

**PROCEEDINGS OF THE MEETING OF STATE LEVEL EXPERT APPRAISAL
COMMITTEE, ODISHA HELD ON 19TH OCTOBER, 2019**

The SEAC met on 19th October, 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.

1. Sri. B. P. Singh	-	Chairman
2. Dr. D. Swain	-	Member
3. Prof. (Dr.) P.K. Mohanty	-	Member
4. Sri. J. K. Mahapatra	-	Member
5. Sri. K. R. Acharya	-	Member
6. Prof.(Dr.) B.K. Satpathy	-	Member
7. Dr. K.C.S Panigrahi	-	Member
8. Prof. (Dr.) H.B. Sahu	-	Member

ITEM NO. 1

PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF CONSTRUCTION OF (G+6) MULTI UTILITY COMPLEX & P.G STUDENTS HOSTEL AT SARDAR VALLAV BHAI PATEL POST GRADUATE INSTITUTE OF PEDIATRIC (SVPPGIP) OVER PLOT AREA OF 32,366.35 SQM (7.995 ACRES) AND BUILT-UP AREA OF 28,885.00 SQM” AT SARDAR VALLAV BHAI PATEL POST GRADUATE INSTITUTE OF PEDIATRIC (SVPPGIP) SISHUBHAWAN, CUTTACK (EC)

1. The proposal is for Environmental Clearance for Construction of (G+6) Multi Utility Complex & P.G Students Hostel at Sardar Vallav Bhai Patel Post Graduate institute of Pediatric (SVPPGIP) over plot area of 32,366.35 sqm (7.995 acres) and built-up area of 28,885.00 sqm” at Sardar Vallav Bhai Patel Post Graduate Institute of Pediatric (SVPPGIP) Sishubhawan, Cuttack.
2. The Project is located at Plot No. 2344 (p), 2380 (p) 2381 (p) 2382, 2383, 2384 (p), 2385, 2387, 2388, 2389, Khata No. 2121, Mouza Unit No. 13, Chandni Chowk, District Cuttack, State Odisha. The Coordinates are: Latitudes- 20°57'59. 42"N and Longitudes - 85°51'22.91"E. The nearest airport is Biju Patnaik International Airport, Bhubaneswar is at a distance of 24 km and Cuttack Railway Station is at 5 km away. Nearest National Highway is NH 5 at distance of 4.5 km.
3. The total water requirement is approx. 450 KLD (domestic + flushing), out of which total fresh water requirement will be 299 KLD & Flushing requirement will be 151 KLD, Green Belt requirement is 25 KLD, Road Wash and HVAC Requirement is 20 and 62 KLD, respectively. The total fresh water requirement will be met from Municipal supply and 2 bore-wells.
4. Total Parking area provided will be 8,492 sqm.
5. Power Requirement: Maximum demand load=1145KW/1156 kVA (Hostel & Hospital) Connected load = 1425.14 KW. Power will be supplied by the State Electricity Board. Power backup for the project will be through DG sets of total capacity 1301 KVA (2 No 750 KVA).
6. Waste Water Management: The STP shall be based on MBBR Technology with Ultra Filtration (aerobic) with capacity of 355 KLD for treatment of sewage.Total 348 KLD of treated water will come out from STP. Among which 258 KLD treated water will be recycled during Dry Season and 213 KLD will be recycled during monsoon.

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7. Solid Waste Management: The total municipal solid waste to be generated is approximately 2.365 t/day. Out of which Biodegradable waste is 1.100 t/day (Waste vegetables and foods etc.), Non-Biodegradable Waste is 0.843 t/day (Papers, cartons, thermo cool, plastics, glass etc.) and Bio Medical Waste=0.422 t/day (medicines, syringes, blood, etc.). Solid waste disposal will be made at the site in accordance to Municipal Solid Wastes (Management and Handling) Rules, 2016.
8. Total Green Area Measures 5066 m² (20.90 % of the Net Plot Area) which will be area under Green Belt Development. About 303 Nos. of Trees will be planted. Preference will be given to native trees. Allergy causing trees will be avoided. 25 KLD of treated waste water will be used for Green Belt Development. Apart from this plantation will be done along the approach Road.
9. The total project cost of the project is ` 117 Crores.
10. The project proponent along with the consultant **M/s Visiontek Consultancy Services Pvt. Ltd., Patia, Bhubaneswar** made a detailed presentation on the proposal.

Considering the information / documents furnished by the proponent and presentation made by the consultant **M/s Visiontek Consultancy Services Pvt. Ltd., Bhubaneswar** on behalf of the project proponent, the SEAC recommended for grant of Environmental Clearance for the project valid for a period of 7 years with stipulated conditions as per **Annexure – I**.

ITEM NO. 2

PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF ESTABLISHMENT OF COMMON BIO-MEDICAL WASTE TREATMENT FACILITY (CBWTF) OF CAPACITY 7 TPD AT VILLAGE- ARAKHAPADA, TEHSIL- SERAGADA. DISTRICT- GANJAM, ODISHA OF M/S MEDIAID MARKETING SERVICES UNDER VIOLATION CASE (EC)

1. This is a proposal for development of an Integrated Common Bio-medical Waste Treatment Facility including the Incinerator, autoclave, shredder and effluent treatment unit to handle 7 T of medical waste per day at - Arakhapada, Po- Seragada, Dist- Ganjam, Odisha.
2. The site is bounded by the coordinates of 190 32' 13.33" N & 190 32' 10.57" N and 840 34' 03.05" E & 840 34' 03.97" E belonging to SOI Toposheet No. E45A10. The average topographic elevation of the area varies between 217 ft AMSL & 224 ft AMSL with average slope of the area towards NW direction. There is no eco-sensitive area within 10 km radius of the plant site. The nearest eco-sensitive area is Kotagarh Wild Life Sanctuary bounded by proposed Elephant reserve area at a distance of 17.3 km from the boundary of the Plant site.
3. The said project activity falls under category 'B' of item 7 (da) as per amendment of EIA notification 2006 dated 17th April, 2015 and requires prior Environmental Clearance from the SEIAA in Odisha based on the appraisal by SEAC.
4. The Central Pollution Control Board had made the guideline in September 2013 for "Common Bio-Medical Waste Treatment Facility (CBWTF)" in order to discourage the individual incineration facility by health care establishments and strengthening CBWTF system.
5. M/s Mediaid had applied for Consent to Establish to the Regional Office, SPC Board, Berhampur. Consent to Establish was granted on 08/07/2015 vide order no. 1842/CTE – 662/2015. Based on the Consent to Establish, the proponent had gone with the Proceedings of the SEAC meeting held on 19th October, 2019

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construction and erection & commissioning of the plant as per the DPR and approached for Consent to Operate to the State Pollution Control Board, Odisha. The proponent was denied by OSPCB for Consent to Operate due to lack of Environmental Clearance. Since the project was completed without obtaining prior Environmental Clearance, this is a violation of the EIA Notification, 2006.

6. The proponent subsequently submitted the proposal to MoEF&CC, Govt. of India on 12.07.2017 as violation case as per MoEF&CC, Govt. of India Notification S.O. 804 (E) dated 14.03.2017.
7. The MoEF&CC, Govt. of India had issued Office Memorandum No. Z-11013/22/2017-IA-II (M), dated 15.03.2018, which stipulates that all the proposals of category 'B' projects/activities pertaining to different sectors, received within six months only i.e. up to 13th September, 2017 on the MoEF&CC, Govt. of India portal, but yet not considered by the EAC of MoEF&CC, Govt. of India, shall be transferred online to the SEAC/SEIAAs in the respective States/UTs.
8. This proposal was not considered by the EAC of MoEF&CC, Govt. of India. Hence, the MoEF&CC, Govt. of India had transferred the proposal to SEIAA, Odisha on 28.03.2018 for consideration as per MoEF&CC, Govt. of India Notification S.O. 804 (E) dated 14.03.2017.
9. Subsequently, application for Terms of Reference (ToR) was applied to SEIAA, Odisha and ToR was issued on Dt.11.07.2018 vide reference no 518/SEAC-140 by SEAC, Odisha under violation case.
10. To redress this problem and provide the health care establishments with a solution to their waste disposal dilemma, Mediaid Marketing Services has taken initiative for Development of Common Bio-Medical Waste Treatment and Disposal Facilities for waste generated in Ganjam and other adjoining areas falling under radius of 150 K.M.
11. The total water requirement for the project is 9 KLD and to be sourced from NAC Seragada & RWH. Regular makeup water 3 KLD.
12. Total Power Load due to machineries would be 65 KWH, to be procured from the nearest Grid, SOUTHCO. For emergency backup, a DG set (100 KVA) will be there.
13. Green belt and plantation will be developed in 0.518 Acres of the total plant area. 350 nos. of saplings will be planted.
14. The waste water generated from all sources is estimated as 8 KLD, which will be treated in a combined effluent treatment plant (10 KLD capacity) followed by disinfection. The process flow of ETP is as follows:
Hot Water Sump → Chemical Treatment → Sedimentation → Pressure Sand Filter → Activated Carbon Filter → Neutralization Tank → Scrubber → Hot Water Sump.
15. It is estimated that around 2.0 T of autoclavable waste and 5.0 T of incinerable waste will be generated. It is also estimated that about 5% of the total treated waste would have to be land filled and hence about 0.4 T of waste would have to be land filled. With the bulk density of 0.72 and compression ratio of 0.65% the annual volume of waste for land fill is estimated as 1.19 m³, which shall be stored in an impervious lines concrete pit of size 5m x 5m x 4 m.
16. Total manpower 48 nos.

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17. The total cost of project is ` 203 lakhs.
18. The proponent along with the consultant **M/s Visiontek Consultancy Services Pvt. Ltd., Patia, Bhubaneswar, Odisha** made a detailed presentation before the SEAC, Odisha on the EIA/EMP report prepared as per Terms of Reference (ToR) issued by the SEAC, Odisha.
19. The SEAC observed the following:
 - a) The proposal was considered by the State Level Expert Appraisal Committee (SEAC), Odisha in its meeting held on 01st June, 2018 for appraisal of the proposal for ToR in pursuance of the MoEF&CC, Govt. of India Notification dated 14th March, 2017. The SEAC, after deliberations on the proposal in terms of the provisions of the Notification dated 14th March, 2017, confirmed the case to be of violation of the EIA Notification, 2006 and recommended for the following:
 - (i) The State Government/SPCB to take action against the project proponent under the provisions of section 19 of the Environment (Protection) Act, 1986, and further no Consent to Operate to be issued till the project is granted EC.
 - (ii) Grant of Terms of Reference for undertaking EIA and preparation of Environment Management Plan (EMP), along with public hearing.
 - (iii) The project proponent shall be required to submit a bank guarantee equivalent to the amount of remediation plan and natural and community resource augmentation plan with the SPCB prior to the grant of EC. The quantum shall be recommended by the SEAC and finalized by the regulatory authority i.e. SEIAA, Odisha. The bank guarantee shall be released after successful implementation of the EMP, followed by recommendations of the SEAC and approval of the regulatory authority i.e. SEIAA, Odisha.
 - b) The public hearing for the proposal was conducted on 26.02.2019.
 - c) EIA/EMP study report has been prepared by a NABET Accredited / NABL Accredited Consultant namely **M/s Visiontek Consultancy Services Pvt. Ltd., Patia, Bhubaneswar, Odisha**.
 - d) Detailed assessment of Ecological Damage, Remediation Plan and Natural and Community Resource Augmentation Plan has been incorporated in Chapter - 13 of the EIA report.
 - e) An amount of ` 11,68,000/- (Rupees eleven lakh sixty-eight thousand only) has been estimated in the EIA / EMP report towards the cost of assessment of Environmental / Ecological damage due to violation as well as Natural and Community Resource Augmentation Plan.
 - f) There is no specific guideline issued by the MoEF&CC, Govt. of India for assessment of Environmental and Ecological Damage as well as estimation of cost for remediation plan as well as Natural and Community Resource Augmentation Plan.
 - g) In the absence of any guidelines, the cost as suggested by the proponent above to be taken into account for remediation plan as well as Natural and Community Resource Augmentation Plan. However, the proponent has to abide by the guidelines if issued by the MoEF&CC, Govt. of India in future and accordingly the proponent has to comply.

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- h) No record is available in the file about initiation of legal action against the project proponent by the State Govt./SPCB under the provisions of section 19 of the Environment (Protection) Act, 1986 for violation of the EIA Notification, 2006.

After detailed discussion, the SEAC recommended for grant of Environmental Clearance for the project valid for a period of 7 years with the following specific conditions in terms of the provisions of the MoEF&CC, Govt. of India notification dated 14th March, 2017 in addition to the conditions stipulated as per **Annexure – II**.

