

**PROCEEDINGS OF THE MEETING OF STATE LEVEL EXPERT APPRAISAL
COMMITTEE, ODISHA HELD ON 30TH DECEMBER, 2019**

The SEAC met on 30th December, 2019 at 11:00 AM in the Conference Hall of Odisha State Pollution Control Board, Bhubaneswar under the Chairmanship of Sri. B. P. Singh. The following members were present in the meeting.

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|-----------------------------|---|----------|
| 1. Sri. B. P. Singh | - | Chairman |
| 2. Dr. D. Swain | - | Member |
| 3. Sri. J. K. Mahapatra | - | Member |
| 4. Prof.(Dr.) B.K. Satpathy | - | Member |
| 5. Dr. Sailabala Padhi | - | Member |

The agenda-wise proceedings and recommendations of the committee are detailed below:

ITEM NO. 01

PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF M/S. SRI KRISHNA ESTATE CONSTRUCTION PVT. LTD. FOR PROPOSED CONSTRUCTION OF KRISHNA LAKSHMI ARCADE RESIDENTIAL APARTMENTS AT VILLAGE - JHARPADA, BHUBANESWAR, DISTRICT - KHORDHA WITH TOTAL BUILT-UP AREA - 53260.36 M². OF SRI. PABITRA ROUSTRAY – EC.

1. The proposal is for Environmental Clearance of M/s Sri Krishna Estate Construction Pvt. Ltd. for proposed construction of Krishna Lakshmi Arcade Residential Apartments at Village - Jharpada, Bhubaneswar, District - Khordha with total built-up area - 53260.36 m² of Sri. Pabitra Roustray.
2. The category of the project is 8(a) as per EIA Notification, 2006 & its amendments.
3. The proposed site is located at Khata No. 610, Plot No. 328/2550, 329, 328, 328/2551, 328/2552, 323, 277/2710, 317, 318, 331/2713, 330, Khata No. 634, Plot no 328/2549, Khata No. 101, Plot No. 328/2711, 323/2712, 328/2715, 227; Khata No. 928/3236, Plot No. 333/6252, Khata No. 928/3063, Plot No. 338, Khata No. 244, Plot No 327, 326, Khata No 245, Plot No 329, Khata No 928/2891, 322, 321, Khata No 33, Plot No 319, Khata No 905, Plot No 331, Jharpada Village, Bhubaneswar, Khordha District, Odisha.
4. The geographical co-ordinate of the project site is: Latitude – 20° 16' 35.9" N & Longitude - 85° 51' 50.1" E which falls under Topo sheet No- 73H/15 and 73H/16. The project site is well connected with National Highway NH- 316 at a distance of approx 1.0 Km in West direction. The nearest railway station is Bhubaneswar Railway station at a distance of approx. 2.7 Km. The nearest airport is Biju Patnaik Airport at a distance of approx. 5.3 Km from project site. Nearest canals are Daya Canal – 0.2 km and Puri Main Canal – 2.8 km. Nearest Nala is Gangua Nala – 0.6 km. Nearest rivers are Bhargabi River – 2.0 km. and Kushabhadra Nadi – 3.7 km.
5. Meteorology: The maximum temperature is about 36.0 0C and the minimum temperature is 16.0 0C felt in the area. The average annual rainfall in the area is 1326.16 mm.
6. The Total Plot Area is 22411.50 m², Drain affected area is 306.23 m² and the Net plot area is 22105.27 m². The total Project built up area is 53260.36 m² (Block-A,B,C,D: Basement + Ground + 4 Floors, Block E,F (Club House) with Basement + Stilt +Ground + 4 Floors). Residential Apartments are 426 Flats.

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7. The Building Details Of The Project:

| Sl. No. | Area Description | Area (m ²) |
|---------|--------------------------------------|---|
| 1 | Total Plot Area | 22411.50 |
| 2 | Proposed FAR Area | 42480.64 |
| 3 | Proposed Non-FAR Area | 12435.72 |
| 4 | Total Area | 53260.36 |
| 5 | Green Area | 8505.72 (840 nos. plants proposed) |
| 6 | Height of the Building | 14.75 mts. |
| | Block Details (No. of floors) | Built-up Area of Floors in m² |
| 7 | Block A (B+G+4) | 22223.60 |
| 8 | Block B (B+G+4) | 8863.96 |
| 9 | Block C (B+G+4) | 3884.44 |
| 10 | Block D (B+G+4) | 4806.88 |
| 11 | Block E (B+S+G+4) | 1717.82 |
| 12 | Block F (B+S+G+4) | 984.74 |
| | Total | 42480.64 |
| | Parking Area | |
| 13 | Basement area | 10143.0 |
| 14 | Still area | 636.72 |
| 15 | Open Parking | 1656.0 |
| | Total | 12435.72 |

8. **Water Requirement:** The total water requirement of the project during occupational stage is 321 KLD, out of that the fresh water requirement is 179 KLD will be sourced from Municipal Supply/Ground Water and the recycled water from S.T.P is 142 KLD. The total sewage water generated is 259 KLD. It is proposed to treat the sewage in STP of capacity of 300 KLD. The treated waste water is used for Flushing, & Gardening and remaining will be sent to public sewers.
9. **Power requirement:** The daily power requirement for the proposed complex is 3180 KW (CESU). In order to meet emergency power requirements during the grid failure, there is provision of 3 nos. of DG set having 625 KVA capacities for power back up in the Residential Building Project.
10. Rain Water Harvesting is proposed which will be harvested through 27 no. of recharging pits.
11. **Solid Waste Management:** From the residential complex solid waste in form of food waste from kitchen and miscellaneous waste will be generated which will be about 1250.79 kg/day. The generated solid waste from the residential complex will be segregated as biodegradable and non-biodegradable. Biodegradable Waste 750.47 kg/day @ 60% will be treated in In-house Organic Waste Converter and Non Bio degradable waste 375.24@ 40% will be sent to Authorized Vendors as per SWM Rules 2016.
12. The total project cost is ₹ 94.0 Crores.
13. The project proponent along with the consultant **M/s Rightsource Industrial Solutions Pvt. Ltd., (Telangana) – 500072** made a detailed presentation on the proposal.

