PROCEEDINGS OF THE MEETING OF STATE LEVEL EXPERT APPRAISAL COMMITTEE, ODISHA HELD ON 12th DECEMBER, 2022

The SEAC met on 12th December, 2022 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	-	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
8.	Er. Fakir Mohan Panigrahi	-	Member
9.	Prof. (Dr.) B.K. Satpathy	-	Member
10.	Dr. K.C.S Panigrahi	-	Member
11.	Sri Jayant Kumar Das	-	Member

Draft proceedings of the meeting was finalized by the members through e-mail and also 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 OF ENVIRONMENTAL CLEARANCE FOR PROPOSED CHANGE IN PROCESS FOR IRON ORE BENEFICIATION PLANT OF THROUGHPUT 95000 TPA FOR WHICH EC WAS ALREADY GRANTED VIDE REF. NO. 6437/SEIAA, DATED 02.08.2013 AT TIRILIDIHI, BADAMPAHAR, DIST. – MAYURBHANJ FOR M/S. LAL TRADES AND AGENCIES PVT. LTD. OF SRI KUSHAL CHOUBEY – EC

The project proponent did not attend the meeting. The SEAC decided to defer the proposal to next meeting.

ITEM NO. 02

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR ENHANCEMENT IN PRODUCTION OF IRON ORE FROM 3,00,300 (0.3 MILLION) TPA TO 7,00,005 (0.7 MILLION) TPA ROM WITH TOTAL EXCAVATION OF 1.024 MILLION TPA (ROM OF 0.7 MILLION TPA + 0.324 MILLION TPA WASTE), SETTING UP TWO MOBILE CRUSHING OF 150 TPH CAPACITY EACH AND TWO MOBILE SCREENING UNITS OF 250 TPH CAPACITY EACH IN ADAGHAT IRON ORE MINES OVER AN AREA OF 15.074 HA. OF M/S NATIONAL ENTERPRISES IN VILLAGE- ADAGHAT UNDER BLOCK & TEHSIL: KOIDA, SUBDIVISION- BONAI IN DISTRICT: SUNDARGARH OF SRI CHARANJIT SINGH GREWAL - EC

1. This proposal is for environmental clearance for enhancement in production of Iron ore from 3,00,300 (0.3 million) TPA to 7,00,005 (0.7 million) TPA ROM with total excavation of 1.024 million TPA (ROM of 0.7 million TPA + 0.324 million TPA waste), setting up two mobile crushing of 150 TPH capacity each and two mobile screening units of 250 TPH capacity each

in Adaghat Iron ore mines over an area of 15.074 Ha. of M/s National Enterprises in village-Adaghat under Block & Tahasil: Koida, Subdivision- Bonai in District: Sundargarh of Sri Charanjit Singh Grewal.

2. The project falls under category "B" or activity 1 (a) - Mining of Minerals projects under EIA Notification dated 14th September 2006 as amended from time to time.

3. Mining lease for iron ore was granted in favour of M/s National Enterprises for 20 years vide letter no. 12730/SM dated 20.10.2000 of Dept. of Steel & Mines, Govt. of Odisha. Later as per MMDR Amendment Act, 2015 the lease deed was executed for entire lease area over 15.074 ha. on 11.01.2017 for a period of 50years from the date of execution.

4. Modified mining plan was approved by Regional Controller of Mines, Indian Bureau of Mines vide letter no- MPM/OTF-MECH/14-ORI/BHU/2010-11, dated 27-09-2010.

5. The Review of Mining Plan along with Progressive Mine Closure Plan has been approved for the period 2021-22 to 2025-26 by the same authority vide letter no- RMP/A/22-ORI/BHU/2020-21, dated 09-11-2020.

6. The entire Mining Lease area of 15.074 ha. is in DLC forest land.

7. Stage –II clearance for the forest land involved in the lease area has been issued by the Eastern Regional Office, Bhubaneswar of the MoEF & CC vide letter no. 5-ORC256/2015-BHU,dt. 05.08.2019.

8. Certificate under Forest Right Act has been issued by the Collector, Sundargarh for the forest land of 15.074 ha. in two phases.

9. As per the report of the DFO, Bonai Forest Division there is no violation under FC Act, 1980.

10. Due to presence of Indian Elephant & Sloth Bear (Schedule- I species), Site Specific Conservation Plan has been prepared with a budgetary provision of Rs 290.40 lakhs; which has been approved by the PCCF (Wildlife) vide Memo no. 4763/1WL(C)SSP-348/2012, dt 12th May, 2014.

11. Adaghat Iron Ore Mines has Environmental Clearance from SEIAA, Odisha vide letter no. 7695/SEIAA, dated 24.12.2019 for production of 3,00,300 (0.3 million) TPA of iron ore.

12. Consent to Operate has been issued by SPCB, Odisha for the same quantity vide letter no. no. 4943/IND-I-CON-6689, dated 29.03.2022, valid upto 31.03.2023.

13. Certified report on previous EC conditions was obtained from MoEF&CC, IRO, Bhubaneswar vide file no. 1083/22/EPE, dt 07.10.2022.

14. The present lessee has started the mining operation within the lease area for production of iron ore with effect from 04.01.2020. Now, the lessee has planned to enhance the produce of iron ore to maximum ROM of 7,00,005 (0.7 million) TPA (5,47,830 TPA of +55% grade iron ore and 1,52,175 TPA of +45 to +55% grade iron ore) with total excavation of 10,24,625 (1.024 million) TPA (ROM of 7,00,005 TPA + 3,24,620 TPA of waste) and setting up two mobile Crushers of 150 TPH capacity each & two mobile Screening Plants of 250 TPH Capacity each within the lease area.

15. **Location and connectivity**: The project is coming under village Adaghat of Bonai Sub-division in Sundargarh District and is at a distance of 8km from Koida town. The ML area is

covered under the SOI toposheet No. 73 G/5 and the geo coordinates are Latitude- 21° 55' 25.22002" N to 21° 55' 43.04502" N and Longitude - 85° 19' 07.43920" E to 85° 19' 48.30132" E. The project site is at a distance of 290km from Bhubaneswar; 28 km from Barbil railway station, 36km from Barsuan railway siding and 11km from Jaroli railway station & siding on Daitari-Bansapani line. Nearest airport is Veer Surendra Sai Airport, Jharsuguda at 180km away.

16. Drainage system of the area is dendrite type. The Suna Nadi is a tributary of Baitarani River which controls the drainages system of the area and flows due north in the region and then east to meet the Bay of Bengal. Apart from Suna /Kundra river, other major river /nala are Teherai nala (in South direction, 3km away), Kakarpani nala (in East direction, 4km away) and Karo river (in NW direction, 7.8km away).

17. There is no human settlement within the ML area. The area does not have any monuments of historical or archeological importance, pilgrimage, any place of tourist interest, national park, bird or wild life sanctuary.

18. The mining lease area coming under kissam "Pahad", which is entirely over DLC forest land. MoEF & CC, Govt. of India has granted Stage – II diversion for 15.074 ha. forest land, including safety zone of 1.40 ha. vide letter no. 5-ORC256/2015-BHU, dated 05.08.2019.

19. The Geological Reserve within the lease area is re-estimated to be 4.188 million tons whereas the Mineable Reserve is 3.949 million tons and production of mines as per given table:

Production Year	Total Excavation in MT	ROM in MT	Saleable Ore in MT	Mineral Rejects in MT	Intercalated Waste in cum
1st Year (2021-22)	4,39,603	3,00,323	2,35,035	65,288	69,640 (1,39,280 MT)
2nd Year (2022-23)	4,59,298	3,13,778	2,45,565	68,216	72,760 (1,45,520 MT)
3rd Year (2023-24)	6,12,060	4,18,140	3,27,240	90,900	96,960 (1,93,920 MT)
4th Year (2024-25)	7,87,840	5,38,200	4,21,200	1,17,000	1,24,800 (2,49,640 MT)
5th Year (2024-25)	10,24,645	7,00,005	5,47,830	1,52,175	1,62,320 (3,24,640 MT)

20. **Mining Process:** Open cast mechanized method of mining on single shift basis is proposed to excavate iron ore to gradually achieve the production target. Drilling and blasting will be adopted for loosening of hard rock mass by rock drill. Ore to waste ratio is 1: 1.5 (both in cum).

21. **Topography**: Applied mining lease area is mainly dominated by the hill slopes and belongs to a part of a NW-SE trending hill. North-eastern part of applied area is comparatively flat than south-western part. The altitude of the highest part of the area is 635m RL while that of the lowest part is 560m RL. The elevation difference is 75m. Forest growth is observed to be sparse in the places of in-situ iron ore exposures and dense on the float ores. A part of the area around float quarry and mine road is free from forest growth.

22. **Green belt:** During the conceptual period, 18280 nos. of plants will be planted on the backfilled area of 11.424 ha., which includes 2240 plantation as bench plantation over

exhausted benches of 1.4 ha. Apart from it, 1.4 ha. of the conceptual dump area will be terraced & plantation will be developed on each terrace; 0.25 ha. of mineral separation area will also be covered under plantation.