- (i) The SEAC recommended for an amount of ` 11,68,000/- (Rupees eleven lakh sixty-eight thousand only) towards Remediation plan and Natural and Community Resource Augmentation plan as the project proponent has completed the construction work of the project.
- (ii) The project proponent shall be required to submit a bank guarantee of an amount of ` 11,68,000/- (Rupees eleven lakh sixty-eight thousand only) towards Remediation plan and Natural and Community Resource Augmentation plan with the State Pollution Control Board, Odisha prior to the grant of Environmental Clearance.
- (iii) The bank guarantee shall be released after successful implementation of the EMP, followed by recommendations of the SEAC, Odisha and approval of the regulatory authority (i.e. SEIAA, Odisha).
- (iv) The SEIAA, Odisha may consider to request to the Govt. in F&E Deptt., Govt. of Odisha to take action against the project proponent under the provisions of section 19 of the Environment (Protection) Act, 1986 for violation of the EIA Notification, 2006. Environmental Clearance is to be issued after initiation of legal action against the project proponent.
- (v) The proponent has to abide by the guidelines if issued by the MoEF&CC, Govt. of India in future for assessment of Environmental and Ecological Damage as well as estimation of cost for remediation plan as well as Natural and Community Resource Augmentation Plan.

ITEM NO. 3

PROPOSAL FOR ENVIRONMENTAL CLEARANCE FOR PROPOSED “ ANANYA PALM BEACH” RESIDENTIAL APARTMENT CUM GUEST HOUSE PROJECT IN PLOT NO - 268 (PART) AT MOUZA –SIPASURUBULI, TEHSIL – PURI SADAR, DISTRICT –PURI, OF M/S. PRABHUKRUPA REALITIES PRIVATE LIMITED WITH TOTAL BUILT UP AREA - 32,859.52 SQM. (EC)

1. The proposal was considered for Environmental Clearance for proposed “ Ananya Palm Beach” Residential Apartment cum Guest House Project in Plot No - 268 (part) at Mouza –Sipasurubuli, Tehsil – Puri Sadar, District –Puri, of M/s. Prabhukrupa Realities Private Limited with total built up area -32,859.52 sqm.
2. The proposed development is a Residential Apartment cum Guest House building. Location on Plot No - 268 (P) & Khata No- 2 Area- Ac- 2.29 Dec. Mouza - Sipasurubuli, Thana -Puri Sadar, Puri. Plot area of project is estimated to be 9267.30 m² or 2.29 Acres.
3. The project comes under Building and Construction projects under schedule 8 (a) of the EIA Notification dated 14th September 2006.
4. The total project (Approved + Expansion) will be developed on the land measuring 9267.30 m² or 2.29 Acres situated over Plot No.- 268 (P) & Khata No.- 2, corresponding Proceedings of the SEAC meeting held on 19th October, 2019

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to Consolidation Khata Nos.-17/1, 17/2, 17/3 and 17/6, Plot Nos. - 581/1446 (P), 581/1447 (P), 581/1448 (P), 581/1451(P). The coordinates of the project site are Latitude- 19°47'24.65"N and Longitude-85°47'3.20"E.

5. Connectivity - The nearest airport is Biju Pattnaik Airport, which is 50.40 km away from the project site and Puri railway station is 6.13 km away from the project site. Nearest Town is Puri Town – 3.26 Km and District Headquarters is Puri at – 5.6 Km from the project site.
6. Presently, the Proponent has permission for construction of 18596.33 m² area at Mouza Sipasurubuli, Puri vide PKDA letter no. 231 dated 29.03.2016 & are planning to increase built-up area to 3,53,699.98 sft or 32,859.52 sqm (including services area, stilt and basement areas) and FAR Area is 25461.56 m² (excluding services area, stilt and basement areas) as per PKDA letter no. 63 dated 07.02.2019.
7. The total plot area is 9267.3 sqm or 2.29 Acres. The total built-up area = 32,859.52 sqm (Including Basement & Stilt). Maximum height of building= 23.9 mt. Total no. of Dwelling Units= 470 Dwelling Units + 60 (Guest room) = 530 Units.
8. The total water requirement of project will be 248 KLD which includes the fresh water requirement of 169 KLD on daily basis and treated recycled water of 79 KLD reused for flushing. Daily basis water requirement 169 KLD which will be met through Supply water/Bore well.
9. Power Requirement: Maximum demand load is 2500 KVA and Connected load is 3980 KW Source of power supply is CESU & Solar lighting. Power Back Up is by DG sets of 1500 KVA (2 Nos. of 250 KVA & 2 Nos. of 500 KVA) silent DG Set.
10. The waste water in operation phase will be generated is 215 KLD & treated in a STP having capacity of 240 KLD . Treated waste water recovered is 194 KLD which will be reutilized in horticulture (9 KLD), general washing(10 KLD) and Flushing(79 KLD) etc. 96 KLD excess treated water in Dry season and 115 KLD in rainy season will be discharged to Public Sewer.
11. The solid waste generated from project will be mainly domestic in nature and the quantity of the waste will be 0.91 Ton/day. Solid wastes generated will be segregated into biodegradable (waste vegetables and foods etc.) and recyclable (papers, cartons, thermo-cool, plastics, glass etc.) components and collected in separate bins. The biodegradable organic wastes (303.8 Kg/day) will be treated inside the premises. Recyclable and non-recyclable wastes (607.7 kg/day) will be disposed through Govt. approved agency as per Municipal Solid Wastes (Management and Handling) Rules, 2016 .
12. Total 6009.04 m² area will be provided for parking.
13. The green area will be developed approx. 20.11 % of the plot area (1863.39 m²).
14. Rain water Harvesting: Total Rain water harvested collected at project site will be 8671.46 m³ annually, taking average rainfall per hour is 40 cum. 7 Nos. Rain Water Harvesting structures are being proposed for artificial rain water recharge within the project premises.
15. The total cost of project is ` 54 Crores.
16. The proponent along with the consultant **M/s Visiontek Consultancy Services Pvt. Ltd., Patia, Bhubaneswar, Odisha** made a detailed presentation before the SEAC.

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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 visit to the site by Sub-Committee of the SEAC.

- (i) Clearance certificate from CRZ authority that the project doesn't fall in the CRZ area.
- (ii) Letter from the Collector, Puri that the project area doesn't fall under the sweet water zone.
- (iii) Details of Solar energy to be used in the project with necessary calculation.
- (iv) Possibility of usage of wind energy other than solar energy for the project.
- (v) Location of the DG set needs to be changed and accordingly revised layout map to be submitted.
- (vi) ECS needs to be recalculated and submitted.
- (vii) Copy of PKDA approval letter for phase-I project (18596.33 m²) issued vide letter no. 231 dated 29.03.2016 along with copy of application submitted to PKDA for approval of the phase-I project.
- (viii) Copy of PKDA approval letter for expansion project along with copy of application submitted to PKDA for approval of the expansion project
- (ix) Detail Water Balance diagram with calculation and Waste Water Management details to be submitted.
- (x) Status of permission for drawal of ground water from Water Resources Department, Govt. of Odisha and NoC from CGWA.
- (xi) Detailed justification that the expansion project will not be treated as a violation case.
- (xii) Undertaking that the natural sand dune shall not be disturbed due to project activity.
- (xiii) Land schedule and kism of land.
- (xiv) Present status of construction undertaken and the period of construction with details of approval obtained for the same from PKDA.

ITEM NO. 4

PROPOSAL FOR ENVIRONMENTAL CLEARANCE FOR EXPANSION OF GONUA IRON & MANGANESE MINES FOR ENHANCEMENT OF PRODUCTION OF IRON ORE FROM 0.36 MTPA TO 1.2 MTPA WITH CRUSHING AND SCREENING PLANT EXTENT OVER AN AREA OF 86.886 HA OF SRI PAWAN KUMAR AHLUWALIA, LOCATED AT VILLAGE - GONUA & PATABEDA, DIST-SUNDARGARH, ODISHA OF SRI PAWAN KUMAR AHLUWALIA REGARDING UNDER VIOLATION CASE TOR GRANTED (EC)

1. This is an expansion proposal of Gonua Iron & Manganese Mine of M/s Pawan Kumar Ahluwalia. The said Gonua Iron & Manganese Mine of M/s Pawan Kumar Ahluwalia extent over an area of 86.886 Ha, Village Gonua&Patabeda, District Sundargarh, Odisha applied for expansion of Iron ore production from 0.36 MTPA to 1.2 MTPA with Crushing & Screening plant.
2. The said mining lease is situated on the Southern and South-western flank of Satkutania Pahar in village Gonua and Patabeda, Tehsil – Koira in Sundargarh District of Odisha State. The area can be located in New Toposheet No. F45N5. It is bounded by the

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Latitude 21° 55' 00.52356" to 21° 55' 46.03440" N and Longitude 85° 22' 04.13616" to 85° 22' 36.35616" E.

3. As per Section 8A (6) of the MMDRA Act 2015, the lease is valid up to 31st March 2020. In this regard supplementary lease deed was executed on dated 21st March 2018.
4. EIA/EMP report was prepared on the basis of the TOR issued by MoEF&CC, Govt. of India vide letter No. J- 11015/211/2010-IA.II (M), dated 19th August 2010. Public hearing for this project was held on 04th April 2012. Final EIA/EMP with public hearing proceeding was submitted at MoEF&CC, Govt. of India on dated 9th June 2012. The project was recommended for Environmental Clearance by the Expert Appraisal Committee in its meeting held during 21st – 23rd November 2012.
5. However, as it's a violation case mentioned in the minutes of meeting, MoEF&CC, Govt. of India vide its letter dated 18th June 2013 and subsequent letter dated 17th October 2013 asked the project proponent to submit "(i) written commitment in the form of a formal resolution is submitted to MoEF&CC, Govt. of India to ensure that violations of the Environment (Protection) Act will not be repeated and (ii) the State Government has initiated credible action on the violation and evidence provided to MoEF&CC, Govt. of India of the action taken". The detail written commitment by the lessee and credible action by State Govt. was submitted at MoEF&CC, Govt. of India on dated 31st July 2013 and subsequent letter on dated 12th November 2013.
6. In the meantime, in pursuance of the Supreme Court order dated 02.08.2017 in CWP no. 114/2014, DDM, Koira has raised the demand notice for payment of `21,49,33,689/- and the Proponent has made the total payment as directed in two phases. Two payments one of ` 21,00,000,00/- and the other of ` 49,33,689/- made on 27.12.2017.
7. Subsequently, in view of the Gazette Notification of MoEF&CC, Govt. of India dated 14.03.2017 which requires that the proposal (which is in violation category) to be submitted before the MoEF&CC, Govt. of India within 6 months of the said notification. Further as per MoEF&CC, Govt. of India Office Memorandum dated 16th March 2018, the time for the application for such violation cases has been extended to another 30 days from the date of this notification. Accordingly on dtd.11.04.2018, the proponent submitted required documents at online portal of MoEF&CC, Govt. of India as violation case and requested for grant of environmental clearance at the earliest.
8. The project proponent submitted the Affidavit in compliance with the MoEF&CC, Govt. of India OM no. 3-50/2017-IA-III (Pt.) dated 30th May 2018.
9. The proposal has been appraised at SEIAA and Terms of Reference (ToR) for preparation of Environment Impact Assessment (EIA) Report has been issued with exemption of Public Hearing on dtd. 14th December 2018.
10. As per the ToR, the Baseline data collected for the Period Summer 2019 i.e. March, April and May 2019.
11. The project proponent along with the consultant **M/s ERS(I) 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:

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1. Consent letter from private land owners in the mining lease area.
2. Slope study in the mining area needs to be done from government institute of repute.
3. Blast study w.r.t biodiversity around it and maintenance of bioactivity register.
4. Major steps to be taken to not disturb the perennial nala near to the mining lease area.
5. Status of permission from State Water Resource Deptt. for usage of ground water and NoC from CGWA.
6. Followings are not detailed and/or incorporated in the EIA/EMP report. Revised EIA/EMP to be submitted incorporating the same.
 - a) Assessment of ecological damage with respect to air, water, land and other environmental attributes. The collection and analysis of data shall be done by an environmental laboratory duly notified under the Environment (Protection) Act, 1986, or an environmental laboratory accredited by NABL, or a laboratory of a Council of Scientific and Industrial Research (CSIR) institution working in the field of environment.
 - b) Preparation of EMP comprising remediation plan and natural and community resource augmentation plan corresponding to the ecological damage assessed and economic benefits derived due to violation.
 - c) The remediation plan and the natural and community resource augmentation plan to be prepared as an independent chapter in the EIA report by the accredited consultants.
 - d) Compliance to additional specific conditions as recommended by CSIR-NEERI on carrying capacity study as per Annexure – II of ToRs issued vide letter no. 1074, dated 14.12.2018.