Considering the information / documents furnished by the proponent and presentation made by the consultant on behalf of the project proponent, the SEAC decided to take decision on the proposal after the proponent submits the following information/ documents followed by the site visit of the Sub-Committee of SEAC:

- (i) Supporting documents regarding land schedule and kissam of land.
- (ii) Copy of power of attorney having registration with the Sub-Register from all 6 owners for construction of building.
- (iii) Copy of permission of PH Division water supply, Bhubaneswar regarding supply of water to that proposed project.
- (iv) Status of permission from CGWA and Water Resources, Govt. of Odisha for ground water drawal (if provision of usage of ground water in future).
- (v) NOC from drainage department for discharge of treated water to readymade municipality drain provided near proposed location.
- (vi) Detailed calculation for generation of waste water and its management during monsoon and non-monsoon.
- (vii) Detailed calculation of treated water how to be used and where it will be discharged with drainage map / drainage design.
- (viii) Dimensions of underground sumps use for Municipality water storage and rain water harvesting storage with layout.
- (ix) Breakup percentage of green belt and landscape with detailed plan and layout. No. of plants shall be increased minimum to 1700
- (x) Details of rainwater harvesting proposed in the project and amount compensated towards water requirement/recharging as well.
- (xi) Transplantation of trees from construction site to green belt area rather than cutting of trees. A proposal to this effect shall be submitted.
- (xii) DG set stack height details including location and its effect w.r.t. sound and emission and wind direction in that area.
- (xiii) Reduction in no. of DG sets capacity to be used and revised layout of DG set.
- (xiv) Breakup percentage of power requirement by CESU and Renewable Solar energy (5%) with detailed plan.
- (xv) Relocation of STP near to drainage.
- (xvi) Water quality analysis report of ground water in that area.
- (xvii) Details of Solid Waste Management i.e. copy of agreement with agency collecting solid waste (non-biodegradable) from the premises.
- (xviii) There will be G+4 club house for resident. A legal affidavit to be submitted mentioning that club house will not be used for commercial purpose either by the proponent or by the resident.
- (xix) Detailed e-Waste Management practice.

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ITEM NO. 02

PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF KHAJURDIHI-BALDIH IRON AND MANGANESE MINES OF LATE MATADIN SHARDA (LESSEE) FOR PRODUCTION OF 1,06,137 CUM IRON ORE AND 4,480 CUM MANGANESE ORE OVER AN AREA 31.56 HA. IN VILLAGES - KHAJURDIHI & BALDIH, TAHASIL - KOIDA, SUBDIVISION – BONAI, DIST - SUNDARGARH OF M/S. MATADIN SHARDA (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. The proposal is for Terms of Reference of Khajurdihi-Baldih Iron and Manganese Mines of Late Matadin Sharda (Lessee) for production of 1,06,137 cum Iron ore and 4,480 cum Manganese ore over an area 31.56 Ha. in villages - Khajurdihi & Baldih, Tahasil - Koida, Subdivision – Bonai, Dist - Sundargarh of M/s. Matadin Sharda.
3. The Mining Lease of Khajurdihi – Baldih Iron and Manganese Mines over an area of 31.56 hectare is entirely in forest land, falls in the revenue village Khajurdihi & Baldih in Koira PS under Bonai Sub-Division of Sundargarh district, Odisha, was a part of mining lease area over 119.543 hectares consisting of three discontinuous blocks which was originally held by M.S. Deb from 31.08.1947, then transferred to M/s Mining Corporation of India on 19.08.1978 and finally transferred to Late Matadin Sharda vide transfer proceeding no. 8955/III(B)MG87/86 dt. 31.07.1986 and deed of transfer was executed on 24.08.1986. Since the lease was held from 31.08.1947 and the lease period has become more than 50 Years upto 12.01.2015, the date of Gazette Notification, the period of lease is deemed to have been extended for 5 years up to 31.03.2020 for non-captive mines as per section 8A(6) of MM (d & R) Amendment Act, 2015.
4. The mining operation has been stopped within the lease area after obtaining the directions of the DDM, Koira, vide letter no. 6836, dt. 10.04.2006 due to want of forest clearance. The ML area of 31.56 ha entirely comprises of forest land. Stage –I clearance for the forest land involved in the lease area has been obtained vide letter no. 5-ORC375/2019-BHU, dated 07.06.2019. 26.949 ha. of non-forest govt. land has been identified in village Sana sibanathpur (Khata No. 7, Plot No. 29) under Gurundia Tehsil in Bonai Forest Range of Bonai Forest Division in lieu of forest land involved in the ML area for compensatory afforestation.
5. Since the scheme of mining was valid upto 31.03.2017, the review of the mining plan has been prepared for a period of 2years i.e. upto the end of the lease period. This review of the mining plan was approved by the Regional Controller of Mines, Indian Bureau of Mines vide letter no- MS/OTFM/09-ORI/BHU/2018-19, date 28-05-2018. Based on the exploration input it is planned to produce a maximum of 89,600 cum ROM of Iron ore & 4,480 cum ROM of Manganese ore from mines i.e. 2,66,240 t of iron ore and 12,000T of manganese ore; apart from these, ROM of Iron ore Production from dump re-handling will be 12,057 cum. per annum i.e. 33,760 t. Thus, 3,00,000 t / annum iron ore (including sub grade) & 12,000 t / annum manganese ore (including sub grade) will be produced from the mines.

