from 239 mg/l to 264 mg/l during study period. Total dissolved solids vary from 340 mg/l to 354 mg/l during study period are found within permissible limits & fit for consumption.
- **Surface water :** pH ranges between 7.18 to 7.80. Dissolved Oxygen (DO) was observed in the range of 6.5 to 6.9 mg/l against the minimum requirement of 4 mg/l. BOD values were observed to be in the range of 4.0 – 4.2 mg/l. are found within permissible limits & fit for consumption.
- **Noise study :** 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.

10. **Total Reserves and Proposed Production:** The total Geological Reserves 438680 cum and Mineable Reserves is 403926 cum and the proposed production for the Project is 60,000 cum/year.

Year	Vol. of Sand in (m ³)
1 st	60,000
2 nd	60,000
3 rd	60,000
4 th	60,000
5 th	60,000
TOTAL	3,00,000

11. **Mining Method:** The Method of Mining will be opencast Manual Method. Extraction and loading into truck & Tractor will be done by manual means. The transportation from Sand Quarry site to destination shall be achieved by dumper/tractor. The proposed depth of mining is 2 Meters as per approved mining plan.

12. **Replenishment study details:** The Replenishment study was done during Pre- and Post-Monsoon Period (June 2022 & January 2023) by Physical Method Survey which was conducted with the help of Total Station Survey Instrument and two numbers of GPS (GARMIN eTrex 10) hand held GPS. After the Replenishment study it was found that 94,000 cum of sand have been proposed to be replenished annually.

13. **Water requirement:** Total Water Requirement will be 12.75KLD for the proposed project.

Activity	Calculation	Round off Figure in KLD
Drinking	@ 10 lpcd per labor $10*33/1000= 0.33$ KLD	0.33 KLD
Dust Suppression	Total approach road to be water sprinkled = 1340 m $1340m*6m*0.5*2$ times/1000= 8.04 KLD	8.04 KLD
Plantation	2193 plant @ 2 L/per plant= $2193*2$ lts= 4386/1000= 4.38 KLD	4.38 KLD
Total		12.75 KLD

14. **Greenbelt Development:** 2193 plants are proposed to be planted for the proposed site.

15. **Manpower requirement:** 33 nos. of persons are required to be employed in this proposed project.

16. **Project Cost** – The total estimated cost for the proposed project is 3 Crores. EMP Cost includes Capital Cost of 9.736 Lakhs and Recurring Cost of 2.83 Lakhs.

Table: CSR Cost

Sl. No.	Activity	Capital Cost (in Rs.)/Annum
i)	Financial aid for medical camp in Nilakanthapada village. @ Rs. 50,000/ camp (2 camp in a year)	1,00,000
ii)	Installation of Solar LED Lights in Nilakanthapada village.	1,00,000
iii)	Financial Aid for community hall and school in Nilkanthapada village	2,00,000
iv)	Construction of separate (for boys & girls) toilets in school of Nilakanthapada village (50,000/toilet)	1,00,000
v)	Distribution of sports kits to the students of Nilakanthapada village @ Rs. 5000/kit	1,00,000
TOTAL		6,00,000

17. **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 decided to take the decision on the proposal after receipt of the following from the proponent

- In Form-F, the area mentioned is 70.70 acres and for Environmental Clearance the area applied is 54.20 acres. Discrepancy in area needs clarification, with revise Form-F to be submitted.
- Talcher is one of the Sampling Locations selected for study of biological environment. But Talcher is 98 Kms far from Athamalik Tahasil. The project proponent shall clarify the same and submit the revise EIA document.
- An issue was raised during public hearing that there is another sand quarry i.e., Khadarapada Sand Quarry exists within 100meters from the proposed sand quarry. The District Administration

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shall clarify why two single quarries has been considered? Therefore, the project proponent shall furnish the distance certificate of Khadarpada quarry from Nilakanthapada quarry duly certified by Tahasildar to rule out the cluster approach.

- d) Mineable reserve should be calculated / worked out to further 60% of the modified lease area.
- e) The Geological and Mineable reserve has mentioned same figures. Rectify and submit the revised data of geological and mineable reserves.
- f) NOC from concerned DFO /the concerned authority that the proposed project will not affect Gharial habitat of that area.

ITEM NO. 05

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR KANAKA SAND BED OVER AN AREA OF 31.211 HA. (SUBMITTED UNDER CLUSTER APPROACH WITH TOTAL LEASE AREA OF 35.43 HA.) IN VILLAGE KANAKA, TEHSIL PURUSHOTTAMPUR, DISTRICT GANJAM OF SRI KRUPASINDHU MUDULI – EC.

