

**PROCEEDINGS OF THE MEETING OF STATE LEVEL EXPERT APPRAISAL  
COMMITTEE, ODISHA HELD ON 02<sup>ND</sup> DECEMBER 2023**

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The SEAC met on 2<sup>nd</sup> December 2023 at 10:30 AM in the Conference Hall of Odisha State Pollution Control Board, Bhubaneswar under the Chairmanship of Sri Shashi Paul. The following members were present in the meeting.

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

**CONSIDERATION OF OLD PROPOSALS (COMPLIANCE RECEIVED):**

The compliances furnished by the proponents were verified by the members through e-mail and also proceedings of the meeting were confirmed by the members through e-mail. The decision of the committee on case-to-case basis as follows:

**ITEM NO. 01**

**PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR DEVELOPMENT OF PRIVATE HOUSING PROJECT 2.191 ACRES OF LAND AT PLOT NO.: 336/2120, 336/3046, 336/3035, 336/2764, 336, 336/3221, 334/2272 KHATA NO- 703/362, 703/1499, 703/1496, 703/1222, 703/2256, 703/1720, 703/559, OVER AN BUILT UP AREA – 47957.9 SQ.M NEAR NH-16 ROAD, AT-PATRAPADA, BHUBANESWAR , DIST – KHORDHA FOR M/S. UTKAL BUILDERS LTD OF SRI RAKESH BHURA – MOD EC**

1. The proposal is for Modification of Environmental Clearance of M/s. Utkal Builders Ltd. for Development of Private Housing Project 2.191 Acres of land at Plot No.: 336/2120, 336/3046, 336/3035, 336/2764, 336, 336/3221, 334/2272 Khata No- 703/362, 703/1499, 703/1496, 703/1222, 703/2256, 703/1720, 703/559, over an built up area – 47957.9 SQ.M Near NH-16 Road, at- Patrapada, Bhubaneswar , Dist – Khordha of Sri Rakesh Bhura.
2. Environmental Clearance from SEIAA vide letter no. 1739/SEIAA, dated 16.07.2021 of total built up area is 33,621.35 sqm and total nos. of floor is 17 nos. in Residential Block & 4 Nos. in Commercial Block, but due to height restriction from Airport Authority of India we have reduce the 5 nos. of floor in Residential Block & increased the 8 Nos. of Floor in Commercial Block (Convenient Store) & revised the built up area i.e. 47,957.94 sqm.

Proceedings of the SEAC meeting held on 02.12.2023 (Old proposals – compliance received)

*J Nayak*  
Environmental Scientist, SEAC

3. **Location and Connectivity** - The proposed site is located at Patrapada, Bhubaneswar, Odisha. The Geographical co-ordinate of the project site is: Latitude -20° 14' 44.81" N & Longitude - 85° 46' 32.78" E. The project site is well connected with National Highway-16 (Jharpokharia-Chennai Road). The nearest railway station is Bhubaneswar Railway station at a distance of approx 10.6 Km in South West direction. The nearest airport is Biju Pattnaik Airport Bhubaneswar at a distance of approx. 13.4 Km in South-West direction from project site. The site is located adjacent to the local landmarks, Haridaspur Mosque, Jagannath Temple, Pahala Etc. There is no structure or encroachments on the site. The site is easily accessible from NH-05 Road.

4. **Meteorology:** The maximum temperature is about 36.0° C and the minimum temperature is 16.0° C felt in the area. The average annual rainfall in the area is 1326.16 mm.

5. **Building Details of The Project:**

Total Plot Area	:	8,866.66 sqm
Kisam of Land	:	Gharabari
Residential Builtup Area	:	33,350.98 sqm
Commercial Builtup Area	:	14,606.96 sqm
Total Builtup Area	:	47,957.94 sqm
Total FAR Area	:	36,535.71 sqm
Ground Coverage	:	3,015.00 sqm
Road & Paved Area	:	2,483.00 sqm
Green Belt Area	:	1,793.52 sqm
Total Parking Area	:	11,922.22 sqm
Height of the Building	:	42.00 m

6. **Water requirement:** Fresh make up of 104.0 m<sup>3</sup>/day will be required for the project which will be sourced from Ground water. Waste water of 132.1 KLD will be treated in a STP of 150 KLD capacity, which includes primary, secondary and tertiary treatment. After treatment the treated water will be discharge to the Near Drain.