6. The ML area is featured under the SOI toposheet No. 73 G/5 bounded by 21051'54.64" N - 21052'18.52" N latitude and 85016'59.40" E - 85017'21.00" E longitude. The mining lease area is also accessible from Koira town through 8km long all weather road. Barbil (Mining Town) is located at a distance of 45 km via Koira. Tensa township is situated at a distance of only 20 km from M.L area. The nearest railway station / siding are Barsuan which is situated at a distance of 33 km from the M.L area via Koira & Tensa. Full-fledged market facilities, postal and medical facilities are available at Koira. Interstate boundary between Odisha and Jharkhand lies at distance of 15.5km in North-West direction from the proposed project site.
7. Earlier Public Hearing was conducted on 28.03.2012 for the project and the final EIA /EMP report was submitted for EC to SEIAA, Odisha. After the presentation, though SEAC had recommended for EC but SEIAA has not issued final EC letter due to the want of Stage-I of Forest Clearance. Later on 02.08.2019, SEIAA, Odisha vide letter no. 7093/SEIAA has directed the company to apply afresh online for issue of ToR to conduct EIA study.
8. Now after obtaining Stage -1 forest clearance, Shri Bajrang Sharda, Legal Heir of Late Matadin Sharda has applied for EC again to produce maximum ROM of 1,06,137 cum and Setting up a Crusher of 150 TPH capacity & Screening Plant of 200 TPH capacity; maximum production of iron ore & Manganese ore to be 300,000 TPA and 12,000 TPA respectively.
9. The mining lease area is entirely located in hill forest which slopes from SW to NE. The highest altitude is 823 AMSL in SW corner and lowest elevation is 656 AMSL in NE corner of the lease area. The mining lease area is located in tropical region where climate is characterized by hot summers and cool winters. There is no human settlement within the applied lease area. Mining shall commence from the south-western part of the leasehold, from the existing Quarry- 1 and will develop more in depth. The quarry may deepen maximum upto 82m (729m AMSL is the pit limit at the end of the lease period) from the highest surface level having 13 benches. Opencast semi-mechanized method of mining will be adopted with drilling & blasting, on single shift basis with the deployment of 100mm dia DTH drill, 0.9m³ capacity excavator and 10t capacity tippers. Height and width of the benches will be maintained at 6m & 10m respectively; the individual benches will be kept at 850 while overall quarry slope angle will be maintained at around 300 with horizontal. The ROM will be excavated & loaded to tipper and transported to crushing & screening site for breaking & sizing; Waste material will be transported to new dump namely Dump- 1A. ROM iron ore from mines will be crushed in 150 TPH crusher and screened in 200 TPH screening plant for preparation of saleable ore. The existing waste dump 'Dump-1' over 1.197 ha. has 80,380 cum waste material, of which 30% are sub grade iron ore (+45% to 55% iron), which will be screened and saleable ore will be recovered. The entire ROM manganese ore will be broken, sorted & sized manually. Ore to waste ratio was 1:0.26.
10. Based on the rated production of mine and mineable reserve, it is estimated that the life of the mine shall be 10 years. Till the end of the life of the mines, an area of 29.899 hectare shall be used in mining related activities out of 31.566 hectare of ML area. By the end of the lease period 193,506 m³ (56,266 m³ waste from dump rehandling and 137,240 m³ from mining) will be to be generated, which will be dumped over 0.77 ha. The existing waste dump 'Dump-1' over 1.197 ha. has 80,380

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cum waste material, of which 30% are sub grade iron ore (+45% to 55% iron), which will be screened and saleable ore will be recovered. The 56,266 cum waste generated (in two years period) during the process of recovery will be shifted to proposed Dump-1A. Since there is no possibility of exhaust of ore during the balance lease period, there is no reclamation & rehabilitation plan for the mined out area. However there is plan to stabilize the Dump -1A by planting 1925 saplings on dump slope of 'Dump-1A'. To maintain ecological balance and to check harmful effects imposed on the environment due to proposed mining and allied activities, environmental control measures such as Land use planning, Solid waste management, Air pollution control measures, Water pollution control measures, Noise pollution control measures, Occupational safety health and Socio-economic condition have been envisaged.

11. The mining activity shall generate employment opportunity of about 233 nos. and most of them shall be fulfilled from the locals. The peak water requirement shall be 25 m³/ day and shall be met from the ground water with due permission. As the water table of the region is 6 to 9m below the general ground level at 660m AMSL. It varies between post monsoon to pre monsoon period i.e. 654m AMSL in post monsoon to 651m AMSL in pre monsoon. So there will be no accumulation of water in the proposed pit by the end of the conceptual period as the ultimate pit limit will be at 729m AMSL.
12. The project cost is estimated to be ₹ 10 crores and there is a budgetary provision of ₹ 80 lakhs as capital cost towards environmental protection measures, whereas ₹ 18 lakhs will be spent annually towards regular maintenance & recurring activities. ₹ 10 lakhs will be spent under CER for various socio-economic activities.
13. The project proponent along with the consultant **M/s Centre for Envotech & Management Consultancy Pvt. Ltd. Bhubaneswar** made a detailed presentation on the proposal.

Considering the information / documents furnished by the proponent and presentation made by the consultant on behalf of the project proponent, the SEAC decided to take decision on the proposal after the proponent submits the following information/ documents:

- (i) Status of land as on 25.10.1980 w.r.t. Forest Conservation Act, 1980.
- (ii) Copy of public hearing proceedings.
- (iii) Mitigative measures to be taken to protect the Khajurdihi nala due to mining activities, which is flowing at a distance of 200 m.
- (iv) Details of total lease area with supporting documents. Total lease area surrendered with supporting documents.
- (v) Dimensions of overburden dump.
- (vi) Copy of Wildlife Conservation Plan duly authenticated by the Chief Wildlife Warden of the State Government for conservation of Schedule I fauna, if any exists in the study area.
- (vii) Certificate from the concerned DFO that the location is not within the notified elephant corridor area.
- (viii) The production details of the mine from the inception of the mine till the date of closure duly authenticated by the Steel & Mines Department, Govt. of Odisha.