1. This proposal is for Environmental Clearance for Kanaka Sand Bed over an area of 31.211 ha. (Submitted under cluster approach with total lease area of 35.43 ha.) in village Kanaka, Tehsil Purushottampur, District Ganjam of Sri Krupasindhu Muduli.
2. **Category:** As Per EIA Notification, 2006 and subsequent amendments the project falls under Category B1 under Schedule of item of 1(a) - Mining of Minerals.
3. The Mining Lease has been granted vide letter no 1635 date 04/05/2022. The Successful Bidder is Sri Krupasindhu Muduli, S/o- Sri Jhuriya Muduli, At- Ramakrushna Nagar, 2nd Lane, Lochapada, Berhampur.
4. The Mining plan has been approved by the Deputy Director Geology, O/o The Joint Director of Geology (S.Z) on dated 29.03.2022.
5. The present proposal is a new mine shown as an identified source in the DSR of the Ganjam district. SI No 01; Page No 63.
6. The Terms of Reference (TOR) has been granted by SEIAA; Odisha vide letter No. 5348/SEIAA Dated 02.09.2022.
7. **Location and connectivity:** The mine lease area is located in Village - Kanaka, Tahasil- Purushottampur, District - Ganjam, Odisha, is on Khata no- 472, Plot no- 865, 865/1012 & 785/1013 of Rushikulya river. The lease area is covered in the Survey of India Topo Sheet No – 74A/14 & 74A/15 and geo coordinates are Latitudes -19°30'10.47" N to 19°30'25.53" N and Longitudes – 84°51'09.09" E to 84°52'07.06" E. The Kisam of land is Nadi. The Nearest National Highway is NH-16 which is at a distance of approx 21.65 km in East direction. The Nearest State Highway is SH-32 which is at a distance of approx 1.40 km in East direction. The Nearest distance of approach road is 0.26 Km. The Nearest Airport is Biju Patnaik International Airport which is at a distance of approx 130.30 km towards NE direction. The Nearest Reserve Forest is Taratarini RF which is at a distance of 4.50 Km in ESE direction. Krishnagiri Reserve Forest, approx. 9.90 Km in NE. Ashuri Reserve Forest, approx. 7.70 Km in NNW. The Nearest Road Bridge is within the mining lease. The Nearest Rail Bridge is Ganjam Railway Bridge at a

distance of 21.00 Km. The Nearest River Embankment is at a distance of 0.20 Km from the lease boundary. The Nearest Electric transmission line is running within the mining lease.

8. **Public hearing** was conducted on 06.01.2023 at Kanaka village, under Purushottampur Tahasil of Ganjam District, Odisha. Issues raised during public hearing are accidents due to sand transportation through village roads, transporting trucks shall be properly covered with tarpaulin to avoid spillage, water sprinkling for dust suppression, protection of Environment, Mining of sand shall be restricted in submerged or water flow area to avoid water pollution and deposit of silts leading to growth of shrubs at river bed. Budget allocated for Corporate Environmental Responsibility (CER) of Proposed Kanaka Sand Bed is Rs.160000 and for cluster is Rs.180000 and Budget for Environmental Protection of Proposed Kanaka Sand Bed is Rs.659000 as capital cost and Rs. 383000 as recurring cost. Budget for Environmental Protection for cluster is Rs.778400 as capital cost and Rs. 666000 as recurring cost.
9. **Total reserves, production and Method of Mining:** The total Geological reserves is 564525cum and Mineable Reserves is 347575 cum and the Proposed Production of the Project is 1,00,400 cum/year. The Method of Mining will be opencast Manual Method. Extraction and loading into truck & Tractor will be done by manual means. The transportation from Sand Quarry site to destination shall be achieved by dumper/tractor. The Proposed depth of mining is 2.5 Meters as per approved mining plan.

Year	Vol. of Sand in (m ³)
1 st	100400
2 nd	100400
3 rd	100400
4 th	100400
5 th	100400
TOTAL	502000

10. **Replenishment study:** The Replenishment study was done during Pre- and Post-Monsoon Period (Nov 2022 & May 2022) by UAV/Drone survey (volumetric survey) method. After the Replenishment study it was found that 31,153.65 cum of sand have been proposed to be replenished annually.
11. **Baseline study:** Baseline Study conducted during March, 2022 to May, 2022.

a) **AIR ENVIRONMENT**

Ambient Air Quality Monitoring reveals that the minimum & maximum concentrations of PM10 for all the 8 AQ monitoring stations were found to be 51.59 µg/m³ at AQ7 and 94.69 µg/m³ at AQ1, respectively. The minimum & maximum concentrations of PM2.5 were found to be 22.65 µg/m³ at AQ4 and 56.05 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 5.36 µg/m³ at AQ4 & 26.12 µg/m³ at AQ1, respectively. The minimum & maximum concentrations of NO_x were found to be 10.01 µg/m³ at AQ7 & 34.88 µg/m³ at AQ1, respectively.

b) WATER ENVIRONMENT

➤ **Ground water:** Analysis results of ground water reveal the following: -

- pH varies from 7.16 at GW3 to 7.81 at GW4 during study period.
- Total hardness varies from 112 mg/l at GW2 to 161 mg/l at GW1 during study period.
- Total dissolved solids vary from 269 mg/l at GW5 to 344 mg/l at GW1 during study period.