7. **Power requirement:** The daily power requirement for the proposed building is preliminarily assessed as 1376 KW. In order to meet emergency power requirements during the grid failure, there is provision of 2 nos. of DG set having 320 KVA capacities for power back up in the proposed Building Project.

For energy conservation, there will be 33 nos. of Solar Lighting poles (@72 Watt) has been proposed for Street & common area solar lighting, so

Energy conservation by using Solar Street Lighting = 33 x 72 = 2376 watt = 2.4 KW

Energy conservation by using Solar lighting for common area = 151.8 KW

Total Energy Conservation = (151.8+2.4) KW = 154.2 KW

Total Energy saving = 154.2/1376 = 0.1120 x 100 = 11.2 %

8. **Rain Water Harvesting:** Rain Water will be harvested through 6 nos. of recharging pits.

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9. **Firefighting Installations:** Firefighting system will be installed as per recommendation of the Firefighting Officer, Odisha and as per the guideline of NBC (part-4).
10. **Green Belt Development:** Green belt will be developed over an area of 1,793.52 sqm which is 20.23 % of the plot area; by using the local species like Neem, Karang, Golden Champa, Bakul, Bela, Bottle Palm, Cheekoo, Guava etc.
11. **Solid Waste Management:** From the residential complex solid waste in form of food waste from kitchen and miscellaneous waste will be generated @ 0.45 kg/person/day, which will be about 476.1 kg/day. The generated solid waste from the residential complex will be segregated as biodegradable and non-biodegradable. This will be collected in separate coloured bins. Proper waste management practices will be adopted during the collection, storing and disposal of the generated solid waste. Waste generated from Commercial people will be @ 0.15 kg/capita/day, which will be about 45.0 kg/day

Solid waste from sweeping and Dry Garbage containing non-biodegradable wastes like polythene bags, metal, ceramic Waste, glass etc. shall be stored in separate garbage bin and send to approved recyclers. Around 66.0 kg/day of STP sludge will be generated.

Solid Waste from Residential Population - 476.1 kg/day

Solid Waste from Commercial Population- 45.0 kg/day

STP Sludge - 66.0 kg/day

**Total Solid Waste Generation - 587.1 kg/day**

12. The Estimated Project cost is ₹ 40 Crores and Environment Management Cost is ₹ 220 Lakhs
13. The project proponent along with the consultant **M/s Centre for Envotech & Management Consultancy Pvt. Ltd., Bhubaneswar** made a detailed presentation on the proposal on 03.08.2022.
14. The SEAC in its meeting held on 03.08.2022 decided to take decision on the proposal after receipt of the following information / documents from the proponent followed by site visit of Sub-Committee of SEAC.
- Structural Stability certificate from appropriate authority as per BDA guidelines be submitted and also for revise plan also with corresponding studies made for both approved original plan and revised approved plan.
  - Certificate from chartered civil engineer how much construction has been made for both approved original plan and revised approved plan.
  - Comparative statement in terms of physical features in original plan and present plan.
  - Compliance Report to Previous EC conditions duly certified by Regional Officer of MoEF & CC.
  - Permission from Water Resources deptt. For usage of ground water in commercial complex.
  - Approval from Fire Safety Dept. for 6m fire tender corridor for high rise building of 40m height.
  - As per BDA norms, is ground coverage for the project is 35% of total area?
  - Justification as to why this will not be treated as a violation case.

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ix) Impact and effect of change in ground coverage with reference to the original approved plan and the revised plan.

15. The project proponent was requested vide letter no. 765(10)/ SEAC – (Misc) - 28, dated 06.09.2022 to submit the information / documents as sought by the SEAC at para 14 above.