ITEM NO. 5

PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF ENHANCEMENT IN PRODUCTION OF GRAPHITE ORE FROM 1047 TPA TO 15162 TPA PRODUCTION OF 4466 TPA SUB-GRADE ORE AND INSTALLATION OF BENEFICATION PLANT OF 20000 TPA CAPACITY OVER AN AEA OF 26.228 HA AT VILLAGE-MENKAMUNDA, TEHSIL- PAIKAMAL, DISTRICT- BARGARH OF M/S. MENKAMUNDA GRAPHITE ORE MINES - REGARDING SUBMISSION UNDER VIOLATION CASE (TOR)

1. The proposal is for Terms of Reference for enhancement in production of graphite ore from 1047 TPA to 15162 TPA production of 4466 TPA sub-grade ore and installation of beneficiation plant of 20000 TPA capacity over an area of 26.228 ha at Village-Menkamunda, Tehsil- Paikamal, District- Bargarh of M/s. Menkamunda Graphite ore Mines.
2. The ML area is located in village Menkamunda, Tehsil – Paikamal, Dist. Baragarh, Odisha and situated in Toposheet no. 64 L/4 with Latitude 20° 44' 17" to 20° 44' 29" N and Longitude 82° 44' 00" to 82° 44' 20" E, The nearest town is Paikamal and nearest railway station is Nuapada.
3. The project obtained approved ToR from SEAC, Odisha vide letter no. 126/SEAC-12 dated 06.12.2012 and the EIA study was conducted based on the approved ToR.
4. Baseline study for the project was carried out during March to May 2013.

5. The public hearing of the said project has been conducted on 21.12.2014 and the final EIA along with public hearing proceeding was submitted for Environmental Clearance to SEIAA, Odisha.
6. The project was considered for EC on 22.06.2015 at SEAC, Odisha and during the meeting the case of violation was pointed out.
7. As per the State Expert Appraisal Committee, Odisha as the mining activity of Menkamunda graphite mining is being continued after EIA, Notification, 2006 without obtaining prior environmental clearance from SEIAA, it is a case of violation to Environmental (Protection) Act, 1986.
8. As per SEIAA letter no. 848/SEIAA dated 29.02.2016, in compliance to O.M. No. J-11-13/41/2006-IA.II(I) dated 12.12.2012 and 27.06.2013, directions are issued under section 5 of the Environment (protection) act, 1986.
9. Further SEIAA letter no. 2819/SEIAA dated 15.04.2017, SEIAA instructed for online application under violation case as per MoEF&CC notification 14th March 2017.
10. Further the application for EC under violation case was submitted to EAC, New Delhi as per MoEF & CC, OM dated 14.03.2017 and with reference to MoEF & CC, OM dated 15.03.2018 the project has been transferred to SEIAA, Odisha for further appraisal.
11. Total Geological and mineable reserve in the ML area is 233375 T & 221706 T respectively. The life of mine is 11 years. The proposed rate of production is upto maximum of 15,162 TPA and the life of mine with present rate of production will be 16 years. The grade of graphite from the lease area varies from 5 -8% F.C. During the plan period 10784 Cu.m of top soil and 102160 Cu.m of waste will be generated. The top soil generated will be utilized for plantation and waste generated will be dumped separately and used for backfilling, road construction work. Nature of waste is mostly Khondalite.
12. The water requirement for the project will be 5500 liters per day. The mine will create employment opportunity for 40 personnel.
13. During the proposed plan period the mining activity will continue by semi mechanized method with occasional drilling and blasting where hard rock area found. The height of the bench is 4m, width of the bench is 5m and angle of the slope is 60°. The slope of the quarry is 37½ ° from horizontal. The waste rock stacked separately on the barren ground. Occasional drilling and blasting will be required to loosen the rock.
14. The primary base line data i.e Ambient air quality, Noise quality, Surface and ground water quality and soil quality has been monitored and analysed by Min Mec R&D Laboratory, New Delhi for the period of March to May 2013.
15. The public hearing for the project was conducted on 21.12.2014.
16. The total cost of project is 2.00 crores, and environmental control measures cost is Rs.11.49 lacs. The total recurring costs per annum, excluding man power cost, works out to be Rs 6.13 lacs.
17. The project proponent along with the consultant **M/s Kalyani Laboratories Pvt. Ltd., Plot No.: 78/944, Pahala, Bhubaneswar -752101** made a detailed presentation on the proposal.

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The SEAC after detailed presentation by the project proponent along with consultant noted that the proponent has continued mining activity in Menkamunda graphite ore mines without obtaining Environmental Clearance under EIA Notification, 2006. The SEAC, after detailed deliberations on the proposal in terms of the provisions of the MoEF&CC, Govt. of India Notification dated 14th March, 2017, confirmed the case to be of violation of the EIA Notification, 2006 and decided to take decision on issue of specific Terms of References after a visit to the site by the Sub-Committee of SEAC.

ITEM NO. 6

PROPOSAL FOR EXTENSION OF ENVIRONMENTAL CLEARANCE OF KATASAH I & KOLHARUDUKELA MANGANESE ORE MINES FOR ENHANCEMENT OF PRODUCTION CAPACITY OF MANAGANESE ORE FROM 3000 TPA TO 18,000 TPA OVER AN AREA OF 9.7004 HA. AT: KATASAH I AND KOLHARUDUKELA, DIST – KEONJHAR, ODISHA OF SRI. NARAYAN PAUL - REGARDING SUBMISSION UNDER VIOLATION CASE (TOR)

1. The proposal is for Terms of Reference of Katasahi & Kolharudukela Manganese Ore Mines for enhancement of production capacity of Managanese ore from 3000 TPA to 18,000 TPA over an area of 9.7004 ha. At- Katasahi and Kolharudukela, Dist – Keonjhar, Odisha.
2. The ML area is located in villages - Katasahi and Kolharudukela, Tahasil- Barbil, Dist – Keonjhar, Odisha and situated in Toposheet no. 73 G/5 with Latitude 21° 58' 09" to 21° 58' 2.663" N and Longitude 85° 19' 40".586 to 85° 19' 49.445" E. The nearest town is Barbil at 19 km and Koira is 20 km away. The nearest railway sliding is Barbil at 20km away. The nearest river is Suna River at 1.5 kms.
3. Mining Lease was executed on 09.10.1985 for Manganese ore for a period of 20 years. However as per Section 8A (3) of the MMDRA Act 2015, the lease is deemed to be granted for 50 years i.e. valid up to 8.10.2035.
4. EIA/EMP report was prepared on the basis of the TOR issued by MOEF on 3rd August 2010 and baseline data collected during March 2010-May 2010. Public hearing for this project was held on 11th April 2011.
5. Stage-I forest clearance for this project was obtained vide letter no.5-ORB214/2014-BHU, dated 1st December 2015, which was submitted to SEIAA for issue of environmental clearance vide our letter dated 27.01.2016.
6. One more baseline data during the period of March – May, 2014 has been collected and the SEAC had gone through the presentation with baseline data and recommended the project for grant of EC in its meeting held on 02nd May 2016.
7. In the due course of time, SEIAA was in process of getting information from Director of Mines w.r.t violation.
8. In this regard State Govt. has treated this of mining projects as violation of EC, "even though it has ever crossed the already achieved highest production prior to 1994 i.e. 4220.997 Ton in the year 1992-93" and case has been filed on the name of proposed mine by Sub-divisional Magistrate (S.D.M), Champua, Keonjhar in the court of J.M.F.C., Barbil vide No. 2(C) C.C.No. 106/2013 dated 30.07.2013 which is sub-judice at the said Court. It is anticipated that the case will be disposed accordingly. The same was intimated to SEIAA, Odisha vide letter dated 24.04.2017.

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9. As per the MoEF circular No. J-20012/11/98-IA.II (M), dated 28th October 2004 point no. III (c) regarding expansion in production it has mentioned that "If the annual production of any year from 1994-95 onwards exceeds the annual production of 1993-1994 or its preceding years (even if approved by IBM), it would constitute expansion." Prior to 1994, in the year 1992-93 they have achieved highest production 4220.997 Metric Ton. So after 1994 we have not crossed the earlier production. Later on, State Govt. has not treated this project as EC violation and not raised any demand on excess EC production in view of Hon'ble Supreme Court order dated 2nd August 2017 on WP(C) No. 114 of 2014.
10. In the meantime, SEIAA vide its letter No. 2961/SEIAA dated 06.05.2017 asked the lessee to file online application at the website of MoEF&CC at the earliest referring the latest Gazette Notification by MoEF&CC, Govt. of India dated 14.03.2017
11. As per the above notification we have applied in MoEF&CC portal under violation category vide our letter dated 06.06.2017.
12. Further, as per the MoEF&CC Office Memorandum dated 16th March 2018 it is suggested that "B" category project will be considered at respective SEIAA. So they have re-applied to SEIAA accordingly.
13. The Mine was in operation till 2009-10. After that it was not in operation due to lack of environmental clearance & according to EC violation under E (P) Act 1986.
14. The project proponent along with the consultant **M/s Creative & Consultants, Chennai - 600059** made a detailed presentation on the proposal.


The SEAC after detailed presentation by the project proponent along with consultant noted that the proponent has gone for excess production of Manganese Ore without prior Environmental Clearance under EIA Notification, 2006. They have also not obtained Environmental Clearance after 14th September, 2006 when the renewal of mining lease was due. The SEAC, after detailed deliberations on the proposal in terms of the provisions of the MoEF&CC, Govt. of India Notification dated 14th March, 2017, confirmed the case to be of violation of the EIA Notification, 2006 and **recommended for issuing Standard Term of Reference as per Annexure- III along with the following specific Term of Reference and additional specific conditions as recommended by CSIR-NEERI on carrying capacity study as per Annexure - IV** for undertaking EIA and preparation of Environmental Management Plan (EMP).


- (i) The State Government to take action against the project proponent under the provisions of section 19 of the Environment (Protection) Act, 1986, and further no Consent to Operate to be issued till the project is granted Environmental Clearance.
- (ii) The project proponent shall be required to submit a bank guarantee equivalent to the amount of remediation plan and natural and community resource augmentation plan with the SPCB prior to the grant of Environmental Clearance. The quantum shall be recommended by the SEAC and finalized by the regulatory authority i.e. SEIAA, Odisha. The bank guarantee shall be released after successful implementation of the EMP, followed by recommendations of the SEAC and approval of the regulatory authority i.e. SEIAA, Odisha.
- (iii) Assessment of ecological damage with respect to air, water, land and other environmental attributes. The collection and analysis of data shall be done by an environmental laboratory duly notified under the Environment (Protection) Act, 1986, or an environmental laboratory accredited by NABL, or a laboratory of a Council of Scientific and Industrial Research (CSIR) institution working in the field of environment.


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Secretary, SEAC

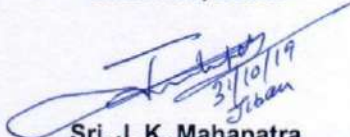
- (iv) Preparation of EMP comprising remediation plan and natural and community resource augmentation plan corresponding to the ecological damage assessed and economic benefits derived due to violation.
- (v) The remediation plan and the natural and community resource augmentation plan to be prepared as an independent chapter in the EIA report by the accredited consultants.
- (vi) Public hearing has already been conducted for the proposal earlier on 11.04.2011, a copy of which is also furnished with EIA/EMP. For this reason, conducting a fresh Public Hearing has been exempted.
- (vii) One season fresh base line data to be generated for EIA/EMP preparation.
- (viii) To submit the lease sketch approved by DMG, at the time of presentation before SEAC.
- (ix) Fund allocation for Corporate Environment Responsibility (CER) shall be made as per Ministry's O.M. No. 22-65/2017-IA.III dated 1st May, 2018 for various activities therein. The details of fund allocation and activities for CER shall be incorporated in EIA/EMP report.
- (x) Detailed hydrological study to be carried out in core and buffer zone of the project as per the recent GEC guidelines 2015.
- (xi) Approved mining plan is to be submitted.
- (xii) Recent compliance report from the regional office of MoEF&CC, Govt. of India, Bhubaneswar for the existing Environmental Clearance, if any.


Sri. B. P. Singh
Chairman, SEAC

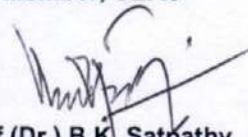

Dr. D. Swain
Member, SEAC


Prof. (Dr.) P.K. Mohanty
Member, SEAC


Sri. K. R. Acharya
Member, SEAC



Sri. J. K. Mahapatra
Member, SEAC
31/10/19
Jibran


Dr. K.C.S Panigrahi
Member, SEAC


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

Prof. (Dr.) H.B. Sahu
Member, SEAC

Approved


Chairman, SEAC

CONDITIONS TO BE STIPULATED IN ENVIRONMENTAL CLEARANCE FOR CONSTRUCTION OF (G+6) MULTI UTILITY COMPLEX & P.G STUDENTS HOSTEL AT SARDAR VALLAV BHAI PATEL POST GRADUATE INSTITUTE OF PEDIATRIC (SVPPGIP) OVER PLOT AREA OF 32,366.35 SQM (7.995 ACRES) AND BUILT-UP AREA OF 28,885.00 SQM” AT SARDAR VALLAV BHAI PATEL POST GRADUATE INSTITUTE OF PEDIATRIC (SVPPGIP) SISHUBHAWAN, CUTTACK (EC).