23. **Water requirement:** The maximum water requirement in the project will be 30 KLD; which will be drawn from Suna River with required permission. Out of the 30 KLD water, 2 KLD will be used for drinking and washing purposes, 25 KLD for dust suppression in haul road, screening & crushing area and 3 KLD will be consumed by plantation.

24. **Power requirement:** The supply of electrical energy for the mine site shall be received from CESCO. The approximate maximum power requirement for the mining complex (including office) shall be 500KVA.

25. **Public Consultation**: Public Hearing for Enhancement in Production from Adaghat Iron Ore Mines was conducted on 21.12.2021 at 11.00 A.M. in the open ground, near Hanuman Temple in Adaghat village in accordance with the MoEF, Govt. of India, EIA Notification No.SO-155 3(E) dt.14.09.2006. As per the demands, the project proponent has committed to take dust control measures, undertake plantation, give priority to local employment, to make concrete village road, provide bore well for drinking water, electrification of village road, etc. Rs 16 lakhs will be spent under CER for various socio-economic activities, whereas Rs 5 lakhs will be spent annually towards regular maintenance & recurring activities.

26. **Baseline study** of the study area was conducted during Summer season (March 2021 to May 2021). Following results were obtained:

    - Ambient Air Quality Monitoring made in 8 locations & results shows the values of PM_{10} – 60.8 µg/m3 - 81.3 µg/m3, $PM_{2.5}$ – 31.9µg/m3 – 42.5µg/m3, SO_2 – 5.8µg/m3 – 12.9µg/m3, NOx – 10.4 µg/m3 -18.8 µg/m3.
    - Noise Quality ranges from 40.2 dB(A) – 71.5 dB(A) during day time and 35.6 dB(A) – 42.3 dB(A) during night time.
    - Surface water quality monitored in 5 locations and pH range from 7.21 to 7.94., total dissolved solids – 144.8mg/L to 171.6 mg/L, Iron content ranges from 0.32 mg/L to 0.42 mg/L, Chloride content ranges from 31.9 mg/L to 34.9 mg/L, sulphate content ranges from 6.4 mg/L to 8.6 mg/L, BOD content ranges from 2.8 mg/L to <2.0 mg/L, Fluroide content ranges from 0.12 mg/L to 0.21 mg/L, Nitrate content ranges from 2.9 mg/L to 5.2 mg/L. Total coliforms ranges from 270 MPN/100ML to 1600 MPN/100ML. All other parameters were also found to be within the permissible limits.
    - Ground water quality monitored in 5 locations and pH ranges from 6.72 to 7.22., total dissolved solids ranges from 248mg/L to 294 mg/L, total Hardness as $CaCO_3$ ranges from 130 mg/L to 152 mg/L, total alkalinity ranges from 106 mg/L to 132 mg/L .Iron content ranges from 0.23mg/L to 0.26 mg/L, Chloride content ranges from 31 mg/L to 41 mg/L, sulphate content ranges from 21.7 mg/L to 29.1 mg/L, Fluroide content ranges from 0.11 mg/L to 0.27 mg/L, Nitrate content ranges from 2.1 mg/L to 4.1 mg/L. Magnesium content ranges from 10.21 mg/L to 13.12 mg/L. All other parameters were also found to be within the permissible limits.

- Soil quality measured in 5 locations and color of soil found to be reddish brown, texture of soil is sandy loamy, moisture content ranges from 5.4% to 8.2%, pH ranges from 5.84 to 6.31, Available Organic carbon (%) – 1.11 to 1.62 etc.

27. Land Use/ Land cover – The land utilization plan as per the table:

Type of land use	Existing Land use (in ha.)	At the end of Plan Period (in ha.)	At the end of Conceptual Period (in ha.)
Area under excavation	1.860	8.264	11.424
Overburden dump	0.100	1.30	1.40
Mineral storage	0.500	---	---
Infrastructure (office, canteen, rest shelter, weigh bridge, etc)	0.200	0.200	0.200
Road	0.200	0.200	0.400
Green belt in safety zone	0.400	1.000	1.400
Mineral Separation Plant	0.250	0.250	0.250
Sub-Total	**3.510**	**11.214**	**15.074**
Untouched area	11.564	3.860	---
Total	**15.074**	**15.074**	**15.074**

28. **Manpower:** All total 59 persons will have direct employment in the mines after proposed enhancement in production, which includes managerial /supervisory staff.

29. **Project Cost:** The project cost is estimated to be Rs 9 crores and there is a budgetary provision of Rs 135 lakhs as capital cost & Rs 40 lakhs as annual recurring cost towards environmental protection measures; which includes air pollution control measures like Installation & maintenance more Automatic Sprinklers, Purchase & maintenance of one more water tanker & machineries for water sprinkling, etc; water pollution control measures like Construction & maintenance of boulder wall and garland drain, Modification of existing settling ponds & it's collecting drains, Desilting of pond & drains, etc , noise pollution control measures training to employees, maintenance of vehicles, etc, Environment Monitoring and Management, Occupational Health and Green Belt Development and Maintenance.

30. The proponent along with the consultant **M/s Centre for Envotech and Management Consultancy Pvt. Ltd., Bhubaneshwar**, made a detailed presentation before the SEAC.

Considering the information furnished and the presentation made by the consultant, **M/s Centre for Envotech and Management Consultancy Pvt. Ltd., Bhubaneswar** along with the project proponent, the SEAC decided to take decision on the proposal after receipt of the following from the proponent followed by site visit of the Sub-Committee of SEAC:

1. The Site-Specific Wildlife Conservation Plan needs to be relooked in consultation with DFO & Chief Wildlife Warden and modified accordingly. Modified Site-Specific Conservation Plan to be submitted.
2. Quantitative and Qualitative classification of the Iron grade and waste.
3. Details of storage and usage of sub-grade Iron and dimension of OB dump.
4. Slope study for the OB dump should be done taking into consideration of rainfall data of past 100 years for stabilization of the dump.

5. Dimension of settling pond for Surface Run-Off Management along with photograph.

ITEM NO. 03

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR MAJHIGUDA NO. 57 DECORATIVE STONE DEPOSIT OVER 10.522 HECTARES OR 26.00 ACRES IN VILLAGE MAJHIGUDA NO. 57 UNDER KHAIRAPUT TAHASIL OF MALKANGIRI DISTRICT OF SRI KOTARU RAO (CLUSTER APPROACH - TOR)

1. The proposal was considered by the committee to determine the "Terms of Reference (ToR)" for undertaking detailed EIA study for the purpose of obtaining Environmental Clearance in accordance with the provisions of the EIA Notification, 2006 and amendment thereafter.
2. This proposal is for Terms of Reference (TOR) of Majhiguda No. 57 decorative stone deposit over 10.522 hectares or 26.00 acres in village Majhiguda No. 57 under Khairaput tahasil of Malkangiri district of Sri Kotaru Rao.
3. **Category** :This proposal falls under Category "B1", 1(a) - Mining of Minerals as the Mining lease area is more than 5.0 Ha. as per the EIA notification 2006 and its subsequent amendments.
4. Majhiguda Decorative Stone Deposit of 10.522 Ha. of M/s Bhubaneswari Granites is under cluster with other mine i.e., 14.016 Ha. of M/s KPK Granites is located in village Majhiguda under Khairaput Tahasil of Malkangiri District, Odisha. The total lease area of the cluster is 61.635 Ac or 24.538 Ha.
5. Mining leases are an identified sairat sources in the DSR Malkangiri, page no. 6, sl.no. 8 & 9.
6. The present proposal Majhiguda No. 57 Decorative Stone Deposit, over an area of 26.00 Acres or 10.522 Hectares was applied for grant of mining lease. Earlier, a Prospecting License was issued to the lessee in the same village over 10.522 Ha for carrying out prospecting to decipher potential of decorative stone. The PL was executed on 22.08.2016 and registered on 23.08.2016 for a period of two years. After completing the prospecting operation, Mining Lease was applied by the lessee on 15.11.2018 for the total area over 10.522ha or 26.00 acres for decorative stones/ Dolerite.
7. Govt. of Odisha, Dept. of Steel & Mines, has issued the Letter of intent vide their letter no. 192/SM & 196/SM Bhubaneswar, dated 07.01.2022 for grant of mining lease for a period of 30 (thirty) years in favour of M/s Sri Bhubaneswari Granites & M/s KPK Granites subject to submission of the approved mining plan along with other statutory compliances.
8. The mining plan for both the leases is approved as required under Rule15 of GCDR, 1999 & under Rule 21 of Odisha Minor Mineral Concession Rule, 2004 and OMMC (Amendments) Rule 2016.
9. There is no forest land within the mine area certified by DFO-cum- Wildlife warden, Malkangiri Forest Division.
10. The Applicant (M/s Bhubaneswari Granites & M/s KPK Granites) has applied under cluster approach for issuance of Terms of Reference (TOR) in order to obtain Environmental Clearance which is a statutory requirement before opening up of the mine and is a condition stipulated in Letter of Intent.