16. The proposed site was visited by the sub-committee of SEAC on 14.11.2022. Following are the observations of the sub-committee and proponent needs to submit relevant documents as below:

- i) PP and Consultant were present. It was observed that part construction has been initiated towards the back side of the plot and the permission is for commercial and residents use. The PP explained that the construction was based on earlier EC, but now the commercial part has been reduced to cater only the residents and accordingly the plan was modified. No construction was initiated at the front side where modification was sought. However, an undertaking that the Commercial area identified shall be used only for the people who would be residing in the complex may be submitted or the same can be put as a condition of EC.
- ii) Copy of drainage plan approved by BMC with any layout/drawing vetted and NOC needs to be taken before construction including from NHA if connecting to their drain be a condition of EC.
- iii) Justification as to why the case cannot be considered as a violation case with reference to BDA norm.
- iv) All documents or information as asked by Committee during presentation
- v) The Sub-committee recommend for EC subject to above conditions and submission of documents /compliances as asked by the committee during presentation.

17. The SEAC in its meeting held on dated 13-01-2023 decided to take decision on the proposal after receipt of information / documents as requested vide letter no. 765(10)/ SEAC – (Misc) - 28, dated 06.09.2022 and as sought by the Sub-Committee of SEAC at para 16 above.

18. The proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
1.	Structural Stability certificate from appropriate authority as per BDA guidelines be submitted and also for revise plan also with corresponding studies made for both approved original plan and revised approved plan.	Structural Stability of the building is vetted by Adroit Consultants, Kolkata. Structural Stability Certificate is attached in Annexure-1.
2.	Certificate from chartered civil engineer how much construction has been made for both approved original plan and revised approved plan.	We have reduced the commercial part of the building. The construction work is started only residential block which EC was granted earlier. So we have start the construction only residential block.
3.	Comparative statement in terms of physical features in original plan and present plan.	A comparative statement showing physical features in original plan and present plan is attached in Annexure-2.

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*J. Nayak*  
Environmental Scientist, SEAC

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
4.	Compliance Report to Previous EC conditions duly certified by Regional Officer of MoEF & CC.	We have already applied the letter to IRO MoEF&CC for issue certified EC Compliance report of existing EC. We will submit the certified compliance report before issue of Environment Clearance.
5.	Permission from Water Resources deptt. For usage of ground water in commercial complex.	The ground water clearance has been Obtained from CGWA vide noc no. CGWA/NOC/INF/ORIG/2021/12997, dated 21.09.2021. CGWA NoC is attached in Annexure-3.
6.	Approval from Fire Safety Dept. for 6m fire tender corridor for high rise building of 40m height.	Fire Safety recommendation has been obtained from Odisha Fire Services vide letter no. RECOMM1204130012021000174, dated 15.07.2021. Fire NoC is attached in Annexure-4.
7.	As per BDA norms, is ground coverage for the project is 35% of total area?	As per BDA Norms, the ground coverage of the building is 40% for more than 40 m height of the building. BDA notification is attached in Annexure-5.
8.	Justification as to why this will not be treated as a violation case.	The construction work is started only residential block which EC was granted earlier. We have reduced the commercial part of the building for which EC application is applied. So we have constructed only residential block which is not changed.
9.	Impact and effect of change in ground coverage with reference to the original approved plan and the revised plan.	<ul style="list-style-type: none"> <li>As the ground coverage is increasing according to the Population, We are also increasing the services like the capacity of STP, DG, UGT etc.</li> <li>Also increasing the parking according to the population As per BDA norms.</li> </ul>
1.	PP and Consultant were present. It was observed that part construction has been initiated towards the back side of the plot and the permission is for commercial and residents use. The PP explained that the construction was based on earlier EC, but now the commercial part has been reduced to cater only the residents and accordingly the plan was modified. No construction was initiated at the front side where modification was sought. However, an undertaking that the Commercial area identified shall be used only for the people who would be	An undertaking is attached in Annexure-6.