➤ **Surface water**

- The analysis results indicate that the pH ranges between 7.32 and 7.58.
- Dissolved Oxygen (DO) was observed in the range of 6.2 to 7.1 mg/l against the minimum requirement of 4 mg/l.
- BOD values were observed to be in the range of 10-12 mg/l.
- The chlorides and Sulphates were found to be in the range.
- Based on the results it is evident that most of the parameters of the samples comply with 'Category 'B' standards of CPCB indicating their suitability for Drinking water source after conventional treatment and disinfection.

c) NOISE ENVIRONMENT

Noise monitoring reveals that the maximum & minimum noise levels at day time were recorded as 59.1 Leq. dB (A) at NQ2 & 48.6 Leq. dB (A) at NQ4, respectively. The maximum & minimum noise levels at night time were found to be 43.6 dB (A) at NQ7 & 38.2 dB (A) at NQ3. There are several other sources in the 10 km radius of study area, which contributes to the local noise level of the area. Traffic activities as well as activities in nearby villages and agricultural fields add to the ambient noise level of the area.

d) SOIL ENVIRONMENT

Samples collected from identified locations indicate the soil is sandy type and the pH value ranging from 6.56 to 6.98, which shows that the soil is alkaline in nature. Potassium is found to be from 50.8 mg/kg to 259.0 mg/kg. The water holding capacity is found in between 22.0 % to 28.8%.

12. **Water requirement:** Total Water Requirement is 7.97 ~ 8.0 KLD for the Proposed Project and 9.14 ~ 9.0 KLD for the Cluster Area.

13. **Greenbelt:** 3120 Plants are proposed to be planted for the Proposed Site.

14. **Manpower:** 89 nos of Manpower for the Proposed Project & 145 Manpower for the Cluster Area is required for the proposed project.

15. **Project cost:** Estimated cost of the proposed Project is Rs 80 Lakhs. EMP Cost includes Capital cost of 6.59 Lakhs and Recurring cost of 3.83 Lakhs. For Cluster Area EMP Cost includes Capital cost of Rs 7.784 Lakhs and Recurring cost of 6.66 Lakhs.

Sl. No.	Measures	Capital Cost (In Rs.)	Recurring Cost (In Rs.)
i)	Pollution Control Dust Suppression /Water Sprinkling	--	1,00,000
ii)	Pollution Monitoring i) Air pollution ii) Water pollution iii) Soil Pollution iv) Noise Pollution	--	50,000 40,000 20,000 10,000
iii)	Green belt development	6,24,000	1,00,000
iv)	Maintenance of haul road	35,000	63,000
Total		6,59,000	3,83,000

For cluster

Sl. No.	Measures	Capital Cost (In Rs.)	Recurring Cost (In Rs.)
i)	Pollution Control Dust Suppression /Water Sprinkling	--	2,00,000
ii)	Pollution Monitoring i) Air pollution ii) Water pollution iii) Soil Pollution iv) Noise Pollution	--	1,00,000 80,000 40,000 20,000
iii)	Green belt development	7,08,400	1,00,000
iv)	Maintenance of haul road	70,000	1,26,000
Total		7,78,400	6,66,000

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 decided to take the decision on the proposal after receipt of the following from the proponent

- a) Nearest Electric transmission line is running within the mining lease. Thus, submit details and dimension of Electric high transmission tower line.
- b) Submit actual area after excluding area from no mining zone for Bridge, electric transmission line and water channel present in lease area.
- c) Submit separate EMP budget for each quarry in the cluster for both Kanaka Sand Bed and Bhipur Sand Bed.

ITEM NO. 06

PROPOSAL FOR ENVIRONMENTAL CLEARANCE FOR TAIN SAR SAND QUARRY OVER AN AREA OF 48.42 ACRES OR 19.595 HA BEARING KHATA NO. 72, PLOT NO. 741 & 747(P) IN VILLAGE TAIN SAR, TAHASIL ATHMALLIK, DISTRICT ANGUL OF SRI APOLLO KUMAR GARNAYAK - EC