11. **Location and Connectivity:** The project site is located in village Majhiguda No. 57 under Khairaput Tahasil of Malkangiri District covers in Survey of India Topo-sheet No - 65J/7 and bounded by geo coordinates: M/s Bhubaneswari Granites is Latitude- 18° 28' 28.5" N to 18° 28' 36.5" N, Longitude - 82° 15' 00.9" E to 82° 15' 23.32" E and M/s KPK Granites is Latitude – 18° 28'18.7" N to 18° 28'28.5" N and Longitude – 82° 15'00.6" E to 82° 15'22.7" E The lease area is a non-forest land and kissam of land is Abada Aogya Anabadi (Pahad). The lease area has boulder hill topography. The nearest village is Jhariagurha, at a distance of 600m away from the lease. The area is well connected with the national highway- No 326 at a distance of 14 Km connecting Malkangiri and Jeypore. The nearest rail-head is Jeypore at a distance of 65 km from the lease area. The nearest township is Khairaput at 3km, Malkangiri at 30km away. Nearest airport is at Vishakapatnam – 150km. Nearest river is Damaladei nadi at 2.04km. Nearest protected forest is at Chaulamendi P.F- 8.16 km. However, movement of wild animals like wild boar are found within lease area as reported by Forest Range Officer. Nearest sanctuary is Karlapat at 157km.

12. **Topography:** The area under reference displays a hilly terrain. The entire area is a small hillock. Highest RL in the area is 380m above msl in the southern part centrally and the lowest is 298m above msl in the southwestern part of the ML area. The area is partly overlain by boulders. There is no forest land within the applied M.L. area. The area is surrounded with network of small seasonal nalas at a distance of 2.3km, 0.24km, 5km, 2.2 km and 3.5km respectively, which carry water during rains only. Drainage pattern is dendritic.

13. **Total Reserves** - Geological reserves are 934032 m^3 for M/s Bhubaneswari Granites & 1608768 m^3 for M/s KPK Granites and 2542800 m^3 for the total cluster. Simillarly, Mineable reserves are 511363 m^3 for M/s Bhubaneswari Granites & 1439119 m^3 for M/s KPK Granites and 1950482 m^3 for the total cluster.

14. **Production**: A total production of 19308m^3/annum of decorative stones will be produced from the M/s Bhubaneswari Granites & 20870 m^3/annum from M/s KPK Granites and 40178 m^3/annum for the total cluster lease area.

Lease	Year	Volume of Excavation (M^3)	Marketable Decorative Stone (M^3)	Volume of waste (M^3)
M/s Bhuvaneswari Granites	1st	77952	15590	62362
	2nd	82428	16486	65942
	3rd	88880	17776	71104
	4th	93538	18708	74830
	5th	96540	19308	77232
	Total	**439338**	**87868**	**351470**
M/s KPK Granites	1st	78810	15760	63040
	2nd	84850	16970	67880

	3rd	88745	17749	70996
	4th	97385	19477	77908
	5th	104350	20870	83480
	Total	**454140**	**90826**	**363314**

15. **Mining method:** Opencast Semi-mechanised method of mining shall be adopted using excavator, wire saw cutter, compressor etc. Mining operation is proposed to be carried out in single shift during day time. Firstly, the weathered zone of 0.5 to 1.0 m top soil shall be scrapped from the top and then drilling shall be carried out using jack hammers driven by air compressor. Wire saw cutter will be used to detach the stone blocks from the quarry face. Excavation and separation of decorative stone shall be done in two phases. First phase is removal of stone block from quarry face and the second phase is splitting-sizing & shaping for despatch. Cutting and removal of main block from the face of the quarry shall be done mainly by drilling machine, wire saw cutter, jack hammer & with the help of excavator. Handling and loading of blocks to stack yard shall be done using hydraulic excavator. Excavator and rear dump trucks will be used for removal of rejected blocks from mine face to dump yard. Sizing & shaping of the blocks shall be done by manual labourers. A total of 9.411 ha. land shall be under mining area out of 10.522 ha. for Bhubaneswar Granites and the remaining 1.111 ha. shall be under safety zone. A total of 12.619 ha. land shall be under mining area out of 14.016 ha. for KPK Granites and the remaining 1.397 ha. shall be under safety zone. **No blasting is proposed for mining**.

16. **Solid Waste Generation** - A total of 714784 m^3 of rejects (Solid Waste) will be generated from both the mines out of which 351470 m^3 shall be generated from Bhubaneswari Granites and 363314 m^3 shall be generated from KPK Granites in the intial five years of mine working. These solid wastes shall be sold to outside parties which will be used for various construction & developmental works.

17. **Water requirement:** 45 KLD of water required for the cluster.

18. **Power Requirement:** No electrical power shall be required for operations as the mining will be worked out during daytime. Minimal power required for office shall be taken by using D.G set.

19. **Baseline Data** is being collected for the period March 2022 to May 2022 (Summer Season) in 10 km radius study area.

20. **Land Use/ Land cover** – The land utilization plan as per the table:

Sl. No	Pattern of Utilization	At Present (Ha.)	During Plan period (Ha.)	Total in (Ha.)	Total Area in Conceptual Period
1	Area under excavation	0.002	1.240	1.242	9.411
2	Over Burden dump	0.0	1.124	1.207	Nil
3	Mineral storage	0.0	0.046	0.046	Nil
4	Soil Stack	0.0	0.017	0.017	Nil

5	Infrastructure (workshop, administrative, Building, etc.)	0.0	0.002	0.018	Nil
6	Roads	0.030	0.120	0.150	Nil
7	Retaining wall & Garland drain	0.0	0.04	0.04	Nil
8	Greenbelt/(safety zone)	0.0	1.111	1.111	1.111
Grand Total:		0.032	2.700	2.732	10.522

21. **Manpower:** A total of 151 nos. workers for M/s Bhubaneswari Granites & 164 nos. for M/s KPK Granites and 315nos. for the total cluster will be employed during the tenure of the plan period. Indirect employment through creation of shops, hired vehicles, etc., also can be generated to full fill the day-to-day requirements of the mining personals.

22. **Green belt:** Green belt shall be developed over the entire safety zone area.

23. **Proposed CSR Activities** - The following CSR Activities are proposed by Bhubaneswari Granites & KPK Granites.

    - To provide health care facilities in nearby villages.
    - To development green belt and plantation in nearby vacant areas.
    - To maintain the nearby village roads and School Buildings.
    - To provide educational aid to meritorious students in the surrounding villages.
    - To organize training programmes on environment and health matters.
    - To provide vocational training to local youths.

24. **Project Cost:** The estimated project cost shall be Rs. 20 Crores (Rs. 10 Crore for M/s Bhubaneswari Granites + Rs. 10 Crore M/s KPK Granites). A sum of Rs. 900000/- per annum is kept for various Pollution Control measures for each mine which includes water sprinkling, green belt, maintenance of vehicles etc.

25. **Environment Consultant:** The proponent along with the consultant **M/s Centre for Envotech and Management Consultancy Pvt. Ltd., Bhubaneshwar**, made a detailed presentation before the SEAC.

Considering the information / documents furnished by the proponent and presentation made by the consultant **M/s Centre for Envotech and Management Consultancy Pvt. Ltd., Bhubaneshwar**, the SEAC prescribed the following specific ToRs in addition to standard ToRs in cluster approach as per **Annexure-A** for conducting detailed EIA study.

i) Certificate from the concerned Tahasildar about the geo-coordinates of other mines located within 500 meter from the periphery of the lease boundary.

ii) Distance of all nearby mines in Topomap with geo coordinates i.e. latitudes and longitudes of mines.

iii) Any approach road existing or will be constructed?

iv) Whether schools / colleges / hospitals / health centers / bus stops / religious places existing nearby and if so, the distances of it from the lease boundary or the road through which the vehicle will ply or existing alongside the road?

v) Whether, any alternative mine exists or explored or can be explored if this mine is otherwise found unsuitable? Please furnish details.

vi) No. and type of vehicles to be used daily and the frequency for the purpose of transportation and the time and duration of such transportation. Whether permission taken or will be taken for the appropriate authority for the purpose.

vii) Intersection point of the haulage roads with the main SH / NH / public road and the traffic density study at appropriate locations by domain expert with remedial measures for decongestion and road safety.

viii) Any legal litigations pending before the Hon'ble Court or NGT, if so, detailed case no. along with a write up on the legal matter and present status.

ix) Different areas of plantation should be indicated in map.

x) Transportation Route to be submitted.

xi) Detailed report on girth class wise and species wise tree enumeration in the lease area and [redacted] afforestation should be done with consultation with concerned DFO.

xii) The future prospect of the mine pit size of 25m should be re-evaluated.

xiii) Mitigation measures for removal of silt in nearby agricultural fields.