I. SPECIFIC CONDITIONS:

A. CONSTRUCTION PHASE:

1. Construction site should be adequately barricaded before the construction begins.
2. Installation of dual pipe plumbing for supplying fresh water for drinking, cooking and bathing etc. and other for supply of recycled water for flushing, landscape irrigation, car washing, thermal cooling, conditioning etc. shall be done.
3. Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred.
4. Any hazardous waste generated during construction phase, should be disposed off as per applicable rules and norms with necessary approvals of the State Pollution Control Board.
5. No ground water shall be extracted for the project work at any stage during the construction phase. If ground water will be used during construction phase, they shall obtain permission from the Water Resource Department, Govt. of Odisha.
6. Considering the peak water consumption of the occupants, the design of the water supply system and the sewage disposal system of the project should be based on the provisions of water consumption.
7. Provision shall be made for the housing of construction labourers within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
8. A First-Aid room will be provided in the project site both during construction and operation of the project.
9. All the top soil excavated during construction activities should be stored separately for use in land filling, horticulture/landscape development within the project site.
10. Disposal of muck during construction phase should not create any adverse effect on the neighboring communities and will be disposed off taking the necessary precautions for general safety and health aspects of people only in approved sites with the approval of competent authority.
11. Construction spoils, including bituminous material and other hazardous materials should not be allowed to contaminate watercourses, ground water and dump sites by following safe dumping / disposal practice as per statutory rules and norms with necessary approval of the Odisha State Pollution Control Board.

12. The fuel for diesel generator sets to be used during construction phase shall use low sulfur diesel fuel and should conform to Environment (Protection) Rules 1986 prescribed for air emission and noise standards.
13. The diesel required for operating DG sets shall be stored in underground tanks and, if required, clearance from the Chief Controller of Explosives shall be taken.
14. Vehicles used for bringing construction materials to the site should be in good condition and should have a pollution check certificate, covered and conform to statutory air and noise emission standards and should be operated only during non-peak hours of the day.
15. Ambient noise levels should conform to residential standards both during day and night. Incremental pollution loads on the ambient air and noise quality should be closely monitored during construction phase. Adequate measures should be taken to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB/OPCB.
16. Fly ash bricks should be used as building material in the construction as per the provisions of Fly Ash Notification of September, 1999 and as amended thereafter.
17. Ready mixed concrete would be used in building construction.
18. Storm water control and its re-use should be as per CGWB and BIS standards for these applications.
19. Fixtures for showers, toilet flushing and drinking water should be of low flow type and restricted to requirements by use of aerators, avoiding wastage pressure reducing devices or sensor based controls.
20. Use of glass may be maximum upto 40% of total outer wall area to reduce the energy consumption and load on air-conditioning. If necessary, high quality double glass with special reflective coating may be used in the windows.
21. Roof should meet the prescribed requirement as per Energy Conservation Building Code by using appropriate thermal insulation material.
22. Opaque wall should meet prescriptive requirements as per Energy Conservation Building Code.
23. The approval of the competent authority shall be obtained for structural safety of the buildings due to earthquake, adequacy of firefighting equipments etc. as per National Building Code of India, 2005 including protection measures from lightning etc.
24. Regular supervision of the above and other measures for monitoring should be in place all through the construction phase to avoid disturbances and pollution to the surroundings.

B. OPERATION PHASE:

1. Fresh water requirement shall not exceed 369 m³/day.
2. The quantity of fresh water usage, water recycling and rainwater harvesting shall be measured and recorded to monitor the water balance as projected by the project proponent. The record shall be submitted to the SEIAA, Odisha and the Regional Office, MoEF&CC along with six monthly Monitoring reports.
3. Solid waste shall be collected, treated disposed in accordance with the Solid Waste (Management & Handling) Rules, 2016.

Secretary, SEAC

4. Solid waste shall be segregated into biodegradable, recyclable and inert category. Biodegradable waste shall be composted indigenously in Organic Waste Converter and the other waste categories shall be disposed suitably.
5. Bio-medical waste shall be collected, treated and disposed in accordance with Bio-medical Waste Management Rules, 2016.
6. No ground water shall be used during the operation phase. If ground water will be used during operation phase, they shall obtain permission from the Water Resources Department.
7. The proponent shall install an Effluent Treatment Plant (ETP) of capacity 70 KLD for treatment of effluent from different sources of hospital. The treated water from the ETP shall be neutralized for public health prior to other treatment processes.
8. Treatment of 100% grey water by decentralized treatment should be done. Treated waste water from STP of 500 KLD capacity shall be recycled / reused to the maximum extent possible. Discharge of unused treated waste water shall conform to the norms and standards of the Odisha State Pollution Control Board. Necessary measures should be taken to mitigate the odour problem from STP.
9. The STP sludge should not be dried nor incinerated within the project site and should be disposed off as per the norms of SPCB, Odisha.
10. The STP must treat all kinds of pollutants present in it and its capacity should take into account the entire load of sewage generated from the hospital.
11. The project proponent will ensure that under no circumstances, the environment is polluted due to non-functioning / under performance of sewerage disposal system of the project.
12. Diesel power generating sets proposed as source of back-up power for lifts elevators and common area illumination during operation phase should be of enclosed type and conform to Environment Protection (EP) rules 1986. The height of the stack of DG sets should be equal to the height needed for the combined capacity of all proposed DG sets put together and should be more than the highest building height. Low sulfur diesel should be used. The location of the DG sets may be decided in consultation with Odisha State Pollution Control Board. Care may be taken to avoid disposal of smoke /pollutants from DG sets in the residential area. Low sulfur diesel oil (LDO or HSD) is to be used in DG set.
13. Noise should be controlled to ensure that it does not exceed the prescribed standards. During night time, the noise levels measured at the boundary of the sites shall be restricted to the permissible levels to comply with the prevalent regulations.
14. Green-belt & avenue plantation of trees over the area of 35,559.4 m² (20 % of total plot area) shall be done using native tree species/shrubs improving greenery & keeping in view aesthetics considerations in the whole complex. Professional landscape architects should be engaged to design the green layout to provide for multi-tier plantation and green fencing all around, mitigating various environmental pollutants like dust, noise, emissions etc.
15. Weep holes in the compound walls shall be provided to ensure natural drainage of excessive rain water in the project area during the monsoon period after the harvesting operations. Care must be taken so that there is no water logging in the territory and drainage is 100%.
16. Traffic congestion near the entry and exit points from the roads adjoining the proposed project site must be avoided. Traffic congestion shall be avoided inside the project site. The

area ear- marked for parking shall not be used for any other purpose. Alternate entry and exit must be provided to handle excess traffic and emergency situations.

17. A report on the energy conservation measures confirming to energy conservation norms finalized by the Bureau of Energy Efficiency should be prepared incorporating details about building materials & technology, R& U Factors etc. and submitted to the SEIAA, Odisha in three months' time before operation/ habitation.
18. The proponent shall use atleast 5% of non-conventional energy (solar energy).
19. Central lighting and street lighting shall be based on solar power. Provisions of solar hot water storage / supplies at the roof top may be made as per statutory norms of CPCB/MoEF&CC/SPCB, Odisha.
20. Energy conservation measures like installation of LED for lighting the areas outside the building should be integral part of the project design and should be in place before project commissioning. Discarded bulbs should be properly collected and disposed off/sent for recycling as per the prevailing guidelines/ rules of the regulatory authority to avoid toxic contamination. Use of solar panels be adopted to the maximum extent possible, especially for street lights.

II. GENERAL CONDITIONS:

1. The project proponent shall comply with all the conditions stipulated in the building approval letter.
2. The applicant (Project proponent) will take necessary measures for prevention, control and mitigation of Air Pollution, Water Pollution, Noise Pollution and Land Pollution including solid waste management as mentioned by them in Form-1, Form-1A, and Environment Management Plan (EMP) in compliance with the prescribed statutory norms and standards.
3. The applicant will take statutory clearance / approval / permissions from the concerned authorities in respect of the project as and when required.
4. The applicant will submit half-yearly compliance report on post-environmental monitoring in respect of the stipulated terms and conditions in the Environmental Clearance to the State Environmental Impact Assessment Authority (SEIAA), Odisha, on 1st June and 1st December of each calendar year.
5. The project proponent shall comply to all the conditions stipulated by the Fire Prevention Officer, Odisha.
6. The applicant will adopt the prescribed norms, and standards provided in the National Building Code of India, 2005.
7. A copy of the environmental clearance letter shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional office. District Industries Centre and Collector's Office / Tehsildar's Office for 30 days.
8. The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to the SEIAA, Odisha.

Secretary, SEAC

9. Officials from the Regional Office of MoEF&CC, Bhubaneswar would be monitoring the implementation of environmental safeguards should be given full cooperation, facilities and documents/data by the project proponents during their inspection. A complete set of all entire document submitted to SEIAA, Odisha should be forwarded to the Regional Office of MOEF&CC, Bhubaneswar.
10. In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by the SEIAA, Odisha.
11. The SEIAA, Odisha reserves the right to add additional safeguard measures subsequently, if found necessary, and to take action including revoking of the environment clearance under the provisions of the Environmental (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time bound and satisfactory manner.
12. All other statutory clearances shall be obtained, as applicable by project proponents from the respective competent authorities.
13. These stipulations would be enforced among others under the provisions of Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification, 2006.
14. The project proponent should advertise in at least two local Newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded Environmental clearance and project has been accorded Environmental Clearance and copies of clearance letters are available with the state Pollution Control Board and may also be seen on the website of the SEIAA, Odisha. The advertisement should be made within Seven days from the date of receipt of the Clearance letter and a copy of the same should be forwarded to the Regional Office of MoEF&CC, Govt. of India at Bhubaneswar.
15. A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parisad/Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal, the clearance letter shall also be put on the website of the company the proponent.
16. The proponents shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Offices of MoEF&CC, Bhubaneswar the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; PM₁₀, PM_{2.5}, SO₂, NO_x (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.
17. Any appeal against this clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
18. The above mentioned stipulated conditions shall be complied in a time-bound manner. Failure to comply with any of the conditions mentioned above may result in cancellation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.

Secretary, SEAC

CONDITIONS TO BE STIPULATED IN ENVIRONMENTAL CLEARANCE FOR ESTABLISHMENT OF COMMON BIO-MEDICAL WASTE TREATMENT FACILITY (CBWTF) OF CAPACITY 7 TPD AT VILLAGE- ARAKHAPADA, TEHSIL-SERAGADA. DISTRICT- GANJAM, ODISHA OF M/S MEDIAID MARKETING SERVICES UNDER VIOLATION CASE (EC).

A. SPECIFIC CONDITION:

1. All the recommendations, mitigation measures, environmental protection measures and safeguards proposed in the EIA report of the project submitted by project proponent vide commitments made during presentation before SEAC and proposed in the EIA report shall be strictly adhered to in letter and spirit.
2. The unit shall strictly comply with the CPCB guidelines for setting up the Common Bio-Medical Waste Treatment Facility. (CBWTF)
3. Proponent shall strictly comply the design criteria for incinerator, autoclave, shredder and all other requirements including bar-coding etc. as per the CPCB guidelines.
4. The unit shall strictly setup the dry technology system.
5. The unit shall strictly ensure mercury waste management at health care facility as per the CPCB guidelines.
6. The unit shall establish Standard operating Procedure for waste collection, handing transportation, treatment and disposal as per Biomedical Waste Management Rules 2016.
7. Zero Liquid Discharge (ZLD) status shall be maintained all the time.
8. There shall be no drainage connections from the treatment shed.

B. CONSTRUCTION PHASE

9. Water demand during construction shall be reduced by use of curing agents, super plasticizers and other best construction practices.
10. Project proponent shall ensure that surrounding environment shall not be affected due to construction activity.
11. Construction materials shall be covered during transportation and regular water sprinkling shall be done in vulnerable areas for controlling fugitive emission.
12. All required sanitary and hygienic measures shall be provided before starting the construction activities and to be maintained throughout the construction phase.
13. First Aid Box shall be made readily available in adequate quantity at all times.
14. The Project proponent shall strictly comply with the building and other construction workers (Regulation of Employment) & conditions made there under and their subsequent amendments. Local bye laws of concern Authority shall be complied in letter and spirit.