1. This proposal is for Environmental Clearance for Tainsar Sand Quarry over an area of 48.42 acres or 19.595 Ha. bearing khata No. 72, Plot No. 741 & 747(P) in village Tainsar, Tahasil Athmallik, District Angul of Sri Apollo Kumar Garnayak.
2. **Category:** As Per EIA Notification, 2006 and subsequent amendments the project falls under Category B1 under Schedule of item of 1(a) - Mining of Minerals.
3. The Mining Lease has been granted vide letter no 764 dated 01.03.2021. The Successful Bidder is Sri Apollo Kumar Garnayak, At - Arakhakud, Thakurgarh, PS - Thakurgarh, District - Angul, Odisha.
4. The Mining Plan of Tainsar Sand Quarry has been approved by Deputy Director of Geology, O/o The Joint Director of Geology, Zonal Survey, Dhenkanal, Odisha vide letter no 1251 dated 20.11.2020.
5. This is a new mine and mining lease is an identified sairat source in the DSR Report Page no. 22 SL.No. 40.
6. The Terms of Reference (TOR) letter was issued by SEIAA, Odisha vide letter No. 3667/SEIAA Dated 27.12.2021.
7. **Location and connectivity:** The mine lease area is located in Village – Tainsar, Tahasil – Athmallik, District – Angul, and is on Khata No. 72, Plot No. 741 & 747 of Mahanadi River. The project covered in the Survey of India Topo Sheet No – F45S/5 & F45S/6 and the geo coordinates are : Latitudes - 20°44'45.0" N to 20°45'03.5" N and Longitudes – 84°24'40.5" E to 84°25'01.2" E. The Kisam of land is Nadi. The Nearest National Highway is NH-57 which is at a distance of approx. 6.00 km in SW direction. The Nearest State Highway is SH-62 which is at a distance of approx. 4.20 km in NE direction. The Nearest distance of approach road is 1.5 Km. The Nearest Airport is Biju Patnaik International Airport which is at a distance of approx. 156.00 km towards East direction. The Nearest Reserve Forest is Nuagan RF which is at a distance of 8.5 Km in NNE direction. The Nearest Road Bridge is near Singarimunda Road Bridge over Manjore River at a distance of 7.80 KM in NW. The Nearest Electric Transmission Line Pole is at a distance of 1.50 Km in NE direction from the Lease Area.
8. **Public Hearing** was conducted on 20.09.2022 at Tainsar village, under Athamallik Tahasil of Angul District, Odisha. Issues raised during public hearing are dust suppression and water pollution control provision for maintenance and repair of village roads and speed restriction during school timing and strict adherence of sand mining guideline. Budget allocated for Corporate Environmental Responsibility (CER) of Proposed Tainsar Sand Quarry is Rs.4,00,000 and Budget for Environmental Protection is Rs.767000 as capital cost and Rs. 333000 as recurring cost.

9. **Total Reserves and Proposed Production:** The total geological reserves is 195950cum and Mineable Reserves is 182066 cum and the Proposed Production for the Project is 15,000 cum/year.

Year	Vol. of Sand in (m ³)
1 st	15,000
2 nd	15,000
3 rd	15,000
4 th	15,000
5 th	15,000
TOTAL	75,000

10. **Method of mining:** The Method of Mining will be opencast Manual Method. Extraction and loading into truck & Tractor will be done by manual means. The transportation from Sand Quarry site to destination shall be achieved by dumper/tractor. The Proposed depth of mining is 0.50 Meters as per approved mining plan.

11. **Replenishment study details:** The Replenishment study was done during Pre- and Post-Monsoon Period (June 2022 & January 2023) by Physical Method Survey which was conducted with the help of Total Station Survey Instrument and two numbers of GPS (GARMIN eTrex 10) handheld GPS. After the Replenishment study it was found that 15,255 cum of sand have been proposed to be replenished annually.

12. **Water requirement:** Total Water Requirement is 13.00 KLD for proposed project.

Activity	Calculation	Round off Figure in KLD
Drinking	@ 10 lpcd per labor 10*16/1000= 0.16 KLD	0.16
Dust Suppression	Total approach road to be water sprinkled = 1500 m 1500 m*6m*0.5 *2 times/1000= 9.0 KLD	9.0
Plantation	1960 plant (during plan period) @ 2 L/per plant= 1960*2lts= 3920/1000= 3.92 KLD	3.92
Total		13.08

13. **Baseline Study** conducted during March, 2022 to May, 2022.

a) **AIR ENVIRONMENT**

Ambient Air Quality Monitoring reveals that the minimum & maximum concentrations of PM10 for all the 7AQ monitoring stations were found to be 48.96 µg/m₃ at AQ₇ and 78.98 µg/m₃ at AQ₃, respectively. The minimum & maximum concentrations of PM_{2.5} were found to be 25.91 µg/m₃ at AQ₇ and 46.78 µg/m₃ at AQ₃, 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 6.39 µg/m₃ at AQ₇ & 11.21 µg/m₃ at AQ₃,

respectively. The minimum & maximum concentrations of NO_x were found to be 10.17 µg/m₃ at AQ₇ & 16.98 µg/m₃ at AQ₃, respectively.

b) WATER ENVIRONMENT

Ground water: Analysis results of ground water reveal the following: -

- pH varies from 7.29 at GW3 to 7.56 at GW5 during study period.
- Total hardness varies from 276 mg/l at GW1 to 324 mg/l at GW2 during study period.
- Total dissolved solids vary from 293 mg/l at GW3 to 378 mg/l at GW1 during study period.