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(ix) Copy of Regional Wildlife Conservation Plan.


(x) Copy of payment details made by the lessee towards preparation of Regional Wildlife Conservation Plan.

ITEM NO. 03

PROPOSAL FOR ENVIRONMENTAL CLEARANCE FOR BANKIA QUARTZ AND GEMSTONES MINES OVER AN MINING LEASE AREA OF 21.092 HA AT VILLAGE - BANKIA, TAHASIL- BIRAMAHARAJPUR, DIST-SONEPUR, ODISHA OF M/S MANIKESWARI MINERALS (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. The proposal is for Terms of Reference for Bankia Quartz and Gemstones Mines over an mining lease area of 21.092 Ha at Village - Bankia, Tahasil- Biramaharajpur, Dist- Sonepur, Odisha of M/s Manikeswari Minerals.
3. M/s Manikeswari Minerals, the Lessee of Bankia Quartz and Gemstone deposits is a Proprietorship (private individual) firm having its office at - Bhawanipatna in the district of Kalahandi, Odisha. Sri Rajendra Kumar Agarwal is the proprietor of the Manikeswari Minerals.
4. The said lease is located in survey of India Topo Sheet No. 73 D / 1, bounded by Latitude: 20° 56' 45" to 20° 57' 01"N and longitude of 84° 05' 19" to 84° 05' 38"E. Kissam of Land are Mala, Atta, Patharbani, Unnata Jogana Jogya and Gochar. The ML area is accessible from district head quarter Sonepur by covering a distance of 18 km towards east. The nearest railway station is Charmal at distance 20km from the lease area. Biju Patnaik International Airport is at a distance of approx. 200 km from the project site. Nearest river is Hariharjor River- 4.5 Km. Nearest town is Biramaharajpur 11km and nearest habitation is Bankia 0.7km.
5. Mining Lease was granted by Department of Steel & Mines, Govt of Odisha, vide order No III(E)SM-36/2003-262Dt 7.1.2017 as per Mineral concession rule 2016 for 50 years.
6. Mining plan is prepared under Rule 22 of MCR 1960, by the RQP, Sri N J Jena, and (Regn. No. RQP/CAL/236/96/A) and duly approved by Regional Controller of Mines vide letter no. BBS / SNP/Qtz & Gem / MP-255 on dated 29.09.2005.
7. The mineable reserve for Quartz is 377825 tonnes and 17.5 Kg of Amethyst (Gemstone).
8. Quartz in the ML area is excavated by conventional method of opencast mining on single shift basis. Drilling and blasting is required to be performed for loosening of the rock mass. Mining machines consisting of jackhammer Compressor etc. After blasting breaking will be done manually by conventional manual method using hammer and crowbars. After mining and sizing materials will be stacked manually.
9. During plan period 8286 m³ of waste will be generated .Considering swell factor as 1.2 the total broken volume will be 9943 m³.
10. For dumping these waste materials a proposed dump has been suggested in the ML area covering an area of 1.68 Ha and the proposed dump height will be 1.0 m.

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11. A retaining wall around the dump will be constructed to prevent the wash off of dumps. Around the retaining wall a garland drain and settling tank will be provided to prevent the possible transportation of mine dust or fines..
12. The colluvial material after recovery of the gemstone will be utilized for back filling immediately.
13. No. of trees planted in first 5 years is 1175 nos in area 1.720 Ha.
14. The total man power is 44 persons.
15. Water requirement is 8 KLD for both domestic and non-domestic and be source from nearby nalas.
16. The total cost of project is ₹ 40 Lakhs.
17. The consultant **M/s Kalyani Laboratories (Pvt) Ltd. Pahala, Bhubaneswar** along with the proponent has made a detailed presentation before the SEAC.

Considering the information / documents furnished by the proponent and presentation made by the consultant on behalf of the project proponent, the SEAC decided to take decision on the proposal after the proponent submits following information / documents.

- (i) Supporting documents regarding land schedule and kissam of land.
- (ii) In the mining lease area Gochar land is included which need to be conserved and equivalent land shall be allotted by the collector. Action taken, if any for conversion of Gochar land is to be submitted.
- (iii) Certificate from Mining Officer, Bolangir that no mining activity had done in the mining lease.

ITEM NO. 04

PROPOSAL FOR ENVIRONMENTAL CLEARANCE FOR CLUSTER-3 MINE WHICH IS CONSTITUTED OF KALACHUA HILLOCKS OVER AN AREA OF 1213.155 AC./49.840 HA. LOCATED IN VILLAGES - DANGARPADA & SANTARAPUR, TAHASIL – BEGUNIA, DIST- KHORDHA - (TOR FOR CLUSTER APPROACH)

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. The proposal is for Terms of Reference for Cluster-3 Mine which is constituted of Kalachua hillocks over an area of 1213.155 Ac./49.840 Ha. located in Villages - Dangarpada & Santarapur, Tahasil – Begunia, Dist- Khordha of Shree Jagannath Temple Administration, Puri, Odisha.
3. The project falls under Category "B1", as per Notification of MOEF & CC vide S.O. No. 3977(E), Appendix- XI, dated the 14th August, 2018.
4. The total area is non-forest land Govt. land comprising of 12 nos. quarry leases covering a total mineralized area of 1213.155 Acres or 49.840 Hectares located in village Dangarpada & Santarapur under Begunia Tahasil of Khordha, district, Odisha. The coordinates of the area is Latitude - 20° 05' 41.45" N to 20° 06' 12.41" N and Longitudes - 85°30'28.63" E to 85°30'53.44" E and comes under Toposheet No. 73 H/12.