15. Ambient noise levels shall conform to residential standard both during day and night. Incremental pollution load on the ambient air & noise quality shall closely be monitored during construction phase.
16. Use of Diesel Generator (DG) sets during construction phase shall be strictly equipped with acoustic enclosure and shall conform to the EPA rules for air and noise emission standards.
17. Safe disposal of sewage and solid wastes generated during the construction phase shall be ensured.
18. All top soil excavated during construction activity shall be used in horticultural/ landscape development within the project site.
19. Excavated earth to be generated during the construction phase shall be utilized within the premises to the maximum extent possible and balance quality of excavated earth shall be disposed off with the approval of the competent authority after taking the necessary precautions of general safety and health aspects. Disposal of the excavated earth during construction phase shall create adverse effect on neighboring communities.
20. PP shall ensure use of eco-friendly building materials including fly ash bricks, fly ash paver blocks, ready Mix concrete (RMC) and lead-free paints in the project.
21. Fly ash be used in the construction wherever applicable as per provisions of fly ash Notification under the EP Act, 1986 and its subsequent amendments from time to time, regular supervision of the above and other measures for monitoring should be in place all through the construction phase, so as to avoid disturbance to all surroundings.

C. OPERATION PHASE:

22. Consent to operate shall be obtained from OSPCB under the Air (Prevention & control of Pollution) Act, 1981 and Water (Prevention & control of Pollution) Act 1974 before operation, failing which the Environment Clearance herein shall be deemed to be withdrawn.
23. Authorization from State Pollution Control Board, Odisha shall be obtained as applicable under Bio Medical Waste Management Rules 2016 and its subsequent amendments from time to time.
24. The Biomedical wastes shall be managed in accordance and compliance with the Bio medical waste Management Rules 2016 and its subsequent amendments from time to time.
25. Incinerated ash, used oil, sludge, treated biomedical waste and ETP sludge should be disposed in accordance with BMW Rules, 2016/ Hazardous and other Waste (Management & Transboundary Movement) Rules 2016 and its subsequent amendments issued from, time to time.
26. The PP shall comply with the Environmental standards notified by MOEF & CC for incinerators along with the technology/guidelines.

Secretary, SEAC

27. Guidelines published the Central pollution Control board from time to time for common bio medical waste treatment published shall be referred for implementation.
28. There should not be any spillage from the transportation vehicles.
29. The PP will set up separate environmental management cell for effective implementation of stipulated environmental safeguards under the supervision of Senior Executive.
30. All the recommendations of EMP shall be strictly complied.
31. The environmental safeguards containing the EIA report shall be implemented in letter & spirit.
32. Necessary provision shall be made for firefighting facilities within the complex.
33. Treated flue gas emissions discharged through stack to atmosphere shall always be less than the specific emission standards.
34. PP shall ensure regular operation and maintenance of the ETP and printed logbook shall be maintained.
35. All the pipelines carrying water/waste water should be distinguished using colour coding on raw water pipes and re use lines of treated water.
36. Utilization of Diesel power generating sets is subject to power failure condition only. The DG sets proposed as a source of power back up during operation phase should be of enclosed type, low sulphur diesel run and confirm to rules made under the Environment (Protection) Act, 1986. The DG sets should be subjected to periodic noise and stack monitoring.
37. Noise should be controlled to ensure that it does not exceed the prescribed standards. During night time the noise levels measured at the boundary of the building shall be restricted to the permissible levels to comply with the prevalent regulations.
38. Energy conservation measures such as LED light for common lighting of areas, signage etc should be adopted.
39. The unit shall develop 33% of plot area (including existing green belt) as a green belt within premises as per the CPCB guidelines.
40. Total water requirements for the project shall not exceed 09 KL/day. Unit shall reuse treated waste water for lime slurry preparation for quenching process as well as floor and vehicle washing to the maximum extent. Hence, fresh water requirement shall not exceed 09 KL/day and it shall be met through PWD water supply only. Prior permission from the concerned authority shall be obtained for withdrawal of water.
41. Water meter shall be installed and its record of daily water consumptions shall be maintained.
42. The industrial effluent generation from the project shall not exceed 08 KL/day.
43. Waste water generation from floor washing, vehicle washing, domestic waste water and autoclaving (08 KL/day) shall be treated in proposed ETP. (Cap.10.0 KL/Day).
44. Entire quantity of treated waste water shall be reused for individual purpose within the premises after conforming the (OSPCB) norms.

Secretary, SEAC

45. The unit shall provide adequate effluent treatment plant (ETP) comprises of Primary, tertiary treatment plants and operated regularly and efficiently so as to ensure for quenching process.
46. Separate energy meter shall be provided at ETP. A proper operation logbook of the ETP containing records of quantities and qualities of treated effluent.
47. The Zero Liquid Discharge (ZLD) condition to be achieved with utilizing treated effluent for lime slurry preparation for spraying in reactor for quenching process as well as floor and vehicle washing.
48. The Project proponent shall provide electromagnetic flow meter at the inlet & outlet of the water supply, Inlet & Outlet of the ETP and shall maintain a record of readings of each such meter on daily basis.
49. The quantity of fresh water usage and water recycling shall be measured and recorded to monitor the water balance as projected by the project proponent. The record shall be submitted to the OSPCB, State Level Environment Impact Assessment Authority & Regional Office, MoEF& CC along with six monthly monitoring reports.

D. AIR:

50. Unit shall provide Lime Reactor, Air cooled gas cooler, Sodium Carbonate injection, Activated carbon injection system and Bag Filter with adequate stack height as APCM within incinerator as per the CPCB and relevant guidelines.
51. Regular monitoring of ground level concentration of PM₁₀, PM_{2.5}, NO_x and CO shall be carried out at the site and downwind direction and its records shall be maintained. Ambient air quality levels shall not exceed the standards stipulated by the CPCB. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be taken immediately.
52. Proponent shall strictly follow the odour control measures as suggested in Environmental Management Plan.
53. Proponent shall strictly follow the Environmental Monitoring Program (EMP) for ambient Air Quality Monitoring (AAQM).
54. Treated flue gas emissions discharged through stack to atmosphere shall always be less than CPCB/OSPCB stipulated emission standards.
55. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution and shall conform to the EPA Rules for air and noise emission standards.
56. A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive and transport dust emission.

E. WASTE MANAGEMENT:

57. The company shall strictly comply with the rule and regulations with regards to handling and disposal of Hazardous waste in accordance with the Hazardous and Other wastes (Management and Trans boundary Movement) Rules 2016, as may be amended from time to time. Authorization of the OSPCB shall be obtained for collection/treatment/storage/disposal of hazardous wastes.

58. Hazardous wastes shall be dried, packed and stored in separate designated hazardous waste storage facility with concrete flooring and leachate collection facility, before its disposal and handled as per the Hazardous Waste Rules 2016.
59. Incinerator Ash, ETP sludge & sludge shall be disposed in accordance with BMW Rules, 2016/ Hazardous and other Waste (Management & Transboundary Movement) Rules 2016 and its subsequent amendments issued from time to time.
60. Treated Biomedical plastic waste shall be sold out to OSPCB Authorized Recyclers only.
61. Used oil shall be either reused for lubrication in plant machineries or sold out to OSPCB registered/ Authorized Recyclers.
62. Discarded container/bags shall be either reused or sold only to OSPCB Authorized Recyclers.
63. Treated glass waste shall be sold out to OSPCB Authorized Recyclers only.
64. Sharp waste shall be disposed through in-house designated concrete sharp pit or as per the BMW Rules, 2016 and its amendments issued from time to time.
65. Trucks/Tankers used for transportation of hazardous waste shall be in accordance with the provisions under the Motor Vehicle Act, 2019 and rules made there under.
66. The design of the Trucks/tankers shall be such that there is no spillage during transportation.
67. All possible efforts shall be made for Co-Processing of the Hazardous waste prior to disposal into TSDF/CHWTF.
68. Management of fly ash (If any) shall be as per the Fly ash Notification 2009 & its amendment time to time and it shall be ensured that there is 100% utilization of fly ash to be generated from the unit.

F. SAFETY:

69. The occupier/Plant Manger shall strictly comply with the provisions under the Factories Act and other relevant State laws.
70. The project authorities shall strictly comply with the provisions made in Manufacture, Storage and Import of Hazardous Chemicals Rules (MSIHC) 1989, as amended time to time and the Public Liability Insurance Act for handling of hazardous chemicals etc. Necessary approvals from the Chief Controller of Explosives and concerned Govt. Authorities shall be obtained before commissioning of the project. Requisite On-site and Off-site Disaster Management Plans have to be prepared and implemented.
71. Sufficient peripheral open passage shall be kept in the margin area for free movement of fire tender/emergency vehicle around the premises.
72. Sufficient number of fire extinguishers shall be provided near the plant and storage area.
73. All necessary precautionary measures shall be taken to avoid any kind of accident during loading, unloading and transportation of biomedical waste.
74. The project management shall ensure to comply with all the environment protection

measures, risk mitigation measures and safeguards mentioned in the Risk Assessment report.

75. Only flame proof electrical fittings shall be provided in the plant premises.
76. All the waste storage room shall be marked with colour coding as per the CPCB guidelines time to time.
77. Proponent shall tie up with nearby health care facility for any emergency cases.
78. Personal Protective equipment's (PPEs) shall be provided to workers and its usage shall be ensured and supervised.
79. First Aid Box in the unit shall be made readily available in adequate quantity.
80. Training shall be imparted to all the workers on safety and health aspects of biomedical waste handling.
81. Occupational health surveillance of the workers shall be done and its records shall be maintained. Pre-employment and periodical medical examination for all the workers shall be undertaken as per the Factories Act & Rules.
82. Transportation of biomedical waste shall be done as per the provisions of the Motor Vehicle Act & Rules.
83. The company shall implement all preventive and mitigation measures suggested in the Risk Assessment Report.

G. NOISE:

84. The Overall noise level in and around the plant area shall be kept well within the standards by providing noise control measures including engineering controls like acoustic insulation hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise level shall conform to the standards prescribed under The Environment (Protection) Act, 1986 & Rules.

H. GREEN BELT AND OTHER PLANTATION:

85. The Unit shall develop green belt within premises as per the CPCB guidelines.
86. Drip irrigation/low-angle sprinkler system shall be used for the green belt development within the premises.
87. The area earmarked as green area shall be used only for plantation and shall not be altered for any other purpose.

I. OTHER CONDITIONS

88. Rain water recharging of surface as well as rooftop runoff shall be undertaken and the same water shall be used for the various activities of the project to conserve fresh water as well as to recharge ground water. Before recharging the surface runoff, pre-treatment must be done to remove suspended matter.
89. All the commitments and undertakings given to the SEAC during the appraisal process for the purpose of Environmental Protection and Management shall be strictly adhered to.
90. The project proponent shall also comply with any additional condition that may be

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imposed by the SEAC or the SEIAA or any other competent authority for the purpose for the environmental protection and management.

91. In the event of failure of any pollution control system adopted by the unit, the unit shall be safely closed and shall not be restarted until the desired efficiency of the control equipment has been achieved.
92. The project authorities must strictly adhere to the stipulations made by the Odisha State Pollution Control Board (OSPCB), State Government and any Statutory Authority.
93. During biomedical waste unloading there shall be no spillages and garland drain shall be constructed to avoid mixing of accidental spillages with domestic wastewater or storm water.
94. Industrial Grade flooring with impervious layer shall be provided in the work areas, biomedical waste storage areas and chemical handling areas to minimize soil contamination.
95. Renewable power/ solar/wind / hybrid shall be installed within the premises and on the roof area of the administrative part of the building (around 5%).
96. No further expansion or modifications in the plant likely to cause environmental impacts shall be carried out without obtaining prior environmental Clearance from the concerned Authority.
97. The above conditions will be enforced, inter-alia under the provisions of water (Prevention & Control of Pollution) Act 1974, air (Prevention & Control of Pollution) Act 1981, the Environment Protection Act 1986, Hazardous & other Wastes (Management & Transboundary Movement Rules, 2016 and the Public Liability Insurance Act 1991 along with their amendments and rule.
98. The Project management shall ensure that the unit complies with all the environmental protection measures, risk mitigation measures and safeguards recommended in the EMP report and Risk assessment study report as well as proposed by project Proponent.
99. Further this EC is issued without prejudice to the action initiated in the Environment (*Protection*) Act or any court case pending in the court of law. As such, it does not mean that the PP has not violated any environmental laws in the past and whatever decision under the said Act by the Hon'ble Court will be binding on the PP. **Hence, this environmental clearance does not give immunity to the PP in the case complaint is filed against, if any, or action initiated under the said Act.**
100. In case of submission of false document and non-compliance to any of the stipulated conditions, this Authority will revoke or suspend the EC without any intimation and initiate appropriate legal action under the Environment (*Protection*) Act, 1986 (*as amended till date*).
101. E-waste generated in the complex should be managed as per CPCB guidelines on E-waste management Rules 2016.
102. The SEIAA, Odisha reserves their right to add any stringent condition or to revoke the environmental clearance, if conditions stipulated above are not implemented to the

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satisfaction of the Authority or for that matter, for any other administrative reasons.