Surface water

- The analysis results indicate that the pH ranges between 7.42 and 7.86.
- Dissolved Oxygen (DO) was observed in the range of 5.7 to 5.9 mg/l against the minimum requirement of 4 mg/l.
- BOD values were observed to be in the range of 3.6 – 3.9 mg/l.
- The chlorides and Sulphates were found to be in the range.
- Based on the results it is evident that most of the parameters of the samples comply with 'Category 'B' standards of CPCB indicating their suitability for Drinking water source after conventional treatment and disinfection.

c) NOISE ENVIRONMENT

Noise monitoring reveals that the maximum & minimum noise levels at day time were recorded as 58.6 Leq. dB (A) at NQ1 & 48.1 dB (A) at NQ2, respectively. The maximum & minimum noise levels at night time were found to be 42.4 dB (A) at NQ6 & 36.2 dB (A) at NQ2. There are several other sources in the 10 km radius of study area, which contributes to the local noise level of the area. Traffic activities as well as activities in nearby villages and agricultural fields add to the ambient noise level of the area.

d) SOIL ENVIRONMENT

Samples collected from identified locations indicate the soil is sandy type and the pH value ranging from 6.89 to 7.67, which shows that the soil is alkaline in nature. Potassium is found to be from 72.36 mg/kg to 84.69 mg/kg. The water holding capacity is found in between 28.72 % to 36.25 %.

14. Greenbelt development: Total 1960 plants has been proposed for the Proposed Project.

Year	No of plants along both side of approach road	No. of plants in buffer zone consulting local authorities	Location	Species
1 st	1500	460	Approach road –1500 nos – along both sides 1.5 km of approach road at spacing of 2 m.	Guava, mango, Jamun,
2 nd	Maintenance	Maintenance		
3 rd				
4 th				

Year	No of plants along both side of approach road	No. of plants in buffer zone consulting local authorities	Location	Species
5 th			Village area – 460 nos. In village area like school premises, Aangawadi, Panchayat bhavan	jhaun, neem etc.
Total	1500	460		
Total	1960			

15. **Manpower:** 16 nos of persons will be required as manpower for the proposed project.

16. **Project cost:** Estimated cost of the proposed Project is 2.0 Crores. EMP Cost includes a Capital cost of Rs. 7.67 Lakhs and Recurring cost of Rs. 3.33 Lakhs.

Sl. No.	Measures	Capital Cost (In Rs.)	Recurring Cost (In Rs.)
i)	Pollution Control Dust Suppression /Water Sprinkling	--	50,000
ii)	Pollution Monitoring		
	i) Air pollution		50,000
	ii) Water pollution	--	40,000
	iii) Soil Pollution		20,000
	iv) Noise Pollution		10,000
iii)	Green belt development	3,92,000	1,00,000
iv)	Maintenance of haul road	3,75,000	63,000
	Total	7,67,000	3,33,000

17. **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 decided to take the decision on the proposal after receipt of the following from the proponent

- In Form-F, the area mentioned is 50.80 acres and for Environmental Clearance the area applied is 48.42 acres. Discrepancy in area needs clarification, with revise Form-F to be submitted accordingly.
- Furnish the exact dates of Replenishment Study Survey.

ITEM NO. 07

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR AMBAPUA SAND QUARRY OVER AN AREA OF 6.377 HA PROJECT IS LOCATED AT KHATA NO. 694, PLOT NO. 01, 71, 71/2179 & 1289, IN VILLAGE AMBAPUA, TAHASIL - BELLAGUNTHA, DISTRICT – GANJAM OF SRI SUNIL KUMAR MOHANTY - EC

The project proponent was absent for the meeting. The SEAC decided to defer the proposal to next SEAC meeting.

ITEM NO. 08

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR KALINGADOLA SAND BED, OVER AN AREA 6.639 HA, KHATA NO- 270, PLOT NO- 575 AT- KALINGADOLA, TAHASIL- DIGAPAHANDI, DIST- GANJAM OF SRI PRAVA RANJAN MISHRA - EC

The SEAC observed that the project proponent has not submitted the Replenishment Study Report. The SEAC decided to defer the proposal to next SEAC meeting subject to submission of Replenishment study report.