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5. Connectivity - The Nearest road is NH 16 which is 5 km and NH 24 is 12.5 km to project site. The nearest railway station is Khordha Railway Station at a distance of 14Km. from the project site and Biju Patnaik International Airport is at a distance of approx. 38 km from the project site. Chandaka elephant sanctuary is located at a distance of 38Km from the cluster area. Nearest rivers are Mandakini River- 6 Km and Bali River- 4.5 Km. Nearest Reserve forest is Tangi RF - 11 Km. No state or national boundary exists within 10 Km radius of the project. The nearest defence installation is CISF Munduli campus at a distance of 28.21 Km from the project site. Nearest habitation is Jankia village is 6.4 km.
6. Mining plan approved by Directorate of Geology, Govt. of Odisha vide memo no.7896 on dated 27.09.2019. The individual quarry lease of the cluster have either been auctioned or to be auctioned for long term quarry lease of 10 years for building stone/Road metal by the tenant Shree Jagannath Temple Administration, Puri through the Sub-Collector, Khordha cum Authorised Officer.
7. Existing quarries over the area are worked out up to various depths and the rock mass is exposed up to a lowest extent of 57mRL in Cluster-3 area. Cluster-3 (Kalachua) displays highest altitude of 140mRL and lowest altitude of 60mRL.
8. The total geological reserve over Cluster-3 mineralized area has been estimated as 125, 00, 880 cum. And mineable reserve is 101, 43, 857 cum
9. The Mine proposed to produce total 58, 00,000 Cu.m of building stone/road metal during Plan Period (Ten Years).
10. A total of 670 workers (Skilled-80nos., Semi-skilled-170nos. and Un-skilled-408 nos.& Mines Manager/Mine Permit Manager-12 nos) will be employed during mining operation
11. A total of 9, 30,204 m³ of top-soil mixed with boulders and pebbles are envisaged to be generated during the plan period in course of mining. It is proposed to store this top-soil in the earmarked site and will be utilized for nearby avenue plantation purpose after separated out from the mixed rock boulders and pebbles. Construction of retaining wall and plantation around proposed dump will be carried out
12. The mining activities will be carried out in the cluster area by semi mechanized by deploying excavator/loader. Height of the bench varies from 3m to 6m & slope of individual bench will be 80° to 85° with overall slope angle will be less than 45°.
13. Handling of rock mass will be done both manually and by excavators. Handpicks, spade, chisel, hammer will be used by manual labours for sorting and sizing. Loosening of rock mass will be done by drilling and blasting. The excavated rock mass will be loaded in to 10T/20T capacity tippers/trucks by excavators. As the loading, drilling and transportation will be partly achieved through use of machineries, the mines come under semi-mechanised category.
14. The loosening of rock mass will be done by drilling and blasting. Drilling will be done either by wagon drill or jack hammer taking in to consideration the bench height varying from 3 meter to 6m.
15. Mine road will be maintained between benches for easy movement of workers and vehicles. Suitable gradient of haul road will be maintained in between 1 in 16 to 1 in 20.

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16. Water Requirement - 25 KLD of potable water will be required from which 10 KLD of water will be required for drinking & domestic purpose. 5 KLD of water is suggested to be utilized for dust suppression and 5 KLD for plantation purpose. Water will be sourced from ground water and rain water harvesting from the existing quarry.
17. Power requirement - Solar lights will be employed for day to day living purposes. Diesel requirement will be 6000 liters/month.
18. Waste will be about 30% of excavation will be generated. 20% of the waste will be transported to the crusher site along with valuable building stone/road metal where these will be sorted out. The remaining 10% of the total waste will be separated at the quarry head and will be stacked in the temporary waste dump of respective quarry lease and will be utilised by the lessee for making of mine road and allied infrastructures.
19. In the process, 2600 nos. of saplings will be used for plantation in the quarried out areas of 2.160 Ha in Cluster-3 respectively.
20. During the conceptual period the abandoned quarry will converted to water reservoir and plantation will developed along the boundary.
21. The total estimated cost of the project is approximately INR `300 lakhs.
22. The consultant **M/s Kalyani Laboratories (Pvt) Ltd. Pahala, Bhubaneswar** along with the proponent has made a detailed presentation.
23. The consultant had intimated during the presentation that they have already collected one season baseline data during the period of October 2019 to December 2019. The Consultant had also intimated that they will use the above data for preparation of EIA/EEMP report. The Committee had agreed for that.

Considering the information / documents furnished by the proponent and presentation made by the consultant **M/s Kalyani Laboratories (Pvt) Ltd. Pahala, Bhubaneswar**, the SEAC prescribed "Terms of Reference (ToR)" for undertaking detailed EIA study in cluster approach as per **Annexure - I**.

ITEM NO. 05

PROPOSAL FOR ENVIRONMENTAL CLEARANCE FOR CLUSTER-2 MINE WHICH IS CONSTITUTED AREAS IN GOLAPUTAKHUA HILLOCKS (28.189 HA.), DUBURI HILLOCKS (2.72 HA.), HATIA HILLOCKS (32.442 HA.), & KALINGA HILLOCKS (19.805 HA.) OVER AN TOTAL AREA OF 83.226 HA./205.651 AC. LOCATED IN VILLAGES - NIJAGADATAPANGA, KIAJHARI, JHINKIJHARI & CHHATRAMA, DISTRICT- KHORDHA, ODISHA - (TOR FOR CLUSTER APPROACH)

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. The proposal is for Terms of Reference for Cluster-2 Mine which is constituted areas in Golaputakhua hillocks (28.189 Ha.), Duburi hillocks (2.72 Ha.), Hatia hillocks (32.442 Ha.), & Kalinga hillocks (19.805 Ha.) over an total area of 83.226 Ha./205.651 Ac. located in Villages - Nijagadatapanga, Kiajhari, Jhinkijhari & Chhatrama, District- Khordha, Odisha of Shree Jagannath Temple Administration, Puri, Odisha.