ITEM NO. 04

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR IRON AND MANGANESE ORE BENEFICIATION PLANT WITH 0.48 MTPA THROUGHPUT CAPACITY OVER AN AREA OF 8.150 ACRES AT VILLAGE-PATAMUNDA, TAHASIL KOIDA, SUNDERGARH DISTRICT FOR M/S LAVANYABATI MINERALS PRIVATE LIMITED OF SRI ABHIMANYU BEHERA - EC

1. This proposal is for environmental clearance for Iron and Manganese ore beneficiation Plant with 0.48 MTPA throughput capacity over an area of 8.150 acres at village- Patamunda, Tahasil- Koida, Sundergarh District for M/s Lavanyabati Minerals Pvt. Ltd., of Sri Abhimanyu Behera.

2. **Category**: The project is coming under category 'B1 'as the throughput capacity of the beneficiation plant is 0.48 MTPA and requires environmental clearance from State Environment Impact Assessment Authority (SEIAA), Odisha under category 2(b) as per EIA notification 2006 and subsequent amendments.

3. M/s Lavanyabati Minerals Pvt. Ltd., intends to set up of an Iron Ore Washing and Beneficiation Plant in Odisha, utilizing Raw Iron Ore from their Captive Mine and with a provision to upgrade Raw Ore of other interested Mine. The proposed Iron Ore Washing & Beneficiation facility shall be of 0.48 MTPA capacity.

4. **Terms of Reference (TOR)** was issued by SEIAA vide letter no. 8897/SEIAA dated 18.09.2020.

5. The Public Hearing for M/s Lavanyabati Minerals Pvt. Ltd. for Iron Ore Washing & Beneficiation facility of throughput of 0.48 MTPA capacity was conducted on Dtd.08.06.2022 at 10 A.M. at Play Ground, Patamunda village, under Koira Block of Sundergarh District. The Advertisement of Public hearing for the project was published on two newspapers daily

i.e., for English in "The Indian Express" and for Odia in "The Pragatibadi" both on dtd. 27.05. 2022. Meeting was attended by 285 persons.

6. Main Issues raised by 44 persons which are as follows : Issues related to Manufacturing process, Source of Water, Water Pollution and Pollution mitigation measures, Damage of Agricultural Land, Air Pollution Control Measures, Employment of local youths/ villagers on priority basis, Appointment of Tutors for the improvement of Education, Drinking water facility, Road Development, Health and medical facility, Promotion of Sports and Recreational Activities, Promotion of Social and Developmental Activities, Gross plantation activities.

7. Cost allocated towards implementation of action plan as per MoEF&CC, O.M. dated 30/09/2020 will be 56.0 Lakhs and implemented in 4 years of project implementation.

8. **Location and Connectivity**: The proposed beneficiation plant will be established in Patamunda Village of Koira, Tahasil of Sundergarh District over an area of 8.15 Acres. The geo coordinates are - Latitude N 21^0 52' 18.0" and Longitude E 85^0 18' 41.0". The area falls in toposheet no. 73G/1 & 73G/5. National Highway-215 is located at 7Km, SW from the project site. The nearest railway station is Nayagarh Railway Station located at 13Km SE from the project site. The nearest airport is Rourkela Airport which 66 Km from the project site. Nearest town is Koira at 7km. Water bodies near to project are Suna River (6km), Suna nala(1.5km), Tehrai nala(4km), Khajuridih Nala (0.7km), and Archanda Nala (1.2km) from the project site. Nearest Reserve forest is Khajuridih RF at 4km and Mendhasala RF at 8.5km. No Ecological sensitive areas, National Park, Sanctuary, Biosphere reserves are located within 10 Km radius of the project site.

9. No forest clearance or wildlife clearance is required for the project. Project is not falling under any CPA/SPA/ESA/ESZ.

10. **Raw Materials procurement** - The raw material of Iron ore beneficiation plant is low grade Iron ore (< 60% of Fe2O3). The raw material will be sourced from the captive mines of Koida which are about 20 Km from the plant site. The raw material transportation will be mostly done through trucks by road. The plant site is well connected with black topped road. The average yield of Iron Ore Concentrate is around 85% at 63 +/- 1% Fe Content.

11. The proposed project is for beneficiation of Iron ore with 0.48 MTPA throughput with grade <60% Fe2O3.The Plant shall be designed with the following features:

    - Optimum increase in Iron Content in the Concentrate with desired yield.
    - Design of Basic Process with Re-circulation process water.
    - Zero discharge of water, recovery of water through Clarification & Settling circuit.
    - Design & Supply of Environment friendly Process Equipment.
    - Introduction of Dewatering Stub Hydrocyclone & Thickener to recover the Micro Fine Coal Particles (<1.0mm).
    - Provision for future introduction of suitable dewatering equipment to recover water effluent and re-circulate in the circuit.

- Use of Circular Thickener (Water Clarifier) to clarify the process water and re-circulate back into the circuit.
- As a back up of the Thickener, Slurry Pond is made to clarify water and re-circulate back to the Plant.
- Machine are designed and supplied ensuring that the sound level is 85 Db.

12. **Water Requirement**: Makeup water requirement for beneficiation process will be 0.08 Cu.M /T of Raw Ore Processed. With 100 TPH capacity the water requirement per hour will be 8 Cu.m per hour i.e., 128 KLD for beneficiation process. The company proposes to draw the required water from the rain-water harvesting pond constructed within the plant premises. Potable water requirement for the workers will be 2 KLD. Other 6 KLD of water will be utilized for dust suppression and plantation activities. The daily total makeup water requirement for the unit will be 136 KLD out of which 128 KLD will be processed water and 8 KLD water will be required for drinking, dust suppression and plantation. Out of total water requirement 90 KLD will be sourced from ground water and 46 KLD will be sourced from rain water harvesting pond.
13. **Power requirement**: Supply of all 415V AC motors which are required for Jigging Plant will provide all electrical/electronic equipment required to make the Jigging plant as described, complete in all respects to meet the operational requirements. Electrical power will be made available at 415V, 3-phase, 3-wire, 50 Hz with system fault level of 50 kA for 1second.
14. **Tailing Generation**: The major solid waste will be the tailings generated from beneficiation process. The tailing management for the project is being prepared taking into consideration of maximum tailing generation i.e., 1,92,000 TPA. The dried tailing generated from the process will be 1,92,000 TPA (320 TPD) which will be stored over an area of 1821 sq.m with maximum height of 20m. The dried tailing will be utilized for brick manufacturing and the captive mining pit backfilling. The project proponent has Iron ore mines located at 10 Km from the project site. The tailing will be transported to the mines for backfilling of the exhausted quarry.
15. **Green belt:** With the commencement of proposal there is the planning for increase the density of tree species from 2000- 2500 saplings per acre. During the 1st year of the proposal there will be plantation of 2750 saplings in the existing plantation area of 2.7 Acres to increase the existing plant density. There will be the proposal for development of three tier plantation along the boundary area. Saplings will be procured from the local nursery and forest department nursery will be planted at distance of 2.5 m x 2.5 m @ 2000 / Ha. The green belt development will be undertaken simultaneously with the additional construction work and completed within 2 years. The spacing between the trees will be 2.5 m and spacing between rows will be 2.5 m. Green belt will be developed over an area of 11000 Sq.m of area with 2750 saplings.
16. **Baseline study** was conducted during October – December 2020. Following results were obtained.

PERIOD	October – December 2020
AAQ PARAMETERS	PM2.5 –21.5 to 40.4 µg/cu.m

AT 8 LOCATIONS	PM10 – 54.4 to 85.2 µg/cu.m
	SO2 – 6.1 to 10.4 µg/cu.m
	NOx – 10.3 to 21.4 µg/cu.m
Ground water Quality at 2 Location	pH – 6.5 – 6.7
	Total Hardness – 25 to 54 mg/l
	Chloride - 2.0 to 12.0 mg/l
	Fluorides – <0.5 to 0.44 mg/l
	TDS – 46 to 160 mg/l
	Heavy metals (Cd <0.001 *, As <0.01*, Hg<0.0001* Cr^{*6} <0.05*mg/l) *Detection limits of analysis method
Surface water at 2 locations	pH – 6.8 to 8.4
	Dissolved Oxygen – 6.5 to 6.9 mg/l
	Biochemical Oxygen Demand – <1.0 – 2.8 mg/l
	Chemical Oxygen demand – <5- 18.0 mg/l
	Total Dissolved Solids – 18- 46 mg/l
Noise at 5 locations	Day (dBA Leq) 44.2 to 50.4
	Night (dBA Leq) - 29.5 to 39.6
Soil Quality at 4 locations	pH –6.2 to 7.4, Nitrogen – 110.5 – 359.0 Kg/ Ha, Potassium –40.3 to 188.2 kg/ ha, Phosphorous –47.8 – 69.6 kg/ha, Organic Carbon % –0.14 to 2.22, Electrical Conductivity- 50 to 249 µshos/Cm
Traffic assessment studyfindings	Traffic study has been conducted at main road connecting Patmunda village to NH 215 approximately 0.8 Km distance) from the plantsite. • Transportation of raw material, fuel & finished product will be done 100 % by road. • Existing PCU is 210 PCU/hr and existing level of service (LOS) is: A • PCU load after proposed project will be 250 PCU/hr and level of service (LOS) will be remain as A. **Conclusion:** The level of service will after project will remain as A.