ITEM NO. 09

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR BALALANGA STONE QUARRY - A, C, D SUBMITTED UNDER CLUSTER APPROACH FOR MINING OF ONE OVER AN AREA OF 12.148HA. LOCATED IN VILLAGE BALALANGA, TAHASIL - MANESWAR IN SAMBALPUR DISTRICT OF SRI AJAY TIWARI - EC

1. This proposal is for Environmental Clearance for Balalanga Stone Quarry - A, C, D submitted under Cluster approach for mining of one over an area of 12.148ha. located in village Balalanga, Tahasil - Maneswar in Sambalpur district of Sri Ajay Tiwari.
2. **Category:** As Per EIA Notification, 2006 and subsequent amendments the project falls under Category B1 under Schedule of item of 1(a) - Mining of Minerals.
3. The Mining Lease has been granted for Balalanga Stone Quarry A, vide letter no. 19, on dated 04.01.2022, Balalanga Stone Quarry C, vide letter no. 1250, on dated 04.08.2022 & Balalanga Stone Quarry D, vide letter no. 1212, on dated 29.07.2022. The Successful Bidder for Balalanga Stone Quarry A is Sri Abanikanta Panigrahy R/o Ainthapalli, Sambalpur. The Successful Bidder for Balalanga Stone Quarry C is Sri Sunil Mohapatra, R/o Dhanupalli, Sambalpur & the Successful Bidder for Balalanga Stone Quarry D is Sri Subhom Mohapatra, R/o Govindtola, Sambalpur.
4. The Mining Plan of Balalanga Stone Quarry has been approved by Deputy Director of Geology, O/o The Joint Director of Geology, Zonal Survey, Sambalpur on dated 04.01.2022.

S. No.	Name of Quarry	Lease area (Ha.)	Land Schedule	Kissam
i)	Balalanga Stone Quarry- A	2.355	Khata No- 69 Plot No - 449,803,805, 450(P)	Dungri and Pathar Chattan
ii)	Balalanga Stone Quarry- C	4.977	Khata No- 69 Plot No 817,845(P), 808	Dungri and Pathar Chattan

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S. No.	Name of Quarry	Lease area (Ha.)	Land Schedule	Kissam
iii)	Balalanga Stone Quarry- D	4.816	Khata No- 69 Plot No – 414(P)	Dungri and Pathar Chattan
Total		12.148		

5. Mining lease is an identified sairat source in the Revised DSR of Tahasildar Letter No.- 2782 on dtd.- 6/8/2022, Sl. No.- 4 in Annexure-3 of Balalanga- D and in existing DSR Sl. No.- 38 of Page no- 7 of Balalanga-C and Sl. No- 43, Page No.- 8 of Balalanga- A.
6. The **Terms of Reference (TOR)** has been granted by SEIAA, Odisha on 11th November 2022 through File No SIA/OR/MIN/82451/2022.

S. No.	Name of Quarry	Proponent	Lease Area (Ha.)	TOR Details
i)	Balalanga Stone Quarry- A	Sri Abanikanta Panigrahy	2.355	SIA/OR/MIN/82451/2022 Dated 11.11.2022
ii)	Balalanga Stone Quarry- C	Shri Sunil Mohapatra	4.977	SIA/OR/MIN/82451/2022 Dated 11.11.2022
iii)	Balalanga Stone Quarry- D	Shri. Subom Mohapatra	4.816	SIA/OR/MIN/82451/2022 Dated 11.11.2022
Total			12.148	

7. **Location and connectivity:** This present proposal of Balalanga Stone Quarry A, C & D (under total cluster area 12.148 Ha. of 3 stone quarries) is a stone (road metal) mining project consisting of a stone quarry which is located in village - Balalanga, Tahasil – Maneswar, District - Sambalpur of Odisha. The project is on Khata No.- 69, Plot No.- 449, 803, 805, 450(P) (Balalanga A), Plot No.- 817, 845(P), 808 (Balalanga C) & Plot No.- 414(P) (Balalanga D) and covered in the Survey of India Topo Sheet No. – F45 M3. The geo coordinates are: Latitudes -21° 23' 52.37" N to 21° 23' 43.92" N, Longitudes – 84° 01' 45.68" E to 84° 01' 55.85" E. The Kisam of land is Dungri & Pathar Chatan. The Nearest distance of approach road is 2720m. The Nearest National Highway is NH-55 which is at a distance of approx. 2.11 km in NE direction. The Nearest State Highway is SH-15 which is at a distance of approx. 4.57 km in SW direction. The Nearest Airport is Biju Patnaik International Airport which is at a distance of approx. 224 km towards SE direction. River Mahanadi which is at a distance of approx. 4.61 km in West direction. The Nearest Reserve Forest is Kendarapat RF, which is at a distance of approx. 3.59 km in NE direction; Baduapali RF, approx. 0.70 km in South direction; Jaduloisingh RF, approx. 6.27 km in South direction. Nearest road bridge is at a distance of approx. 0.81 km from Balalanga Stone Quarry - A. Nearest road bridge is at a distance of approx. 0.70 km from Balalanga Stone Quarry – C & nearest road bridge is at a distance of approx. 0.85 km from Balalanga Stone Quarry - D. Nearest railway bridge is at a distance of 2.67 km from Balalanga Stone Quarry – A, Nearest railway bridge is at a distance of 2.67 km from Balalanga Stone Quarry – C & Nearest railway bridge is at a distance of 2.84 km from Balalanga Stone Quarry - D. The Nearest River Embankment is at a distance of 2.55 Km from Balalanga Stone Quarry – A, The Nearest River Embankment is at a distance of 2.25 Km from Balalanga Stone Quarry – C & The Nearest River Embankment is at a distance of 2.84 Km from Balalanga Stone Quarry - D. The Nearest Electric Transmission Line Pole is at a distance of 1 Km from Balalanga Stone Quarry – A, The Nearest Electric Transmission Line Pole is at a distance of 1