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3. The project falls under Category "B1", as per Notification of MOEF & CC vide S.O. No. 3977(E), Appendix- XI, dated the 14th August, 2018.
4. The total area is non-forest land Govt. land comprising of 20 nos. quarry leases covering a total mineralized area of 205.651 Acres or 83.226 Hectares (Golaputakhua 28.189 HA, Duburi 2.72 HA, Hatia 32.442 HA, & Kalinga 19.805 HA.) located in village Nijagadatapanga, Kiajhari, Jhinkijhari & Chhatrama of Khordha, district, Odisha. The coordinates of the area is Latitude - 20° 05' 00.10" N to 20° 06' 26.19" N and Longitudes - 85° 34' 24.99" E to 85° 35' 25.68" E and comes under Toposheet No. 73 H/12.
5. Connectivity - The Nearest road is NH 16 which is 100 m and NH 24 is 10 km to project site. The nearest railway station is Tapanga Railway Station at a distance of 3.2Km. from the project site and Biju Patnaik International Airport is at a distance of approx. 30 km from the project site. Chandaka elephant sanctuary is located at a distance of 12Km from the cluster area. Nearest rivers are Daya River- 7.8 Km and Bhargavi River- 10 Km. Nearest Reserve forest is Tangi RF - 11 Km. No state or national boundary exists within 10 Km radius of the project. The nearest defence installation is CISF Munduli campus at a distance of 21 Km from the project site. Nearest habitation is Tapanga village is 1 km.
6. Mining plan approved by Directorate of Geology, Govt. of Odisha vide memo no.7900 on dated 27.09.2019. The individual quarry lease of the cluster have either been auctioned or to be auctioned for long term quarry lease of 10 years for building stone/Road metal by the tenant Shree Jagannath Temple Administration, Puri through the Sub-Collector, Khordha cum Authorised Officer.
7. The targeted area represents a hilly terrain comprising four isolated hillocks/Patches, viz., Cluster-2A (Golaputakhua), Cluster-2B (Duburi), Cluster-2C (Hatia) & Cluster-2D (Kalinga) with undulated topography. Cluster-2A (Golaputakhua) displays highest altitude of 120mRL and lowest altitude of 50mRL. Cluster-2B (Duburi) displays highest altitude of 55mRL and lowest altitude of 30mRL. Cluster-2C (Hatia) displays highest altitude of 170mRL and lowest altitude of 35mRL. Cluster-2D (Kalinga) displays highest altitude of 145mRL and lowest altitude of 35mRL.
8. The total geological reserve over Cluster-2 mineralized area has been estimated as 346, 53, 449 cum. and mineable reserve is. 300, 90, 660 cum.
9. The Mine proposed to produce total 17, 00,000 m³ of building stone/road metal during Plan Period (Ten Years).
10. A total of 1900 workers (Skilled – 400 nos., Semi – skilled – 600 nos. and Un – skilled - 880 nos.& Mines Manager / Mine Permit Manager-20 nos) will be employed during mining operation.
11. A total of 8,97,273 m³ (345078 m³ from Cluster- 2A , 15189 m³ from Cluster- 2B , 384936 m³ from Cluster- 2C & 152070 m³ from Cluster- 2D) of top-soil mixed with boulders and pebbles are envisaged to be generated during the plan period in course of mining. It is proposed to store this top-soil in the earmarked site and will be utilized for nearby avenue plantation purpose after separated out from the mixed rock boulders and pebbles. Construction of retaining wall and plantation around proposed dump will be carried out.

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12. The mining activities will be carried out in the cluster area by semi mechanized by deploying excavator/loader. Height of the bench varies from 3m to 6m & slope of individual bench will be 80° to 85° with overall slope angle will be less than 45°.
13. Handling of rock mass will be done both manually and by excavators. Handpicks, spade, chisel, hammer will be used by manual labors for sorting and sizing. Loosening of rock mass will be done by drilling and blasting. The excavated rock mass will be loaded in to 10T/20T capacity tippers/trucks by excavators. As the loading, drilling and transportation will be partly achieved through use of machineries, the mines come under semi-mechanised category.
14. The loosening of rock mass will be done by drilling and blasting. Drilling will be done either by wagon drill or jack hammer taking in to consideration the bench height varying from 3 meter to 6m.
15. Mine road will be maintained between benches for easy movement of workers and vehicles. Suitable gradient of haul road will be maintained in between 1 in 16 to 1 in 20.
16. Water Requirement - 25 KLD of potable water will be required from which 10 KLD of water will be required for drinking & domestic purpose. 5 KLD of water is suggested to be utilized for dust suppression and 5 KLD for plantation purpose. Water will be sourced from ground water and rain water harvesting from the existing quarry.
17. Power requirement - Solar lights will be employed for day to day living purposes. Diesel requirement will be 6000liters/month.
18. Waste will be about 30% of excavation will be generated. 20% of the waste will be transported to the crusher site along with valuable building stone/road metal where these will be sorted out. The remaining 10% of the total waste will be separated at the quarry head and will be stacked in the temporary waste dump of respective quarry lease and will be utilised by the lessee for making of mine road and allied infrastructures.
19. In the process, 31580 nos., 2580 nos., 36920 nos. and 21908 nos. of saplings will be used for plantation in the quarried out areas of 26.317 Ha, 2.150 Ha, 30.766 Ha. and 18.256 Ha in Cluster-2A (Golaputakhua), Cluster-2B (Duburi), Cluster-2C (Hatia) & Cluster-2D (Kalinga) respectively.
20. During the conceptual period the abandoned quarry will converted to water reservoir and plantation will developed along the boundary.
21. The total estimated cost of the project is approximately INR ₹ 420 lakhs.
22. The consultant **M/s Kalyani Laboratories (Pvt) Ltd. Pahala, Bhubaneswar** along with the proponent has made a detailed presentation.
23. The consultant had intimated during the presentation that they have already collected one season baseline data during the period of October 2019 to December 2019. The Consultant had also intimated that they will use the above data for preparation of EIA/EMP report. The Committee had agreed for that.