17. **Land Use/ Land cover** – The land utilization plan as per the table:

Sl. No	Land use	Area (Sq.Mt.)	Area (Acre)
1	Main Plant Shed and Office and road	8093.71	2.00

Sl. No	Land use	Area (Sq.Mt.)	Area (Acre)
2	Raw material storage Yard	2023.43	0.50
3	Product Storage Yard	2023.43	0.50
4	Process water treatment area	2023.43	0.5
5	Tailing disposal area	1821.085	0.45
6	Green belt	10926.5	2.70
7	Rain Water harvesting Pond	6070.28	1.5
	Total	**32921.865**	**8.15**

18. **Manpower**: Total manpower requirement for the project will be 56 numbers including managerial, skilled and unskilled labour.
19. **Project Cost:** The capital cost of the proposed project is Rs1964 Lakhs and the capital cost for environmental protection measures is proposed as Rs143 Lakhs. The annual recurring cost towards the environmental protection measures is proposed as Rs50.0 Lakhs.
20. The proponent along with the consultant **M/s Kalyani Laboratories Private Limited, Bhubaneswar,** made a detailed presentation before the SEAC.

Considering the information / documents furnished by the proponent and presentation made by the consultant **M/s Kalyani Laboratories Private Limited, Bhubaneswar,** the SEAC decided to take decision on the proposal after receipt of the following from the proponent:

1. ToR and Public hearing have not been done for beneficiation of low-grade Manganese Ore. Justify as to why EC will be considered for beneficiation of low-grade Manganese Ore.
2. Land document with kisam of land. Land use breakup indicating 33% greenbelt area.
3. Specify the minimum grade feed for iron and Manganese Ore.
4. Give study report on manganese levels in soil and water and drinking water.
5. Submit the past 100-year rainfall data along with the tailing dump stabilization.
6. Submit the mass balance and tailing composition for Manganese Ore.
7. Submit the calculation for rainwater harvesting pond size.
8. Certificate from concerned DFO that there is no presence of Schedule I species in the region.
9. Details of types of trees with photograph available at the site.
10. NOC from panchayat for usage of road for transportation and undertaking from lessee for maintenance of road.
11. Mitigation measures for removal of silt in nearby agricultural fields.
12. Any litigation pending against the land.
13. Surface Run-off Management of tailing dump area during rain.

14. Measures to be taken not to damage nearby agricultural land as raised by the public during public hearing.
15. Tailing pond area and Tailing dump area. Detailed layout map showing tailing pond and tailing dump area.
16. Source of water and permission for status of drawl of water.

ITEM NO. 05

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR ALIPINGAL-ADHANGA DEVI NADI SAND QUARRY OVER AN AREA OF 22.06 ACRES OR 8.93 HECTARE AT VILLAGE-ALIPINGAL- ADHANGA, TAHASIL- JAGATSINGHPUR, DISTRICT- JAGATSINGHPUR OF SRI SUBASH ROUT - EC

1. This proposal is for environmental clearance for Alipingal-Adhanga Devi Nadi Sand Quarry over an area of 22.06 acres or 8.93 hectare at Village- Alipingal- Adhanga, Tahasil-Jagatsinghpur, District- Jagatsinghpur of Sri Subash Rout.
2. **Category** :This proposal falls under Category "B1", 1(a) - Mining of Minerals as the Mining lease area is more than 5.0 Ha. as per the EIA notification 2006 and its subsequent amendments.
3. The proposed mining project is sand mining project for Alipingal & Adhanga Devi Nadi sand Quarry at village Alipingal & Adhanga under Jagatsinghpur Tahasil of Jagatsinghpur district, Odisha, over an area of 22.06 acres or 8.93 ha. The successful bidder for the project is Sri Subash Chandra Rout.
4. The present mines is new mines granted by the Tahasildar Jagatsingpur through Form F vide Letter No. 60 dated 08-01-2021 to intimate Sri Subash Chandra Rout, as the successful bidder.
5. The period of lease is 5 years, as mentioned in approved mining plan. Mining lease is an identified sairat source in the DSR of Annexure II & sl.no. 6 which shows it is a working mine. The lease area has no other mines within 500 meters.
6. **TOR details**: The EIA/EMP study for Alipingal-Adhanga river sand bed Mines is being prepared in accordance with the TOR approved by SEIAA, Odisha vide letter no. 2321/SEIAA dated 31.08.2021.
7. The mining plan has been approved by the Govt of Odisha Directorate of Geology Bhu-Bigyan Bhawan, Bhubaneswar, Odisha vide memo no. **GXCII (g) - 913/ 19-8285 on dated 21.12.2020.**
8. **Public hearing details**: The Public Hearing in respect of Environment Clearance for Alipingal-Adhanga Devi Nadi Sand Quarry on River Devi over an area of 8.93Ha. under the Tahasildar of Jagatsinghpur of Jagatsinghpur district, Odisha was conducted on 22.06.2022 at 10.30 A.M. at Ground near Market Complex of Alipingal village in Jagatsinghpur, Odisha. Air pollution control, employment, livelihood, maintenance of Mahira village road, provision towards Repair and Maintenance of village Tube wells in Alipingal Village, provision of Assistance to Alipingal Primary School.and plantation were the main issues raised during public hearing. Budget allocated for public hearing issues is Rs. 6.5lakhs.

9. **Location & Connectivity**: The Lease area is located at village Alipingala-Adhanga under Jagatsinghpur tahasil of Jagatsinghpur district, which comes under Survey of India Topo Sheet No.- 73-L/4 and the area is bounded by Latitude: 20^0 13' 02.00" to 20^0 13' 20.40" North & Longitude: 86^0 08' 24.00" to 86^0 08' 52.70" East. The Alipingal-Adhanga Devi Nadi Sand Quarry is well connected to Jagatsinghpur town by pucca road. The nearest railway station is at Gopalpur which is situated at 15.5 Km from the lease area. There is an existing river bridge at Galupada (Alipingal) in the block B of the lease area. The mining activity will be carried out only in **block A** and there will be no mining activity proposed in block B **due to existence of River Bridge**. However, the area is approachable from Alipingal by Tarakani road which is located at 0.7 Km. Nearest national highway NH -55 at 0.5km. Nearest airport is Biju Pattnaik International Airport at 35.70km. Nearest hospital, education institute at 5.5km. Nearest water body Gobari river at 5.90km. No Wild Life Sanctuary/ Biosphere reserve, wild life corridor or other Eco sensitive zone present within 10 Km radius of lease area.

10. **Topography**: Topographically, the area is plain area, so there is no chance of stagnant water at the lower level of the lease area. If any water will generate during excavation, that will be channelled to the river course.

11. **Replenishment Study** – The rate of replenishment of sand is finalized by conventional volumetric survey with hand GPS, Total station & Measuring tape. Thickness of sand deposit has been taken by considering the pre-monsoon and post-monsoon survey in different part of the lease area. The first survey was carried out in December'2020 for recording the level of mining lease before the mining. The second survey was carried out in May'2021 for starting of monsoon season. This survey provided the quantity of the material excavated before the offset of monsoon. The third survey has been carried out after the monsoon on November/December'2021 to know the quantum of material deposited/replenished in the mining lease. As the above area is not operational till now, hence it is studied that the **Replenishment is absolutely 50%** during the year 2021-22, which will leads for the production capacity of 7,570 m^3/annum. Once one part will excavate for one year, will not come further during next year plan period. So, rest part of mineable area will be excavated as per approved mining.

12. **Reserves** - The reserve has been estimated based on surface exposure of riverbed by surface area method. The Geological Reserve is 1, 33,802 m^3. The mineable reserve has been calculated by excluding the reserve blocked under the pit slope of 7.5m safety all along the lease boundary and 500 m safety zone from bridge and 10 safety measures from water course and found to be 49048 m^3.

13. **Mining method**: The method of mining will be adopted as open cast manual method with mechanical carriage to achieve the targeted production of 22,000m^3/annum and total production is 110000 m^3 during the plan period.

14. **Land use**: During mining operation 2.56 ha of area will be utilized for mining and allied activities and remaining 6.37 ha will remain undisturbed as safety zone along lease boundary and 500 m safety zone from bridge and 10 meters safety measures from water course.

15. **Baseline study** was conducted during November 2021 – January 2022. Following results were obtained.