103. **In addition**, the following conditions shall be specifically complied with:

- (i) Project proponent shall advertise at least in two local newspapers widely circulated in the region around the project, one of which shall be in the Odia language within **seven days** of receipt of this communication, informing that the proposed project has been accorded prior Environmental Clearance (EC) and the copies of the clearance letter will be available on the PP website.
- (ii) Validity of the Environmental Clearance (EC) accorded shall be for a period of 07 (seven) years from the date of its issue.
- (iii) These stipulations would be enforced among others under the provisions of Water (*Prevention and Control of Pollution*) Act, 1974, the Air (*Prevention and Control of Pollution*) Act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification, 2006.
- (iv) In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by State Environment Impact Assessment Authority.
- (v) Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website.
- (vi) Any appeal against this prior environmental clearance shall lie with the National Green Tribunal (NGT), if preferred, within 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010 (*Central Act 19 of 2010*).

TERMS OF REFERENCE (ToR) FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY AND INFORMATION TO BE INCLUDED IN EIA/EMP REPORT OF M/S. KATASAH I & KOLHARUDUKELA MANGANESE ORE MINES OF SRI. SATYA NARAYAN PAUL FOR ENHANCEMENT OF PRODUCTION CAPACITY OF MANAGANESE ORE FROM 3000 TPA TO 18,000 TPA OVER AN AREA OF 9.7004 HA. AT- KATASAH I AND KOLHARUDUKELA, DIST – KEONJHAR, ODISHA- REGARDING SUBMISSION UNDER VIOLATION CASE (TOR)

1. The Environmental Clearance will not be operational till such time the Project Proponent complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated the 2nd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors..
2. Department of Mining & Geology, State Government shall ensure that mining operation shall not commence till the entire compensation levied, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of judgment of Hon'ble Supreme Court dated the 2nd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors.
3. 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.
4. A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.
5. All documents including approved mine plan and EIA 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.
6. All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/toposheet, 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).
7. Information should be provided in Survey of India Toposheet 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.
8. 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.
9. 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 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.
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.
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,

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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 alongwith 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, 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 (ease 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

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receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.

25. 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.
26. Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
27. 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,
28. 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.
29. 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.
30. Details of any stream, seasonal or otherwise, passing through the tease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be.
31. 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.
32. 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.
33. 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.
34. Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.

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35. 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.
36. 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.
37. 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.
38. 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.
39. 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.
40. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
41. The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
42. A Disaster management Plan shall be prepared and included in the EIA/EMP Report.
43. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
44. The activities and budget earmarked for Corporate Environmental Responsibility (CER) shall be as per MoEF&CC, Govt. of India O.M No 22-65/2017-IA. II (M) dated 01.05.2018 and the action plan on the activities proposed under CER shall be submitted at the time of appraisal of the project included in the EIA/EMP Report.
45. The Action Plan on the compliance of the recommendations of the CAG as per MoEF&CC, Govt. of India Circular No. J-11013/71/2016-IA.I (M), dated 25,10.2017 needs to be submitted at the time of appraisal of the project and included in the EIA/EMP Report.
46. Compliance of the MoEF&CC, Govt. of India Office Memorandum No. F: 3-50/2017-IA.III (Pt.), dated 30.05.2018 on the judgement of Hon'ble Supreme Court, dated the 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India needs to be submitted and included in the EIA/EMP Report.
47. **The prescribed TOR would be valid for a period of three years for submission of the EIA/EMP report, as per the O.M. No. J-11013/41/2006-IA.II (I) (Part) dated 29.08.2017.**

RECOMMENDATION OF CSIR-NEERI REPORT ON "CARRYING CAPACITY STUDY FOR ENVIRONMENTALLY SUSTAINABLE IRON AND MANGANESE ORE MINING ACTIVITY IN KEONJHAR, SUNDARGARH AND MAYURBHANJ DISTRICTS OF ODISHA STATE"

1. Department of Steel & Mines, Govt, of Odisha should prepare 5 years regional plan for annual iron ore requirement from the state, which in turn shall be met from different mines/zones (e.g. Joda, Koira.) in the state. Accordingly, sustainable annual production (SAP) for each zone/mine may be followed adopting necessary environmental protection measures.
2. The expansion or opening of new manganese ore mines may be considered only when the actual production of about 80% is achieved. Further, the mines that have not produced Mn ore for last two years and have no commitment in the current year as well: EC capacity in such cases may be reviewed. The Department of Steel & Mines, Govt, of Odisha shall submit the Annual Report on this issue to the MoEF&CC for further necessary action.
3. Analysis of baseline environmental quality data for the year 2014 and 2016 indicates that existing mining activities appear to have little / no potential impact on environmental quality, except on air environment, which was mainly due to re-suspension of road dust. Therefore, all the working mines can continue to operate with strict compliance to monitoring of environmental quality parameters as per EC and CTE/CTO conditions of the respective mine, and implementation of suggested measures for control of road dust and air pollution. Odisha State Pollution Control Board has to ensure the compliance of CTE/CTO. Regional office of the MoEF&CC, Bhubaneswar shall monitor the compliance of the EC conditions. Regional office of the Indian Bureau of Mines (IBM) shall monitor the compliance of mining plan and progressive mine closure plan. Any violation by mine lease holder may invite actions per the provisions of applicable acts.
4. Considering the existing environmental quality, EC capacity, production rate, iron ore resources availability and transport infrastructure availability, the share of Joda and Koira sector works out to be 70% and 30% respectively for the existing scenario for the year 2015-16. However, for additional EC capacity, it can be 50:50 subject to commensurate infrastructure improvement (viz. SOTM. pollution free road transport, enhancement of rail network etc.) in the respective regions.
5. Continuous monitoring of different environmental quality parameters as per EC and CTE/CTO conditions with respect to air, noise, water (surface and ground water) and soil quality in each region shall be done. The environmental quality parameters should not indicate any adverse impact on the environment. Monitoring within the mines should be done by individual mine lease holders, whereas outside the mine lease area, monitoring should be done by the Govt, of Odisha through various concerned departments/ authorized agencies. Various monitoring/ studies should be conducted through national reputed institutes, NABET/ MoEF&CC accredited laboratories/organizations. The reports submitted by individual mine lease holders and study reports prepared by other concerned departments/agency for each of the regions should be evaluated and examined by SPCB/ MoEF&CC.

6. Construction of cement concrete road from mine entrance and exit to the main road with proper drainage system and green belt development along the roads and also construction of road minimum 300 m inside the mine should be done. This should be done within one year for existing mines and new mine should have since beginning. The concerned departments should extend full support; wherever the land does not belong to the respective mine lease holders. The Department of Steel & Mines, Govt, of Odisha should ensure the compliance and should not issue the Mining Permits, if mine lease holder has not constructed proper cement concrete road as suggested above.
7. In view of high dust pollution and noise generation due to road transport, it is proposed to regulate/guide the movement of iron and manganese ore material based on the EC capacity of the mines. Accordingly, ore transport mode has been suggested, as given below in Table.

Table : EC Capacity based Suggested Ore Transport Mode (SOTM)

Code	EC	Suggested Ore Transport Mode
SOTM 1	> 5 MTPA	100% by private railway siding or conveyor belt up to public railway siding or pipeline for captive mines and 70% for non-captive mines
SOTM 2	Between 3 and <5 MTPA	Minimum 70% by public railway siding, through conveyor belt and maximum 30% by road - direct to destination or other public railway siding or above option
SOTM 3	Between 1 and < 3 MTPA	Minimum 70% by public railway siding and maximum 30% by road - direct to destination or by other public railway siding or above options
SOTM 4	<1 MTPA	100 % by 10/17 Ton Trucks or above options

It is mentioned by State Govt, of Odisha that currently about 45% of the iron ore is despatched using rail network and progressively it will be increased to about 60% by rail/slurry over a period of 5 years, taking into account time required to set up more railway sidings.

In view of present ore transport practices and practical limitations, all the existing mines should ensure adoption of SOTM within next 5 years. New mines or mines seeking expansion should incorporate provision of SOTM in the beginning itself, and should have system in place within next 5 years. However, the State Govt, of Odisha shall ensure dust free roads in mining areas wherever the road transportation of mineral is involved. The road shoulders shall be paved with fence besides compliance with IRC guidelines. All the roads should have proper drainage system and apart from paving of entire carriage width the remaining right of way should have native plantation (dust capturing species). Further, regular maintenance should also be ensured by the Govt. of Odisha.

Transportation of iron & manganese ore through river (jetty) to nearest Sea port (Sea cargo option) may be explored or connecting Sea ports with Railway network from the mines to be improved further so that burden on existing road and rail network and also pollution thereof can be minimized. Progress on development of dust free roads, implementation of SOTM, increased use of existing rail network, development of additional railway network/conveyor belt/ pipelines etc. shall be submitted periodically to MoEF&CC and SEIAA, Odisha.

Responsibility: Department of Steel & Mines, Govt. of Odisha; Time Period: 5 Years for developing railway/ conveyor belt facilities

8. Development of parking plazas for trucks with proper basic amenities/ facilities should be done inside mine. This should be done within one year for existing mines and new mines should have since beginning. Small capacity mines (in terms of lease area or production) not having enough space within the mine lease areas should develop parking plaza at a common place within the region with requisite facilities. Responsibility: Individual Mine Lease Holders; Time Period: 1 Year
9. Construction of NH 215 as minimum 4 lane road with proper drainage system and plantation and subsequent regular maintenance of the road as per IRC guidelines. Construction of other mineral carrying roads with proper width and drainage system along with road side plantation to be carried out. Responsibility: Department of Steel & Mines with PWD / NHAI Time Period: 2 Years.
10. Regular vacuum cleaning of all mineral carrying roads aiming at "Zero Dust Resuspension" may be considered. Responsibility: PWD / NHAI/ Mine Lease Holders; Time Period: 3 months for existing roads.
11. Expansion of existing mines and new mines should be considered after conducting recent EIA Study as per the provisions of EIA Notification 2QQ6, as amended time to time¹) with proper justification on demand scenario for iron ore requirement and availability of pollution free transport network in the region. Responsibility: IBM, Department of Steel & Mines and MoEF&CC, New Delhi.
12. **Mine-wise Allocation of Annual Production:** In case the total requirement of iron ore exceeds the suggested limit for that year, permission for annual production by an individual mine may be decided depending on approved EC capacity (for total actual dispatch) and actual production rate of individual mine during last year or any other criteria set by the State Govt., i.e. Dept, of Steel & Mines. Department of Steel and Mines in consultation with Indian Bureau of Mines-RO should prepare in advance mine-wise annual production scenario as suggested in Table, so that demand for iron ore can be anticipated, and actual production/dispatch does not exceed the suggested annual production.

**Table: Allocation of Production to Different Mines for 5 Years
(as per approved Mining Plan)**

Mine Lease	EC Capacity (MTPA)	Suggested Annual Production (MT)				
		2016-17	2017- 18	2018-19	2019-20	2020-21
		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Mine 1	X1					
Mine 2	X2					
Mine 3	X3					
Mine n	Xn					
Total	160 +	105	129	153	177	201
Next year allocation = Average of EC Capacity and Last year production						

13. Expansion of Existing Mines having Validity up to 2020: In view of implementation of MMDR Act 2015, wherein many non-captive mines are expected to be closed by March 2020, total iron ore production scenario has been. It is expected that the non-captive mines having validity till 2020 shall try to maximize their production (limited to EC capacity) in the remaining period. Further, depending upon availability of iron ore resources, these mines may also seek expansion of EC capacity. It may be noted here that total EC capacity of existing 25 working mines having validity upto 2020 is about 85 MTPA, whereas actual

production from these mines has been only 44.677 MT (52.6%) during 2015-16 and 57.07 MT (67.1%) during 2016-17. Also, it is expected that these mines would not even be able to achieve ore production as per existing EC capacity till March 2020. Therefore, these existing mines should go for production to the fullest extent to meet the requisite demand from the State. However, where EC limit is exhausted, application for expansion may be considered. Further, the EC process (i.e. Grant of TOR, Baseline data collection, Mining plan/ scheme approval, Public hearing, preparation of EIA/EMP Report. Appraisal by the EAC and grant of EC) takes about one year time. Under such circumstances, it is suggested that further applications for grant of TOR or grant of EC for expansion of production capacity of the mine should be considered for those existing mines, which have exhausted their capacity subject to consideration of all environmental aspects. Responsibility: Department of Steel & Mines and MoEF&CC, New Delhi.