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Km from Balalanga Stone Quarry – C & The Nearest Electric Transmission Line Pole is at a distance of 1 Km from Balalanga Stone Quarry - D. The Nearest Habitation is 0.83 Km in the South direction.

8. **Public hearing** was conducted on 11.04.2023 at 11.00 PM at Kudenisha School Building, Mouza- Balalanga, GP- Batemura, PS- Dhama of Sambalpur District. Provision of drinking water supply and construction of pond near Kudenisha village for bathing purpose were the issues raised during public hearing. Budget allocated for Corporate Environmental Responsibility (CER) of Proposed Tainsar Sand Quarry is Rs.2,80, 000 and Budget for Environmental Protection of whole cluster is Rs. 9,23,200 as capital cost and Rs. 11,30,000 as recurring cost.
9. **Total Reserves and Proposed Production:** The total Geological Reserves for the cluster is 9,58,933cum, Mineable Reserves for the cluster is 5,67,548.40cum, and the Proposed Production for the cluster is 18,800cum/year.

S. No.	Name of the Quarry	Geological Reserves (cum)	Mineable Reserves (cum)	Production (Cum/annum)
i)	Balalanga Stone Quarry - A	2,15,456	1,05,876	2,688
ii)	Balalanga Stone Quarry - C	3,35,189	1,16,946	8,056
iii)	Balalanga Stone Quarry - D	4,08,288	3,44,726.40	8,056
Total		9,58,933	5,67,548.40	18,800

10. **Mining Method:** Mining will be done by opencast semi-mechanized method with adoption of drilling & blasting. Mining will be done by deploying machines like jackhammer, drill compressor, rock breaker, excavator and tractors/trucks. The Proposed depth of mining is 3 Meters as per approved mining plan.

Year	Volume of stone		
	Balalanga Stone Quarry - A	Balalanga Stone Quarry - C	Balalanga Stone Quarry - D
1 st	2252	8056	8056
2 nd	2318	8056	8056
3 rd	2452	8052	8056
4 th	2520	8008	8056
5 th	2688	8008	8056
TOTAL	12230	40180	40280

11. **Waste generation:** Total waste generated for the cluster is 23,173 cum. Entire waste will be used in construction and maintenance of haulage road of the proposed quarry.

Year	Waste generation (cum)		
	Balalanga Stone Quarry - A	Balalanga Stone Quarry - C	Balalanga Stone Quarry - D
1 st	563	2014	2014

2 nd	580	2014	2014
3 rd	613	2013	2014
4 th	630	2002	2014
5 th	672	2002	2014
TOTAL	3058	10045	10070

12. **Water requirement:** Total Water Requirement for the proposed cluster project is 19.252 ~ 19.30KLD.

S. No.	Quarry	Round off Figure in KLD
i)	Balalanga Stone Quarry – A	7.30
ii)	Balalanga Stone Quarry – C	4.00
iii)	Balalanga Stone Quarry – D	8.00
Total		19.30

13. **Greenbelt development:** 1216 Plants are proposed to be planted for the Proposed Cluster.

Year	Green belt Nos.		
	Balalanga Stone Quarry - A	Balalanga Stone Quarry - C	Balalanga Stone Quarry - D
1 st year	Excavation for plantation		
2 nd year	236	498	482
3 rd year	Care & Maintenance		
4 th year			
5 th year			
Total	1216		

14. **Baseline study:** Baseline study has been conducted for Post Monsoon Season of 2022 i.e, Oct, 2022 to Dec 2022.

a) **AIR ENVIRONMENT**

Ambient Air Quality Monitoring reveals that the minimum & maximum concentrations of PM₁₀ for all the 7 AQ monitoring stations were found to be 40.24 to 63.79 µg/m³ with the 98th percentile ranging between 54.35 µg/m³ to 60.25 µg/m³.

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 20.28 µg/m³ to 32.42 µg/m³ with the 98th percentile ranging between 26.02 µg/m³ to 32.41 µg/m³.