AAQ PARAMETERS AT 5 LOCATIONS	PM2.5 –22.9 to 49.1 µg/cu.m	60 µg/cu.m
	PM10 – 45.8 to 76.3 µg/cu.m	100 µg/cu.m
	SO2 – 5.6 to 11.5 µg/cu.m	80 µg/cu.m
	Nox – 11.7 to 22.4 µg/cu.m	80 µg/cu.m
Ground water Quality at 3 Location	pH – 7.3 to 8.1	6.5 to 8.5
	Total Hardness – 80 to 128 mg/l	600 mg/l
	Chloride - 10 to 20 mg/l	250 mg/l
	Fluorides – 0.73 to 0.82 mg/l	1.5 mg/l
	TDS – 140 to 160 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 – 8.35 to 8.4	
	Dissolved Oxygen – 6.6 to 6.7 mg/l	
	Biochemical Oxygen Demand – <2 mg/l	
	Chemical Oxygen demand – <5 mg/l	
Noise at 5 locations	Day (dBA Leq) 32.4 to 50.8	55
	Night (dBA Leq) - 25.6 to 37.6	45
Soil Quality at 4 locations	pH –5.6 to 6.3,Potassium –235.2 to 395.1 mg/ kg, Phosphorous –5.0 to 9.9 mg/ kg, Organic Carbon % –0.56 to 1.42, Electrical Conductivity- 71 to 124 µshos/Cm	

16. **Employment generation**: Due to the proposed sand mining, there will be generation of employment for 39 persons. Out of which, 02 nos. are skilled, 10 nos. are semi-skilled and 25 nos. are unskilled and 02 supervisor.
17. **Water requirement**: Total water requirement for the project will be 5 KLD. For drinking & domestic purpose, water requirement will be 1.5 KLD, water requirement for green belt development will be 1.5 KLD and dust suppression will be 02 KLD.
18. **Power requirement**: No electrical power shall be required for operations as the mining will be worked out during daytime only. Minimal power required for office shall be taken from the general electric supply of the area.
19. **Green Belt**: As the area comes under the riverbed so, no plantation programme is incorporated. So the plantation will be carried out along the river bank to protect the bank

erosion over an area of 0.0625Ha. (250m long River Bank x 2.5m width) with 250nos of local native species of plants to be planted.

20. **Project cost**: The estimated cost of the project is Rs 10 lakhs approximately and cost for EMP is Rs 3 lakhs.

21. The proponent along with the consultant **M/s Kalyani Laboratories Private Limited, Bhubaneswar**, made a detailed presentation before the SEAC.

Considering the information / documents furnished by the proponent and presentation made by the consultant **M/s Kalyani Laboratories Private Limited, Bhubaneswar**, the SEAC decided to take decision on the proposal after receipt of the following from the proponent:

a) As revealed from the KML file, mining has been carried out earlier. So, compliance to EC conditions certified by the Tahasildar if EC granted earlier.

b) Rate of replenishment is 50% as per replenishment study conducted during the year 2021-22, which will lead for the production capacity of 7,570 m^3/annum instead of capacity approved in ToR and mining plan i.e. 22,000 m^3/annum. Hence, revised approved mining plan according to the replenishment study to be submitted.

c) Replenishment Study Report should be certified by the concerned Tahasildar. NoC from the concerned Tahasildar that they don't have any objection if the sand extraction quantity will be revised as per replenishment study.

d) Submit all the reading points data for sand replenishment.

ITEM NO. 06

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR GADA GOVINDAPUR DECORATIVE STONE MINE OVER AN AREA OF 30.05 ACRES OR 12.161 HA IN VILLAGE GADA GOVINDAPUR OF DIGAPAHANDI TAHASIL IN GANJAM DISTRICT OF SRI SATYAJIT DAS - TOR

1. The proposal was considered by the committee to determine the "Terms of Reference (ToR)" for undertaking detailed EIA study for the purpose of obtaining environmental clearance in accordance with the provisions of the EIA Notification, 2006 and amendment thereafter.

2. This proposal falls under Category "B1", 1(a) - Mining of Minerals as the Mining lease area is more than 5.0 Ha. as per the EIA notification 2006 and its subsequent amendments.

3. This proposal is for Terms of Reference (TOR) for the Gada Govindapur mining lease area for decorative stone (Garnetiferous Granite Gneiss) over an area of 12.161 Ha or 30.05 Acre located in the village Gada Govindpur, under Tahasil Digapahandi, District Ganjam, Odisha, in favour of M/s Excellent Granites, Vishakhapatnam, A.P.

4. The Mining Lease was granted by Department of Steel & Mines, Govt. of Odisha vide Letter No$\frac{5767}{\text{IV (DS) SM-35/2010'}}$ Bhubaneswar, on dated 27.06.2015 in favour of M/s Excellent Granites, Vishakhapatnam, A.P for 30 years.

5. Mining plan approval Director of Mines, Odisha, Bhubaneswar MXXII-(a)-10/2016/7687 on dated 21.08.2017.

6. Mining lease are an identified sairat sources in the DSR Ganjam, page no. 37, sl.no. 8. There is no other mines within 500m radius periphery of the lease area.
7. There is no forest land within the mine area as certified by DFO, Berhampur Forest Division.
8. **Location and connectivity**: The proposed project is situated at Village Gada Govindapur, Tahasil Digapahandi, District- Ganjam, Odisha State. The mining lease area is located in the Survey of India Toposheet no. E45A12 and bounded by latitudes 19°13'17.1"N to 19°13'32.4"N & longitudes- 84°32'01.4"E to 84°32'14.8"E. The land use pattern of the mining lease area comes under the non-forest waste land (Abada Ajogya Anabadi), bearing Khata no-1011, Plot no- 559, 560, 561, 562, 563 & 564 and Kissam: Parbat. Highest elevation 161 m RL and the lowest elevation 54.5 m RL. Nearest state highway is SH 29 which is 2.20 Km and national highway NH16 is 19.40 Km away from the project site. Nearest Railway station (Surla Road): 20km; Berhampur Railway Station: 28.60Km. Nearest airport is Biju Pattnaik International Airport at 176km. Nearest Interstate Boundary is Odisha-Andhra Pradesh: 12.50Km.Nearest water body Bahuda River at 1 km. Nearest Nala is Kantajura Nala at 1.90km. Nearest Reserve Forest is Kerandimal Reserve Forest at 8km. Nearest sanctuary is Lakhari valley Wild life sanctuary at 25 Km.There is no national park, wild life sanctuary or any other eco sensitive area located within 10 Km of the project site.
9. **Total Reserves** - Geological reserves is 49,02,810 m^3 and Mineable reserves is 3719650 m^3.
10. **Production**: A total production of 11550 m^3 (max)/annum and 51845 m^3 of decorative stones will be produced during the plan period as per the given table.

Year	Total volume of Rock Mass (m^3)	volume of Blocks (m^3)	Volume of Rock as Khanda (m^3)	Total quantity of Decorative Stone (m^3)	Volume of Presently Non Saleable (m^3)	Volume of Waste (m^3)
1st Year	15240.00	6096.00	2286.00	8382.00	3048.00	3810.00
2nd Year	17275.00	6910.00	2591.00	9501.00	3455.00	4319.00
3rd Year	20450.00	8180.00	3067.00	11247.00	4090.00	5112.00
4th Year	20300.00	8120.00	3045.00	11165.00	4060.00	5075.00
5th Year	21000.00	8400.00	3150.00	11550.00	4200.00	5250.00
Total	**94265.00**	**37706.00**	**14139.00**	**51845.00**	**18853.00**	**23567.00**

11. **Mining method:** Opencast and semi mechanized method with the deployment of machines like jack hammer drill, compressor, hydraulic excavators & tippers. Mining operation is proposed to be carried out in single shift during day time. Blasting is not required for the production of blocks. Decorative stone will be detached from the country rock by using wire saw cutting. The drilling will be done in a regular pattern with a maximum depth of 3m. Removal of waste materials, block cutting, dressing, splitting, loading & transportation of blocks and waste disposal. Height and width of bench is 3mx3m, bench slope is 90^0. Life of the mine is 340 Years.

12. **Solid Waste Generation** - The volume of waste to be generated during the plan period will be 23,567 cum. Swell Volume of waste is 25,923 Cum. The area proposed for waste dump is 0.900 Ha. Stacking of waste material will be done in 5 benches by dumping the wastes generated year wise by maintaining a height of 10 m. However the generated waste will be periodically dumped over the proposed temporary waste dump for the plan period in the lease area and will be back filled concurrently after reaching the ultimate pit limit. Further it is worthy to mention that, the waste generated from the decorative stone quarry is generally used for construction and road metals and civil construction work. Hence attempt will be taken for sale of the generated waste during the conceptual period with due permission from the concerned authority for civil work and road construction work.

13. **Water requirement:** Total water requirement: 7.5 KLD (Dust suppression: 2.0 KLD + Plantation: 2.05 KLD + Drinking/ Domestic: 3.5KLD). Source: Tanker for Domestic purpose and RWH for dust suppression and plantation. During the mining operation water requirement for stemming of blocks will be 7.5 cu.m per month and this water will be re-circulated in the process. The water required for cutting of the blocks will be sourced from Rain water harvesting pond.

14. **Power Requirement:** No electrical power shall be required for operations as the mining will be worked out during daytime. Diesel requirement of 6000litters/month for operation of mining equipment and DG sets.

15. **Greenbelt:** Total number of saplings proposed is 10,250 over an area of 46,160 m^2 with proposed species Mango, Neem, Mahaneem, Chakunda, Accacia, and Ecalytus etc.