14. **Sustained Iron Ore Production beyond 2020:** Considering the implementation of MMDR Act 2015, total production of iron ore in Odisha State is anticipated to be about 111 MT during 2016-17 (actual production was - 102.663 MT), 136 MT during 2017-18, 146 MT during 2018-19 and 146 MT during 2019-20. Then there will be substantial drop in total production (to the tune of 73 MT during 2020-21 onwards) due to closure of mines, which are valid up to 2020. Therefore, in order to maintain operation/sustained growth of downstream industries, iron ore mining in the region needs to be continued at a sustainable rate. The State Govt. through Department of Steel and Mines should initiate appropriate action to ensure continued availability of iron ore from the region, as per suggested sustainable annual production
15. **Reserves Estimation**-Mining Plan and Exploration; Appropriate actions (geo- technical investigation for qualitative and quantitative resource estimation & other preparations for auction of mines), may be initiated taken into account the existing working mines, and the mines which were operational at some point of time (but closed presently due to various reasons). The total iron ore reserves/ resources available within the total lease area of each mine should be estimated by State Govt./NMET/ GSI (or any other approved agency) with respect to: (i) Total lease area of mine (surface), (ii) Maximum depth to which resources could be available, (iii) Resources below the ground water table (if intersected), (iv) Reserves are to be estimated as per UNFC code with respect to quantity and quality (% Fe content), (v) Maximum mining rate and area for auction (after 2020) will be calculated based on total resources available and proposed life of mine leading to closure of mine in a stipulated time period. Responsibility: Department of Steel & Mines, IBM and GSI; Time frame: 1 year for the mines to be auctioned for next 2 years. The above mentioned organizations shall ensure the compliance with respect to timelines for implementations.
16. Depending upon availability of extractable iron ore resources within a mine, mining below the ground water table may be permitted after conducting necessary geological and hydro-geological study by GSI and requisite approval from the CGWB/CGWA (Central Ground Water Board/Authority). This can be explored at least in few mines on trial/pilot basis. Further, within a mine, it will be desirable to operate one pit at a time, and next pit should be opened after extracting maximum possible resources from the first pit, so that the exhausted pit can be used for back filling/ storing of low grade iron ore. However, depending upon the quantity and/or quality of iron/ manganese ore, other mine pits in the same mine lease may also be opened for sustainable scientific mining, as per approved mining plan/scheme of mining by IBM. The Department of Steel & Mines, Govt.

of Odisha should initiate the pilot project so that minerals are fully utilized.

17. **Commercial Utilization of Low Grade Ore:** R&D studies towards utilization of low-grade iron ore should be conducted through research/academic institutes like IMMT, Bhubaneswar, NML, Jamshedpur, and concerned metallurgical departments in IITs, NITs etc., targeting full utilization of low-grade iron ore (Fe content upto 45% by 2020 and upto 40% by 2025). In fact, life cycle assessment of whole process including environmental considerations should be done for techno-economic and environmental viability. R&D studies on utilization of mine wastewater having high concentration of Fe content for different commercial applications in industries such as cosmetics, pharmaceutical, paint industry should also be explored. Responsibility: IBM, Dept, of Steel & Mines, Individual Mine Lease Holders.
18. The mining activity in Joda-Koira sector is expected to continue for another 100 years, therefore, it will be desirable to develop proper rail network in the region. Rail transport shall not only be pollution free mode but also will be much economical option for iron ore transport. The rail network and/or conveyor belt system upto public railway siding needs to be created. The total length of the conveyor belt system/ rail network to be developed from mines to nearest railway sidings by 11 mines in Joda region is estimated to be about 64 km. Similarly, in Koira region, total length of rail network/ conveyor system for 8 mines (under SOTM 1 & 2) is estimated to be around 95 km. Further, it is suggested to develop a rail network connecting Banspani (Joda region) and Roxy railway sidings in Koira region. Responsibility: Dept, of Steel & Mines, Govt, of Odisha and Concerned Mines along with Indian Railways. Time Period: Maximum 7 years (by 2025). The Department of Steel & Mines. Govt, of Odisha should follow-up with the concerned Departments and railways so that proposed proper rail network is in place by 2025.
19. State Govt, of Odisha shall make all efforts to ensure exhausting all the iron & manganese ore resources in the existing working mines and from disturbed mining leases/zones in Joda and Koira region. The criteria suggested shall be applicable while suggesting appropriate lease area and sustainable mining rate. Responsibility: Dept, of Steel & Mines, Govt, of Odisha.
20. Large and medium mine leases contribute to better implementation of reclamation and rehabilitation plans to sustain the ecology for scientific and sustainable mining. The small leases do not possess scientific capability of environmentally sustainable mining. Therefore, new mine leases having more than 50 ha area should be encouraged, as far as possible. This will ensure inter-generational resource availability to some extent. Responsibility: Dept, of Steel & Mines, Govt, of Odisha.
21. **Mining Operations/Process Related:** (i) Appropriate mining process and machinery (viz. right capacity, fuel efficient) should be selected to carry out various mining operations that generate minimal dust/air pollution, noise, wastewater and solid waste, e.g. drills should either be operated with dust extractors or equipped with water injection system, (ii) After commencement of mining operation, a study should be conducted to assess and Quantify emission load generation (in terms of air pollution, noise, waste water and solid wasted from each of the mining activity (Including transportation) on annual basis. Efforts should be made to further eliminate/ minimize generation of air pollution/dust, noise, wastewater, solid waste generation in successive years through use of better technology. This shall be ensured by the respective mine lease holders, (iii) Various machineries/equipment selected (viz. dumpers, excavators, crushers,

screen plants etc.) and transport means should have optimum fuel/power consumption, and their fuel/power consumption should be recorded on monthly basis. Further, inspection and maintenance of all the machineries/ equipment/ transport vehicles should be followed as per manufacturer's instructions/ recommended time schedule and record should be maintained by the respective mine lease holders, (iv) Digital processing of the entire lease area using remote sensing technique should be carried out regularly once in 3 years for monitoring land use pattern and mining activity taken place. Further, the extent of pit area excavated should also be demarcated based on remote sensing analysis. This should be done by ORSAC (Odisha Space Applications Centre, Bhubaneswar) or an agency of national repute or if done by a private agency, the report shall be vetted/ authenticated by ORSAC, Bhubaneswar. Expenses towards the same shall be borne by the respective mine lease holders. Responsibility: Individual Mine Lease Holders.

22. **Air Environment Related:** (i) Fugitive dust emissions from all the sources should be controlled regularly on daily basis. Water spraying arrangement on haul roads, loading and unloading and at other transfer points should be provided and properly maintained. Further, it will be desirable to use water fogging system to minimize water consumption. It should be ensured that the ambient air quality parameters conform to the norms prescribed by the GPCB in this regard, (ii) The core zone of mining activity should be monitored on daily basis. Minimum four ambient air quality monitoring stations should be established in the core zone for SPM, PM10, PM2.5, SO₂, NO_x and CO monitoring. Location of air quality monitoring stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board (based on Emission Load Assessment Study). The number of monitoring locations may be more for larger capacity mines and working in larger area. Out of four stations, one should be online monitoring station in the mines having more than 3 MTPA EC Capacity, (iii) Monitoring in buffer zone should be carried out by SPCB or through NABET accredited agency. In addition, air quality parameters (SPM, PM₁₀, PM_{2.5}, SO₂, NO_x and CO) shall be regularly monitored at locations of nearest human habitation including schools and other public amenities located nearest to source of the dust generation as applicable. Further, 11 continuous air quality monitoring systems may be installed in Joida and Koira regions and one in Baripada/ Rairangpur region, (iv) Emissions from vehicles as well as heavy machinery should be kept under control and regularly monitored. Measures should be taken for regular maintenance of vehicles used in mining operations and in transportation of mineral, (v) The vehicles shall be covered with a tarpaulin and should not be overloaded. Further, possibility of using closed container trucks should be explored for direct to destination movement of iron ore. Air quality monitoring at one location should also be carried out along the transport route within the mine (periodically, near truck entry and exit gate). Responsibility: Individual Mine Lease Holders and SPCB.
23. **Noise and Vibration Related:** (i) Blasting operation should be carried out only during daytime. Controlled blasting such as Nonel, should be practiced. The mitigation measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented, (ii) Appropriate measures (detailed in Section 5.4) should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs/muffs, (iii) Noise levels should be monitored regularly (on weekly basis) near the major sources of noise generation within the core zone. Further, date, time and distance of measurement should also be indicated with the

noise levels in the report. The data should be used to map the noise generation from different activities and efforts should be made to maintain the noise levels with the acceptable limits of CPCB (CPCB, 2000) (iv) Similarly, vibration at various sensitive locations should be monitored atleast once in month, and mapped for any significant changes due to successive mining operations. Responsibility: Individual Mine Lease Holders.

24. **Water/Wastewater Related** : (i) In general, the mining operations should be restricted to above ground water table and it should not intersect groundwater table. However, if enough resources are estimated below the ground water table, the same may be explored after conducting detailed geological studies by GSI and hydro- geological studies by CGWB or NIH or institute of national repute, and ensuring that no damage to the land stability/ water aquifer system shall happen. The details/ outcome of such study may be reflected/incorporated in the EIA/EMP report of the mine appropriately, (ii) Natural watercourse and/or water resources should not be obstructed due to any mining operations. Regular monitoring of the flow rate of the springs and perennial nallas should be carried out and records should be maintained. Further, regular monitoring of water quality of nallas and river passing thorough the mine lease area (upstream and downstream locations) should be carried out on monthly basis, (iii) Regular monitoring of ground water level and its quality should be carried out within the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring should be carried out on monthly basis, (iv) In order to optimize water requirement, suitable conservation measures to augment ground water resources in the area should be undertaken in consultation with Central Ground Water Board (CGWB). (v) Suitable rainwater harvesting measures on long term basis should be planned and implemented in consultation with CGWB, to recharge the ground water source. Further, CGWB can prepare a comprehensive plan for the whole region, (vi) Appropriate mitigation measures (viz. ETP, STP, garland drains, retaining walls, collection of runoff etc.) should be taken to prevent pollution of nearby river/other water bodies. Water quality monitoring study should be conducted by State Pollution Control Board to ensure quality of surface and ground water sources on regular basis. The study can be conducted through NABL/ NABET approved water testing laboratory. However, the report should be vetted by SPCB. (vii) Industrial wastewater (workshop and wastewater from the mine) should be properly collected, treated in ETP so as to conform to the discharge standards applicable, (viii) Oil and grease trap should be installed before discharge of workshop effluents. Further, sewage treatment plant should be installed for the employees/colony, wherever applicable, (ix) Mine lease holder should ensure that no silt originating due to mining activity is transported in the surface water course or any other water body. Appropriate measures for prevention and control of soil erosion and management of silt should be undertaken. Quantity of silt/soil generated should be measured on regular basis for its better utilization, (x) Erosion from dumps site should be protected by providing geo-textile matting or other suitable material, and thick plantation of native trees and shrubs should be carried out at the dump slopes. Further, dumps should be protected by retaining walls.(xi) Trenches / garland drain should be constructed at the foot of dumps to arrest silt from being carried to water bodies. Adequate number of check dams should be constructed across seasonal/perennial nallas (if any) flowing through the mine lease areas and silt be arrested. De-silting at regular intervals should be carried out and quantity should be recorded for its better utilization, after proper soil quality analysis, (xii) The water so collected in the reservoir within the mine should be utilized for the sprinkling on hauls

roads, green belt development etc. (xiii) There should be zero waste water discharge from the mine. Based on actual water withdrawal and consumption/ utilization in different activities, water balance diagram should be prepared on monthly basis, and efforts should be made to optimize consumption of water per ton of ore production in successive years. Responsibility: Individual Mine Lease Holders, SPCB and CGWB.