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 7.23 to 14.28 µg/m³ with the 98th percentile ranging between 11.55 µg/m³ to 13.24 µg/m³. The minimum & maximum concentrations of NO_x were found to be 9.68 µg/m³ to 19.19 µg/m³ with the 98th percentile ranging between 15.10 µg/m³ to 21.23 µg/m³.

b) **WATER ENVIRONMENT**

Ground water: Analysis results of ground water reveal the following: -

- pH varies from 7.24 at GW4 to 7.86 at GW1 during study period.
- Total hardness varies from 219 mg/l at GW3 to 265mg/l at GW4 during study period.
- Total dissolved solids vary from 322 mg/l at GW4 to 405 mg/l at GW6 during study period.

Surface water

- The analysis results indicate that the pH ranges between 7.24 and 7.56.
- Dissolved Oxygen (DO) was observed in the range of 6.8 to 7.1 mg/l against the minimum requirement of 4 mg/l.
- BOD values were observed to be in the range of 4.0 - 4.3 mg/l.
- The chlorides and Sulphates were found to be in the range.
- Based on the results it is evident that most of the parameters of the samples comply with 'Category 'C' standards of CPCB indicating their suitability for Drinking water source after conventional treatment and disinfection.

c) **NOISE ENVIRONMENT**

Noise monitoring reveals that the minimum & maximum noise levels at day time were recorded as 48.7 Leq. dB (A) at NQ2 & 59.2 dB (A) at NQ1, respectively. The minimum & maximum noise levels at night time were found to be 37.6 dB (A) at NQ2 & 44.3 dB (A) at NQ1. There are several other sources in the 10 km radius of study area, which contributes to the local noise level of the area. Traffic activities as well as activities in nearby villages and agricultural fields add to the ambient noise level of the area.

d) **SOIL ENVIRONMENT**

Physical characteristics of soil were characterized through specific parameters viz bulk density, porosity, water holding capacity, pH, electrical conductivity and texture. Soil pH plays an important role in the availability of nutrients. Soil microbial activity as well as solubility of metal ions is also dependent on pH. In the study area, variations in the pH of the soil were found to be slightly alkaline (7.23 to 7.64). Electrical conductivity (EC) is a measure of the soluble salts and ionic activity in the soil. In the collected soil samples the conductivity ranged from 274- 320 µmhos/cm.

15. **Manpower requirement:** 50 nos. of persons will be employed for the proposed Cluster.

16. **Project Cost & EMP cost:** The Project Cost is Rs. 20 Lakhs and EMP Cost (Capital cost) is Rs. 3.222 Lakhs and EMP (Recurring cost) is Rs. 4.50 Lakhs for Balalanga Stone Quarry – A. The Project Cost is Rs. 60 Lakhs and EMP Capital cost is Rs. 2.146 Lakhs and EMP Recurring cost is Rs. 4.50 Lakhs for Balalanga Stone Quarry-C. The Project Cost is Rs. 60 Lakhs and EMP Capital cost is Rs. 3.864 Lakhs and EMP Recurring cost is Rs. 4.50 Lakhs for Balalanga Stone Quarry – D.

Budget for Environmental Protection (Cluster)


S. No.	Measures	Capital Cost (In Rs.)	Recurring Cost (In Rs.)
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i)	Pollution Control Dust Suppression /Water Sprinkling	--	6,00,000
ii)	Pollution Monitoring i) Air pollution ii) Water pollution iii) Soil Pollution iv) Noise Pollution	--	50,000 40,000 10,000 10,000
iii)	Green belt development	2,43,200	1,50,000
iv)	Maintenance of approach road	6,80,000	2,70,000
Total		9,23,200	11,30,000

17. **Environment Consultant:** The Environment consultant **M/s P & 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 decided to take the decision on the proposal after receipt of the following from the proponent

- a) Total cluster area is more than 5 ha. and DEIAA had granted Environmental Clearance earlier. The proponent has to clarify how DEIAA has granted Environmental Clearance with copy of Environmental Clearance of each lease.
- b) The proponent shall prepare for magazine management for the blasting procedure.
- c) Complete layout map showing the distance from catchment and periphery of the Hirakud reservoir.
- d) The proponent shall provide garland drain for the small lease area of the Quarry no. A.
- e) Rectify the discrepancy of surface level water table chart that's given as ground level water table.
- f) There is an elephant movement area in that region. During public hearing, issue raised that elephants destroy the rice paddy in their agricultural fields. The project proponent shall prepare a revise action plan with consultation with concerned DFO, regarding precautionary measures which could be undertaken towards it.
- g) Certificate from concerned DFO for exact distance of proposed cluster from the elephant corridor.
- h) The habitation is 230 metres away from the quarry. Thus, deep hole blasting is to be avoided and drilling and blasting is to be restricted to within 3m as per the approved mining plan. The project proponent is required to adopt adequate preventive measures against any hazards that might occur due to fly rocks and ground vibration. An undertaking to this effect is required to be submitted.


MEMBER SECRETARY, SEAC