16. **Land Use/ Land cover** – The land utilization plan as per the table:

Present and plan period Land use Patton of the M.L area Type land use	Area utilized at the beginning of Plan period in hect.	Area utilized the end of 5 years Plan in hect.	Area utilized the end of lease period of 20 years in hect	Area utilized at the end conceptual period in hect
Mining	0.008 (Trial pit)	1.639	4.269	9.002
Stack yard blocks	Nil	0.215	Nil	Nil
Stack yard khanda	Nil	0.104	Nil	Nil
Stack yard rejects	Nil	0.104	Nil	Nil
Waste dump	Nil	0.220	0.900	Nil
Infrastructure	Nil	0.260	0.260	Nil
Roads	Nil	0.143	0.143	Nil
Setting tank	Nil	0.631	1.262	Nil

Green belt area.(Safety Zone +other free area)	Nil	1.016	1.016	3.016
Total land degradation	0.008	4.332	7.850	12.018
Area remain Untouched	12.153	7.829	4.311	0.143
Total	12.161	12.161	12.161	12.161

17. **Manpower:** A total of 100 nos. workers (Administrative & supervisory personal - 15nos and 85 workers under skilled, semi-skilled & un-skilled category) will be employed during the tenure of the plan period. Indirect employment through creation of shops, hired vehicles, etc., also can be generated to full fill the day-to-day requirements of the mining personals.
18. **Project Cost:** The estimated project cost shall be Rs. 80lakhs.
19. The proponent along with the consultant **M/s Kalyani Laboratories Private Limited, Bhubaneswar**, made a detailed presentation before the SEAC.

Considering the information / documents furnished by the proponent and presentation made by the consultant **M/s Kalyani Laboratories Private Limited, Bhubaneswar**, the SEAC prescribed the following specific ToRs in addition to standard ToRs as per **Annexure-B** for mining project for conducting detailed EIA study.

(i) Certificate from the concerned mining officer about the Geo-coordinates and other mines located within 500 meter from the periphery of the lease boundary.

(ii) Distance of the nearest habitation / village (s) etc. from the lease boundary.

(iii) Details of Waste Management i.e., quantity to be used, stored and the waste composition.

(iv) NOC from concerned competent authority for usage of road for transportation of minerals.

(v) Plantation on both sides of approach road and its maintenance.

(vi) Zero discharge from lease area to be maintained.

(vii) In case village / any habitation is very nearby, plan to ensure safety of human life and livestock from accidents be submitted.

(viii) Number and type of vehicles to be engaged per day and their frequency of plying.

(ix) Certificate from the concerned DFO that there is no DLC land involved in lease area. Distance of the mines from the boundary of the Notified Eco-Sensitive Zone / Wildlife Sanctuary if any.

(x) Certificate from the concerned mining officer that the mine has not operated earlier and this is a new mine.

(xi) NOC of BDO or Panchayat for usage of haulage road/Panchayat Road.

(xii) Submit detail report on waste & slurry management to prevent overflow.

(xiii) Mitigation measures taken for pollution generated due to fine particles in the mining process should be addressed.

ITEM NO. 07

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR JAKAR STONE QUARRY OVER AN AREA OF 13.594 HA FOR PRODUCTION OF 3,240 CU.M/ANNUM AT KHATA NO. 1692, PLOT NO. 28,29,30,31,32 41,42,43,44,69& 70, VILLAGE- JAKAR, TAHSIL– POLASARA, DISTRICT-GANJAM OF SRI SARATHI SWAIN – EC

The project proponent did not attend the meeting. The SEAC decided to defer the proposal to next meeting.

ITEM NO. 08

PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR BASULEI SAND QUARRY IS A SAND MINING PROJECT IN BRAHMANI RIVER OVER AN AREA OF 50.01 ACRE OR 20.24HA. LOCATED IN VILLAGE- BASULEI, TAHASIL - PARAJANG, DIST.- DHENKANAL OF TAHSILDAR PARJANG - EC

1. This proposal is for Environmental Clearance for Basulei sand Quarry which is a sand mining project in Brahmani River over an area of 50.01 acre or 20.24ha. located in Village-Basulei, Tahasil - Parajang, Dist.- Dhenkanal of Tahsildar Parjang.
2. **Category**: As per the Environmental Impact Assessment (EIA) Notification dated 14th September 2006 and its subsequent amendments, the proposed Brahmani River Sand Quarry falls under 'Category B1' under Schedule 1(a) – Mining of Minerals, since the lease area is more than 5.0 Ha.
3. The Tahasildar of Parjang issued letter to get approved mining plan and obtaining Environmental Clearance vide letter no. 566, Dt.25/02/2021 after district collector, Dhenkanal approval of New Sand Mine leases and Successful Bidder name will be selected after auction
4. The mining plan was approved by Joint Director of Geology, Zonal Survey, Dhenekanal, Odisha vide Letter No. 309/DZ/28.04. 2021.
5. **Terms of Reference** (TOR) - The ToR application submitted to SEIAA, Odisha on 27 August,2021 with proposal No. SIA/OR/MIN/66827/2021. ToR was issued by SEIAA with No.3013/SEIAA, SIA/ OR/ MIN/66827/2021, Dt. 28.09.2021 and F.No. 66827/147-MINB/08-2021, Dt. 13.11.2021.
6. **Public hearing details**: Public Hearing was conducted on 05.08.2022 at 11.00 AM at Basulei Choupadhi Pala Mandapa, Mouza- Basulei (Khata No. 418, Plot No. 2149, Kissam-Gramya Rasta, Area Ac.0.11 in Dhenkanal District. News Paper advertisement was given about the sand mining at Basulei on The Times of India and Dharitri on 01.07.2022. Issues raised during public hearing were regarding dust suppression and water pollution control, afforestration programme, local employment opportunities, provision for repair and maintenance of village roads, strict adherence of Sand mining guidelines, supply of sand of the locals with reasonable price/free of cost and speed restriction during school timing etc. Budget allocated for public hearing issues is Rs. 6.9lakhs.
7. **Location and connectivity**: The total extent of the lease area for mining activity is 20.24 Ha at Basulei Village, Parjang Tahasil, Dhenkanal District and Odisha State. Quarry Land is classified as Government land and leased by Tahasildar, Dhenkanal, and Odisha. The area

under discussion is featured in Survey of India Topo Sheet No – F45N4 and is bounded between the Latitude -20° 00' 56.48" N to 21° 01' 17.17" N and Longitude – 85° 13' 28.90" E to 85° 13' 42.68" E. The lease area is located at a distance of 1.3 km from village Basulei and at a distance of 13.81 kms from Parjang, 55 kms from the District Headquarters Dhenkanal and 140 kms from the State Capital Bhubaneswar. Talcher Railway station is the nearest railway station located at a distance of 10.24 kms from the lease area. Nearest Road Bridge is at a distance of 1.96 km from the mining lease area. Pucca road connecting to the lease area and with the village – Basulei is at distance of 4.9 km. SH – 63 is at 24.36 km and the nearest major district road is at distance of 5 km. NH- 200 is the nearest National Highway which is at a distance of 5 km.

8. **Mining method:** The proposed mine is spread over an area of 20.24 Ha with total mineable reserves of about 565875 m^3 to produce 15000 m^3 /Annum of Sand Mining. Opencast manual mining method will be adopted. Handpicks, spade, hand shovel will be used by manual labourers for extracting & loading of sand. The sand will be loaded into tippers/ tractors manually and dispatched.

9. **Total Reserves and production** - The total geological reserve has been estimated as 607170 m3. Similarly, the mineable reserve of river bed sand is worked out to be 565875 m^3. The project has been proposed for a total production of 75000 m^3 of Sand from this Quarry. During the plan period maximum of 15000 Cum of sand will be produced per annum.

10. **Replenishment study Report** - As per the replenishment study, Minable area is 188625 Sq.m. Pre-Monsoon and Post-Monsoon Standard Elevation are 70.50 and 70.57 respectively. Difference in Elevation is 0.07. Estimated Annual replenishment Volume is 13204 m^3 or 21126.4 Tones. However, the Minable Reserve as per approved Mining Plan is 565875 m^3 at highest mRL 69.0. The Annual proposed production is 15000 cubic meters. Since the mining is not done yet. if we will take the data during mining plan preparation and post- monsoon period data collection, there is a remarkable change of elevation is 1.57 meter. Estimated Replenishment reserve is 296141.25 m^3. Based on pre-monsoon and post-monsoon volumes found, the sand deposit will be 5,65,875 + 2,96,141 = 8,62,016 cum.

11. **Water requirement**: Water requirement for the project will be 2.5 KLD. Water required in the project will be for drinking purpose and dust suppression, which will be sourced from water tanker.

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

13. **Manpower**: Employment Generation from the project is 14 nos. of people. OMS has been assumed to be 6.25 cum. Indirect employment through creation of shops/ stalls, hired vehicles, etc. also can be generated to full fill the day-to-day requirements of the mining personals.