Considering the information / documents furnished by the proponent and presentation made by the consultant **M/s Kalyani Laboratories (Pvt) Ltd. Pahala, Bhubaneswar**, the SEAC prescribed "Terms of Reference (ToR)" for undertaking detailed EIA study in cluster approach as per **Annexure - II**.

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

Secretary, SEAC

ITEM NO. 06

PROPOSAL FOR ENVIRONMENTAL CLEARANCE FOR CLUSTER-1 MINE WHICH IS CONSTITUTED AREAS IN DHANIA HILLOCKS (52.284 HA.), SANKHARI HILLOCKS (33.428 HA.) & TANGENI HILLOCKS (10.885 HA.) OVER AN TOTAL AREA OF 96.597 HA. / 238.691 AC. LOCATED IN VILLAGE- KAIPADAR, DIST- KHORDHA, ODISHA – (TOR FOR CLUSTER APPROACH)

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. The proposal is for Terms of Reference for Cluster-1 Mine which is constituted areas in Dhania hillocks (52.284 Ha.), Sankhari hillocks (33.428 Ha.) & Tangeni hillocks (10.885 Ha.) over a total area of 96.597 Ha. / 238.691 Ac. located in Village- Kaipadar, Dist- Khordha, Odisha of Shree Jagannath Temple Administration, Puri, Odisha.
3. The project falls under Category "B1", as per Notification of MOEF & CC vide S.O. No. 3977(E), Appendix- XI, dated the 14th August, 2018.
4. The total area is non-forest land Govt. land comprising of 30 nos. quarry leases covering a total mineralised area of 96.597 Hectares or 238.691Acres (Dhania 52.284 Ha, Sankhari 33.428 Ha. & Tangeni 10.885 Ha) located in village Kaipadar of Khordha, district, Odisha. The coordinates of the area is Latitude - 20° 06' 07.22" N to 20° 06' 51.38" N and Longitudes - 85° 32' 59.94" E to 85° 34' 13.03" E and comes under Toposheet No. 73 H/12.
5. Connectivity - The Nearest road is NH 16 which is 1 km to project site. The nearest railway station is Khordha Railway Station at a distance of 11.15Km. from the project site and Biju Patnaik International Airport is at a distance of approx. 33 km from the project site. Chandaka elephant sanctuary is located at a distance of 13Km from the cluster area. Nearest rivers are Daya River- 10 Km and Bhargavi River- 11 Km. Nearest Reserve forest is Tangi RF - 11 Km. No state or national boundary exists within 10 Km radius of the project. The nearest defence installation is CISF Munduli campus at a distance of 40 Km from the project site. Nearest habitation is Tapanga village is 1 km.
6. Mining plan approved by Directorate of Geology, Govt. of Odisha vide memo no.7892 on dated 26.09.2019. The individual quarry lease of the cluster have either been auctioned or to be auctioned for long term quarry lease of 10 years for building stone/Road metal by the tenant Shree Jagannath Temple Administration, Puri through the Sub-Collector, Khordha cum Authorised Officer.
7. Existing quarries over the area are worked out up to various depths and the rock mass is exposed up to a lowest extent of 11mRL in Cluster-1A (Tangeni), 49mRL in Cluster-1B (Sankhari) & 42mRL in Cluster-1C (Dhania).
8. The total geological reserve over Cluster-1 mineralized area has been estimated as 375, 83, 461cum. And mineable reserve is 301,24, 801 cum.
9. The Mine proposed to produce total 150, 50,000 Cu.m of building stone/road metal during Plan Period (Ten Years).
10. A total of 1750 workers (Skilled-300nos., Semi-skilled-500nos. and Un-skilled-920 nos.& Mines Manager/Mine Permit Manager-30nos) will be employed during mining

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operation.