25. **Land/ Soil/ Overburden Related** : (i) The top soil should temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long (not more than 3 years or as per provisions mentioned in the mine plan/ scheme). The topsoil should be used for land reclamation and plantation appropriately, (ii) Fodder plots should be developed in the non-mineralised area in lieu of use of grazing land, if any. (iii) Over burden/ low grade ore should be stacked at earmarked dump site(s) only and should not be kept active for long period. The dump height should be decided on case to case basis, depending on the size of mine and quantity of waste material generated. However, slope stability study should be conducted for larger heights, as per IBM approved mine plan and DGMS guidelines. The OB dump should be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles should be undertaken for stabilization of the dump. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Proper records should be maintained regarding species, their growth, area coverage etc, (iv) Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from mine operation, soil, OB and mineral dumps. The water so collected can be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly de-silted, particularly after monsoon and should be maintained properly. Appropriate documents should be maintained. Garland drain of appropriate size, gradient and length should be constructed for mine pit, soil, OB and mineral dumps and sump capacity should be designed with appropriate safety margin based on long term rainfall data. Sump capacity should be provided for adequate retention period to allow proper settling of silt material. Sedimentation pits should be constructed at the corners of the garland drains and de-silted at regular intervals, (v) Backfilling should be done as per approved mining plan/scheme. There should be no OB dumps outside the mine lease area. The backfilled area should be afforested, aiming to restore the normal ground level. Monitoring and management of rehabilitated areas should continue till the vegetation is established and becomes self-generating, (vi) Hazardous waste such as, waste oil, lubricants, resin, and coal tar etc. should be disposed off as per provisions of Hazardous Waste Management Rules, 2016, as amended from time to time. Responsibility: Individual Mine Lease Holders.
26. **Ecology/Biodiversity (Flora-Fauna) Related:** (i) As per the Red List of IUCN (International Union for Conservation of Nature), six floral species and 21 faunal species have been reported to be under threatened, vulnerable & endangered category. Protection of these floral and faunal species should be taken by the State Forest & Wildlife Department on priority, particularly in the mining zones, if any, (ii) The mines falling within 5-10 km of the Karo- Karampada Elephant corridor buffer need to take precautionary measures during mining activities. The forest and existing elephant corridor routes are to be protected and conserved. Improvement of habitat by providing food, water and space for the elephants is required to be ensured to avoid Man- Elephant conflicts. Though as per the records of State Forest Department, movement of elephants in the Karo-Karampada elephant corridor within 10 km distance from the mines in Joda and Koira is not observed, the Forest Department shall further record and ensure that elephant's movement is not affected due to mining activities, (iii) All precautionary measures should be taken during

mining operation for conservation and protection of endangered fauna namely elephant, sloth bear etc. spotted in the study area. Action plan for conservation of flora and fauna should be prepared and implemented in consultation with the State Forest and Wildlife Department within the mine lease area, whereas outside the mine lease area, the same should be maintained by State Forest Department, (iv) Afforestation is to be done by using local and mixed species saplings within and outside the mining lease area. The reclamation and afforestation is to be done in such a manner like exploring the growth of fruit bearing trees which will attract the fauna and thus maintaining the biodiversity of the area. As afforestation done so far is very less, forest department needs to identify adequate land and do afforestation by involving local people in a time bound manner, (v) Green belt development carried out by mines should be monitored regularly in every season and parameters like area under vegetation/plantation, type of plantation, type of tree species /grass species/scrubs etc., distance between the plants and survival rate should be recorded, (vi) Green belt is an important sink of air pollutants including noise. Development of green cover in mining area will not only help reducing air and noise pollution but also will improve the ecological conditions and prevent soil erosion to a greater extent. Further, selection of tree species for green belt should constitute dust removal/dust capturing plants since plants can act as efficient biological filters removing significant amounts of particulate pollution. Thus, the identified native trees in the mine area may be encouraged for plantation. Tree species having small leaf area, dense hair on leaf surface (rough surface), deep channels on leaves should be included for plantation, (vii) Vetiver plantation on inactive dumps may be encouraged as the grass species has high strength of anchoring besides medicinal value, (viii) Details of compensatory afforestation done should be recorded and documented by respective forest divisions, and State Forest Department should present mine-wise annual status, along with expenditure details, (ix) Similarly, Wildlife Department is also required to record and document annual status of wildlife in the region and should identify the need for wildlife management on regional level, (x) Maintenance of the ecology of the region is prime responsibility of the State Forest and Wildlife Department. They need to periodically review the status and identify the need for further improvement in the region. The required expenditure may be met from the funds already collected in the form of compensatory afforestation and wildlife management. Further, additional fund, if required can be sought from DMF. Responsibility: Individual Mine Lease Holders and State Forest & Wildlife Department.

27. **Socio-Economic Related:** (i) Public interaction should be done on regular basis and social welfare activities should be done to meet the requirements of the local communities. Further, basic amenities and infrastructure facilities like education, medical, roads, safe drinking water, sanitation, employment, skill development, training institute etc. should be developed to alleviate the quality of life of the people of the region, (ii) Land outtees and land losers/affected people, if any, should be compensated and rehabilitated as per the national/state policy on Resettlement and Rehabilitation, (iii) The socioeconomic development in the region should be focused and aligned with the guidelines/initiatives of Govt, of India/ NITI Aayog / Hon'ble Prime Minister's Vision centring around prosperity, equality, justice, cleanliness, transparency, employment, respect to women, hope etc. This can be achieved by providing adequate and quality facilities for education, medical and developing skills in the people of the region. District administration in association with mine lease holders should plan for "*Samagra Vikas*" of these blocks well as other blocks of the district. While planning for different schemes in the region, the activities should be prioritized as per Pradhan Mantri Khanij Kshetra Kalyan Yojna (PMKKKY), notified by

Ministry of Mines, Govt, of India, vide letter no. 16/7/2017-M.VI (Part), dated September 16, 2015. Responsibility: District Administration and Individual Mine Lease Holders.

28. **Road Transport Related:** (i) All the mine lease holders should follow the suggested ore transport mode (SOTM) based on its EC capacity within next 5 years, (ii) The mine lease holders should ensure construction of cement road of appropriate width from and to the entry and exit gate of the mine as suggested in Chapter 10. Further, maintenance of all the roads should be carried out as per the requirement to ensure dust free road transport, (iii) Transportation of ore should be done by covering the trucks with tarpaulin or other suitable mechanism so that no spillage of ore/dust takes place. Further, air quality in terms of dust, PM₁₀ should be monitored near the roads towards entry & exit gate on regular basis, and be maintained within the acceptable limits. Responsibility: Individual Mine Lease Holders and Dept, of Steel & Mines.
29. **Occupational Health Related:** (i) Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects periodically, (ii) Occupational health surveillance program for all the employees/workers (including casual workers) should be undertaken periodically (on annual basis) to observe any changes due to exposure to dust, and corrective measures should be taken immediately, if needed, (iii) Occupational health and safety measures related awareness programs including identification of work related health hazard, training on malaria eradication, HIV and health effects on exposure to mineral dust etc., should be carried out for all the workers on regular basis. A full time qualified doctor should be engaged for the purpose. Periodic monitoring (on 6 monthly basis) for exposure to respirable minerals dust on the workers should be conducted, and record should be maintained including health record of all the workers. Review of impact of various health measures undertaken (at an interval of 3 years or less) should be conducted followed by follow-up of actions, wherever required. Occupational health centre should be established near mine site itself. Responsibility: Individual Mine Lease Holders and District Administration (District Medical Officer),
30. **Reporting of Environmental Sustainability Achievement:** All the mines should prepare annual environmental sustainability report (ESR), highlighting the efforts made towards environmental protection with respect to different environmental components vis-a-vis production performance of the mine on monthly basis. The data collected as per EC and CTE/CTO conditions should be utilized to prepare the annual sustainability report. The mines performing high with effective environmental safeguards may be suitably recognized/rewarded. "Star Rating Format" formulated by the Ministry of Mines along with environmental sustainability report may be used,
31. **Environmental Monitoring Requirements at Regional Level:** Apart from strict compliance and monitoring by individual mine lease holder, there is a need for simultaneous monitoring in each of the regions by competent expert agencies under the guidance/ supervision of concerned regulatory agency. Details of the studies required to be done on regular basis (continuously for 5 years) through responsible agency (organization of national/state repute) and time frame are suggested in Table.

Table: Suggested Environmental Monitoring Requirements and Action Plans at

Sl. No.	Study component / Action Plan	Responsibility	Monitoring and Reporting Time Frame (Approx.)
1.	Environmental Quality Monitoring with respect to Air, Water, Noise and Soil Quality in each region (Joda, Koira and Baripada/Rairangpur) as per specified frequency shall be done by a third party (preferably Govt.) and/or laboratory approved/ recognized by NABET/ CPCB/ SPCB/ MoEF&CC. All the water bodies (rivers, nalias, ponds etc.) shall be monitored. National/State level research/ academic institutes may be involved initially for couple of years to streamline the activity. The report shall be brought out annually by June each year. The study shall be conducted in consultation with MoEF&CC-RO.	SPCB	Continuous Annually
	Installation of online ambient air quality monitor for PM ₁₀ , PM _{2.5} , SO _x and NO _x within the mine havina more than 3 MTPA EC Caoacitv	Respective Mine Lease Holders	Continuous Annually
	Installation of online ambient air quality monitor for PM ₁₀ , PM _{2.5} , SO _x and NO _x in the Joda and Koira Region (total 11 locations).	SPCB	Continuous Annually
2.	Status of flora and fauna in each of the regions shall be assessed on annual basis. Changes, if any, taking place in the region shall be brought out clearly. The study shall be conducted in consultation with State Forest and Wildlife Department.	State Forest & Wildlife Dept.	Annually in mining zone and once in 3 years in the region
3.	Socio-economic study incorporating developments taking place in each of the region, CSR initiatives made by the mining companies shall be conducted on annual basis. Further, micro level developmental needs shall be clearly brought out in the report for each region. The study shall be conducted in consultation with district administration.	Respective District Administration	Annually
4.	A detailed hydro-geological study in each of the regions shall be	SPCB	Once in 2 years

Sl. No.	Study component / Action Plan	Responsibility	Monitoring and Reporting Time Frame (Approx.)
	conducted in an integrated manner in consultation with Regional Director, Central Ground Water Board. Accordingly, all project proponents shall implement suitable conservation measures to augment ground water resources in the area.		
5.	The State Govt. shall ensure construction and maintenance of dust free common roads/ appropriate rail network for transport of ore from mines to the consumer end.	Dept. of Steel & Mines	12 months for road network and 5-7 years for rail network
6.	Construction and maintenance of dust free roads from respective mine to the main road	Respective Mine Lease Holders	Continuous 6 months
7.	Traffic/road inspection study addressing the condition of traffic/roads leading to different mines and connecting to different railway sidings shall be undertaken on annual basis. Further, detailed traffic study shall be undertaken on every 5 yearly basis to ensure adequacy of road/rail infrastructure in each of the regions. The study can be undertaken through national/ state level research/ academic institute (such as CSIR-CRRI, New Delhi).	Dept. of Steel & Mines	Continuous 6 months
8.	Assessment of land use/ land cover changes in each of the regions, with particular focus on mining areas, afforestation activities, variation in flow path of various water bodies etc. using remote sensing data	ORSAC	Annually
9.	R&D Studies for utilization of low-grade iron ore	Dept. of Steel & Mines through R&D / Academic Institutes	Upto 45% by 2020 and upto 40% by 2025

The data so generated for the region should be made available on the website of Department of Steel & Mines and also at MoEF&CC website, so that it can be effectively utilized by Individual Mine Lease Holders for preparing EIA/ EMP reports. This will meet the requirement for separate one season baseline environmental quality data collection by the individual proponents, if the mine proposed is in the same study region. Further. MoEF&CC through EAC1 can also utilize the data base available in evaluating the proposals for expansion of existing mines or new mines while granting

ToR or EC to the mine, taking an holistic view of the region. State Govt, of Odisha should bring out an integrated environmental sustainability report for each of the regions (mainly for Joda and Koia region) incorporating ESR of individual mines and data collected in the region through various agencies, once in 5 years, to plan level of scientific and sustainable mining for the next 5 years.

32. Institutional Mechanism for Implementation of Environmentally Sustainable Mining: The present study is not a one-time study, but a process to ensure environmentally sustainable mining activities in the region on long term basis. Looking into the large-scale mining activities and long term perspective for mining vis-a-vis environmentally sustainable mining and upliftment of people of the region, there is a need to create an agency, who will integrate all the aspects relating to sustainable mining in the region on long term basis. It could be a SPV of Govt, of Odisha or a cell within the overall control and supervision of Dept, of Steel & Mines, with members from

IBM, GSI, OSPCB, MoEF&CC-RO and other concerned Departments and Mine Owners (EZMA), District Administration. It is found that the strong database available for the region needs to be taken into account to map and establish environmental quality of the region on daily, monthly, seasonal and annual basis. Further, the efforts and initiatives of the mines towards environmental protection as well as upliftment of the people of the region are required to be integrated, and a systematic plan at the block/regional level needs to be framed for the overall benefit of the local society, region, district, state and the country as a whole. It will be desirable to have proper environmental quality data management and analysis by NEERI or any other agency for next 5 years (six monthly compliance reports followed by field verification) ensuring sustainable mining practices in the region leading to an overall development of the region. District Mineral Funds should be utilized appropriately for various developmental activities/needs of the region. Further, an environmental sustainability report incorporating environmental status of region coupled with social upliftment may be brought out by SPCB or any other authorized agency on annual basis. This report can be used for supporting the regional EIA study, and also need for environmental quality monitoring by individual mine seeking environmental clearance for new mine/ expansion of mine, including public hearing. Since, outcome of the above study reports shall be in the overall interest of all the stakeholders (including local population) of the region, further planning for the region shall warrant cooperation and assistance of all the stakeholders (mine operators, industries, transporters, State & Central Government Offices, MoEF&CC, CPCB, SPCB, Dept, of Steel & Mines, IBM, IMD, NGOs and local people) in sharing the relevant data/information/ reports/documents etc. to continuously improve upon the environmentally sustainable development plan for economic growth in mining sector as well as for improvement in quality of life of the people of the region.