14. **Greenbelt**: Plantation work will be carried out at the safety zone of the lease area. 500 number of saplings proposed during plan period will be planted. Plantation shall be done with suitable local species like teak, mango, jammu, jhaun, neem etc. per year and also along the approach road during the plan period.

15. Land Use Details In Lease Area –

Type of land use	Area (Ha.)
Water channel area	Nil
Left over area adjacent to water channel	Nil
Quarry Safety zone area	1.376
Potential Mineable surface area within the plan period	5.0
Untouched Area	13.864
Total	20.24

16. **Baseline study** was conducted during November 2021 – January 2022. Following results were obtained.

PERIOD	October to December 2021	Applicable Standards
AAQ PARAMETERS AT 8 LOCATIONS	PM2.5 –20.5 to 28.8µg/cu.m	60 µg/cu.m
	PM10 – 49.3 to 63 µg/cu.m	100 µg/cu.m
	SO2 – 11.4 to 22.7 µg/cu.m	80 µg/cu.m
	Nox – 18.8 to 28.2 µg/cu.m	80 µg/cu.m
Ground water Quality at 8 Location	pH – 7.21 to 7.93	6.5 to 8.5
	Total Hardness – 235 to 440 mg/l	600 mg/l
	Chloride – 94.76 to 170.5 mg/l	250 mg/l
	Fluorides – 0.33 to 1.1 mg/l	1.5 mg/l
	TDS – 565 to 795 mg/l	1000 mg/l
	Heavy metals (Cd <0.001, As <0.001, Hg<0.0005) mg/l Detection limits of analysis method	Heavy metals (Cd <0.003, As <0.01, Hg<0.001) mg/l
Surface water at 3 locations	pH – 7.63 to 7.78	
	Dissolved Oxygen – 6.9 to 7.1 mg/l	
	Biochemical Oxygen Demand – <2 mg/l	
	Chemical Oxygen demand – 8 to 11 mg/l	
Noise at 8 locations	Day (dBA Leq) 41.5 to 52.4	55
	Night (dBA Leq) - 35.7 to 41.9	45
Soil Quality at 7 locations	pH – 7.23 to 7.82, Potassium – 198 to 312 mg/ kg, Phosphorous – 15.6 to 29.4 mg/ kg, Organic Carbon % – 0.35 to 0.64, Electical Conductivity- 56-125 µshos/Cm	

17. **Project cost :** The total project cost is Rs. 50 Lakhs only. Proposed EMP capital cost is Rs. 2.5lakhs and recurring cost is Rs. 6lakhs.

18. **Environment Consultant**: The proponent along with the consultant **M/s. Rightsource Industrial Solutions Pvt. Ltd, Hyderabad,** made a detailed presentation before the SEAC.

Considering the information / documents furnished by the proponent and presentation made by the consultant **M/s. Rightsource Industrial Solutions Pvt. Ltd, Hyderabad,** the SEAC decided to take decision on the proposal after receipt of the following from the proponent followed by site visit of the Sub-Committee of SEAC:

1. Submit certificate from concerned DFO that the project does not fall within the elephant corridor of Anantpur-Kanheijena.
2. The KML file submitted reveals that the sand deposit area is surrounded by water; this has to be clarified by the lessee that there will not be any disturbance to the water channel of the river. Also, details of approach road from the sand deposit to be indicated in the map.
3. Distance of the lease area from the river bank.
4. A school is situated near to the transportation road. The proponent shall submit a detailed plan for plying of vehicle during the school opening time for safety of students. They shall ensure to stop mining activity and transportation during school opening and closing time.

ITEM NO. 09

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

1. This proposal is for Amendement of Environmental Clearance of M/s Mahanadi Coal fields Ltd. for Nandira Underground Coal mining project of 0.33 MTPA in ML area of 370 Ha. of M/s Mahanadi Coal fields Ltd. located in villages - Jambubahali, Danara, Badajorada and Natedi, Tahasil - Talcher, District-Angul of Sri Santosh Kumar Mohanty.
2. The proposed project falls under 'Category B1' as per EIA notification 2006 and its subsequent amendments.
3. Nandira Colliery is an old UG mine located in Angul district; Odisha has started its production in 1972-73. At present, the average production is 250 Te/day (Capacity: 0.33 MTPA).
4. Environment Clearance for Nandira UG (0.33 Mty) had been granted in June 2007 vide letter no J-11015/866/2007-IA.II(M) Dt.18/6/2007 under the EIA notification 1994.
5. As per MoEF&CC Notification No. 1350(E) dated 06.04.2018, Revalidation of EC was obtained from MoEF&CC on dated 15.11.2020. As per new EC letter dtd. 15-11-2020.
6. As per new EC letter dtd. 15-11-2020, establishment of STP (one of the major compliance) is linked with grant of CTO by SPCB. The work of STP is still under progress.
7. Additional 08 no. of specific conditions were stipulated. Out of which, compliance of 02 conditions is still under progress. For compliance of two conditions i.e., Construction of STP by July' 21, earlier proposal for timeline extension was submitted to MoEF&CC and the same

was considered in 17th EAC meeting held on 09-10th August 2021 and further in 28th EAC held on 01st April 2022.

8. Accordingly, the timeline for construction of STP was extended earlier till April' 22 and further till Dec'22 vide EC letter dtd. 16-09-21 and 02-05-2022 respectively.
9. Since instead of all efforts the STP is work is not going to be completed by Dec'22 therefore, the current proposal is for amendment in EC for further extension of timeline for another 4 months i.e., till April'23.
10. The proponent along with the consultant **M/s. Central Mine Planning & Design Institute Ltd., Jharkhand,** made a detailed presentation before the SEAC.

Considering the information / documents furnished by the proponent and presentation made by the consultant **M/s. Central Mine Planning & Design Institute Ltd., Jharkhand,** the SEAC recommended for amendment in EC for further extension of timeline for another 4 months i.e., till April 2023 for completion of the STP.

Member Secretary, SEAC **Chairman, SEAC**

ANNEXURE – A

TERMS OF REFERENCE FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY IN CLUSTER APPROACH AND INFORMATION TO BE INCLUDED IN THE EIA/EMP REPORT

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. Name and area of other mines within 500 meter of the lease area.
4. 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.
5. 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).
6. 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.
7. 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.
8. 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.
9. 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.
10. 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.

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Environmental Scientist, SEAC

11. 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.

12. 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.

13. 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.

14. 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.

15. 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.

16. The vegetation in the RF / PF areas in the study area, with necessary details, should be given.

17. 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.

18. 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.

19. 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

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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.

20. 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.

21. 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).

22. 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.

23. 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.

24. 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.

25. 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.

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26. 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.
27. 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.
28. EIA-EMP document shall corer 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.
29. 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.
30. The general features such as surface drainage, mineral transportation and process flow of beneficiation plant, power and water supply shall be indicated.
31. 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.
32. 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
33. EIA-EMP document shall include land use pattern including agriculture, forest land, water bodies and settlements.
34. Existence of National Park, Wild Life sanctuary, migratory routes of wild animals within 10 km of mine lease area shall be brought out.
35. Topographical map of study area (core & buffer zone -10 km from the boundary of core zone) showing major topographical features shall be included.
36. EIA-EMP document shall include biological environment (flora and fauna) and socio-economic environment within the study area.
37. 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.
38. Environmental Monitoring Programme and the environment management plan shall also be covered measures of mines in cluster (within 500m) of the said mine.
39. 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.
40. Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
41. 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.
42. 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.

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43. 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.

44. 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.

45. 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.

46. 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.

47. 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.

48. Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.

49. 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.

50. 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.

51. 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.

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52. 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.

53. 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.

54. 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.

55. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.

56. The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.

57. A Disaster management Plan shall be prepared and included in the EIA/EMP Report.

58. 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.

59. 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.

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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.

j) All the commitments made by proponent in EIA/EMP shall have specific time-line. Approving authority may revise the time line during appraisal.

60. **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 after conducting public hearing.**

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ANNEXURE – B

TERMS OF REFERENCE FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY AND INFORMATION TO BE INCLUDED IN THE EIA/EMP REPORT FOR GADA GOVINDAPUR DECORATIVE STONE MINE OVER AN AREA OF 30.05 ACRES OR 12.161 HA IN VILLAGE GADA GOVINDAPUR OF DIGAPAHANDI TAHASIL IN GANJAM DISTRICT OF SRI SATYAJIT DAS - TOR.

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. 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.
4. 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).
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.

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10. 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.

11. 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.

12. 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.

13. 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.

14. 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.

15. The vegetation in the RF / PF areas in the study area, with necessary details, should be given.

16. 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.

17. 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.

18. 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

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Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.

19. 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.

20. 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).

21. 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.

22. 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.

23. Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.

24. 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.

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25. Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.

26. 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.

27. 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.

28. 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.

29. 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.

30. 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.

31. 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.

32. 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.

33. Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.

34. 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.

35. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical

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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.

36. 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.

37. 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.

38. 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.

39. 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.

40. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.

41. The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.

42. A Disaster management Plan shall be prepared and included in the EIA/EMP Report.

43. 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.

44. 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.

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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.

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

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