11. A total of 5, 65,840 m³ (124960 m³ in Cluster 1A + 231840 m³ in Cluster 1B + 209040 m³ in Cluster 1C) of top-soil mixed with boulders and pebbles are envisaged to be generated during the plan period in course of mining. It is proposed to store this top-soil in the earmarked site and will be utilized for nearby avenue plantation purpose after separated out from the mixed rock boulders and pebbles. Construction of retaining wall and plantation around proposed dump will be carried out.
12. The mining activities will be carried out in the cluster area by semi mechanized by deploying excavator/loader. Height of the bench varies from 3m to 6m & slope of individual bench will be 80° to 85° with overall slope angle will be less than 45°.
13. Handling of rock mass will be done both manually and by excavators. Handpicks, spade, chisel, hammer will be used by manual labors for sorting and sizing. Loosening of rock mass will be done by drilling and blasting. The excavated rock mass will be loaded in to 10T/20T capacity tippers/trucks by excavators. As the loading, drilling and transportation will be partly achieved through use of machineries, the mines come under semi-mechanised category.
14. The loosening of rock mass will be done by drilling and blasting. Drilling will be done either by wagon drill or jack hammer taking in to consideration the bench height varying from 3 meter to 6m.
15. Mine road will be maintained between benches for easy movement of workers and vehicles. Suitable gradient of haul road will be maintained in between 1 in 16 to 1 in 20.
16. Water Requirement - 25 KLD of potable water will be required from which 10 KLD of water will be required for drinking & domestic purpose. 5 KLD of water is suggested to be utilized for dust suppression and 5 KLD for plantation purpose. Water will be sourced from ground water and rain water harvesting from the existing quarry.
17. Power requirement - Solar lights will be employed for day to day living purposes. Diesel requirement will be 6000liters/month.
18. Waste will be about 30% of excavation will be generated. 20% of the waste will be transported to the crusher site along with valuable building stone/road metal where these will be sorted out. The remaining 10% of the total waste will be separated at the quarry head and will be stacked in the temporary waste dump of respective quarry lease and will be utilised by the lessee for making of mine road and allied infrastructures.
19. In the process, 11603 nos., 37403 nos. and 59054 nos. of saplings will be used for plantation in the quarried out areas of 9.669 Ha, 31.169 Ha and 49.211 Ha in Cluster-1A (Tangeni), Cluster-1B (Sankhari) and Cluster-1C (Dhania) respectively.
20. During the conceptual period the abandoned quarry will converted to water reservoir and plantation will developed along the boundary.
21. The total estimated cost of the project is approximately INR ₹400 lakhs.
22. The consultant **M/s Kalyani Laboratories (Pvt) Ltd. Pahala, Bhubaneswar** along with the proponent has made a detailed presentation.
23. The consultant had intimated during the presentation that they have already collected one season baseline data during the period of October 2019 to December 2019. The


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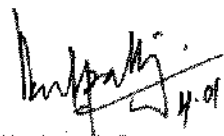

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Consultant had also intimated that they will use the above data for preparation of EIA/EMP report. The Committee had agreed for that.


Considering the information / documents furnished by the proponent and presentation made by the consultant M/s Kalyani Laboratories (Pvt) Ltd. Pahala, Bhubaneswar, the SEAC prescribed "Terms of Reference (ToR)" for undertaking detailed EIA study in cluster approach as per Annexure - III.

 04.01.2020
Sri. B. P. Singh
Chairman, SEAC


 04/01/2020
Sri. J. K. Mahapatra
Member, SEAC

 04.01.2020
Prof. (Dr.) B.K. Satpathy
Member, SEAC


Dr. D. Swain
Member, SEAC

 4/01/2020
Dr. Sailabala Padhi
Member, SEAC

Approved

 04.01.2020
Chairman, SEAC

TERMS OF REFERENCE FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY IN CLUSTER APPROACH AND INFORMATION TO BE INCLUDED IN THE EIA/EMP REPORT FOR CLUSTER-3 MINE WHICH IS CONSTITUTED OF KALACHUA HILLOCKS OVER AN AREA OF 1213.155 AC./49.840 HA. LOCATED IN VILLAGES - DANGARPADA & SANTARAPUR, TAHASIL – BEGUNIA, DIST- KHORDHA - (TOR FOR CLUSTER APPROACH)

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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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 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,



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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. 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.
60. This Terms of References (TORs) is valid for a period of three years from the date of issue of TORs for submission of the EIA/EMP report. (This is in confirmation with the MoEF&CC, Govt. of India office memorandum No. J-11013/41/2006-IA-II(I) (part) dated 08.10.2014).


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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.
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.


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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.
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


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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. 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.
60. **This Terms of References (TORs) is valid for a period of three years from the date of issue of TORs for submission of the EIA/EMP report. (This is in confirmation with the MoEF&CC, Govt. of India office memorandum No. J-11013/41/2006-IA-II(I) (part) dated 08.10.2014).**



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TERMS OF REFERENCE FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY IN CLUSTER APPROACH AND INFORMATION TO BE INCLUDED IN THE EIA/EMP REPORT FOR CLUSTER-2 MINE WHICH IS CONSTITUTED AREAS IN GOLAPUTAKHUA HILLOCKS (28.189 HA.), DUBURI HILLOCKS (2.72 HA.), HATIA HILLOCKS (32.442 HA.), & KALINGA HILLOCKS (19.805 HA.) OVER AN TOTAL AREA OF 83.226 HA./205.651 AC. LOCATED IN VILLAGES - NIJAGADATAPANGA, KIAJHARI, JHINKIJHARI & CHHATRAMA, DISTRICT- KHORDHA, ODISHA - (TOR FOR CLUSTER APPROACH)

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


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mine / lease period.

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 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


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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.
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.


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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.
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.



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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.
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


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
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. 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.
60. **This Terms of References (TORs) is valid for a period of three years from the date of issue of TORs for submission of the EIA/EMP report. (This is in confirmation with the MoEF&CC, Govt. of India office memorandum No. J-11013/41/2006-IA-II(I) (part) dated 08.10.2014).**


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TERMS OF REFERENCE FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY IN CLUSTER APPROACH AND INFORMATION TO BE INCLUDED IN THE EIA/EMP REPORT FOR CLUSTER-1 MINE WHICH IS CONSTITUTED AREAS IN DHANIA HILLOCKS (52.284 HA.), SANKHARI HILLOCKS (33.428 HA.) & TANGENI HILLOCKS (10.885 HA.) OVER AN TOTAL AREA OF 96.597 HA. / 238.691 AC. LOCATED IN VILLAGE- KAIPADAR, DIST- KHORDHA, ODISHA – (TOR FOR CLUSTER APPROACH)

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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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 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,



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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.
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


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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.
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.



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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.
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


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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. 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.
60. **This Terms of References (TORs) is valid for a period of three years from the date of issue of TORs for submission of the EIA/EMP report. (This is in confirmation with the MoEF&CC, Govt. of India office memorandum No. J-11013/41/2006-IA-II(I) (part) dated 08.10.2014).**



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