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
	residing in the complex may be submitted or the same can be put as a condition of EC.	
2.	Copy of drainage plan approved by BMC with any layout/drawing vetted and NOC needs to be taken before construction including from NHA if connecting to their drain be a condition of EC.	The drainage plan has been approved by Bhubaneswar Development Authority vide letter no. 4584, dated 12.02.2020. Drainage letter is attached in Annexure-7 and drainage layout is attached in Annexure-8.
3.	Justification as to why the case cannot be considered as a violation case with reference to BDA norm.	The construction work is started only residential block which EC was granted earlier. We have reduced the commercial part of the building for which EC application is applied. So we have constructed only residential block which is not changed.
4.	All documents or information as asked by Committee during presentation	Attached

After detailed discussion, the Committee decided to take decision on the proposal after receipt of the following from the proponent:

- a) Environmental Clearance dated 16.07.2021 for total built up area is 33,621.35 sqm and total nos. of floor 17 nos. in Residential Block & 4 Nos. in Commercial Block, Now, 5 nos. of floor reduced in Residential Block (so, 12 floors) & increased 8 Nos. of Floor in Commercial Block to 12 floors. Revised the built up area i.e. 47,957.94 sqm. This appears to be a complete **violation case** as the PP has progressed construction without obtaining the AA clearance (if the cause stated is true)
- b) All the required statutory clearances obtained were on 2020/2021. Since the building is undergoing MAJOR CHANGES, they need to obtain fresh clearances.
- c) There are mismatches in the comparative table presented and in the ADS. PP needs to clarify which is correct.
- d) The residential floors are reduced but the residential population increased by 40%
- e) The STP capacity is revised from 140 to 150 with 40% increase in residents (830 to 1176) is faulty and to be reworked and submitted.
- f) The structural certificate has no date hence cannot be considered. They need to submit a fresh certificate from a government approved structural engineer or BDA mentioning the floor changes.
- g) Permission from highway authority or appropriate authority before construction to discharge the excess treated water is **not complied and violated**. This needs to be submitted with present changes.
- h) Extent of construction by Chartered Civil Engineer is not submitted. Let the PP submit the certificate with regard to the extent of construction from an authorised Architect or Structural Engineer of BDA.
- i) As there is a drastic increase in commercial units, the PP needs to submit an Affidavit that it will not be used for outside public (if such statement issued is true).

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**ITEM NO. 02**

**PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF M/S UTKAL REALTORS PVT. LTD. FOR PROPOSED CONSTRUCTION OF PRIVATE HOUSING PROJECT OVER PLOT NO.: 292,293,294,295,296,298,295/687, KHATA NO - 352/237, 352/236, 352/322, 352/238 OVER AN REVISED BUILT-UP AREA 52257.17 SQM AT PAHAL, BHUBANESWAR. DIST- KHURDA OF SRI PRAKASH CHAND BHURA - MOD EC.**

1. The proposal is for Modification of Environmental Clearance for Proposed Construction of Private Housing Project over Plot No.: 292,293,294,295,296,298,295/687, Khata No - 352/237, 352/236, 352/322, 352/238 over an revised built up area 52257.17 sqm at Pahal, Bhubaneswar, Dist- Khurda of Sri Prakash Chand Bhura.
2. M/s Utkal Realtors Pvt. Ltd. has awarded for Development of Private Housing Project 2.08 Acres of land at Plot No.: 292,293,294,295,296,298,295/687 Khata No- 352/237, 352/236, 352/322, 352/238, Near NH-16 Road, Pahala, Bhubaneswar, Odisha-751021.
3. The proposed site is located at Pahal, Bhubaneswar, Odisha. The Geographical co-ordinate of the project site is: Latitude - 20° 20' 26.60" N & Longitude - 85° 53' 04.07" E. The project site is well connected with National Highway-16 (Jharpokharia-Chennai Road). The nearest railway station is Bhubaneswar Railway station at a distance of approx 10.6 Km in South West direction. The nearest airport is Biju Pattnaik International Airport Bhubaneswar at a distance of approx. 13.4 Km in South-West direction from project site. The site is located adjacent to the local landmarks, Haridaspur Mosque, Jagannath Temple, Pahala Etc. There is no structure or encroachments on the site. The site is easily accessible from NH-16 Road.

**4. Building Details of The Project:**

Particular	Area as per EC	Revised	Permissible
Project Name	Proposed Housing Project (Residential Use Type)		
Plot Area	8457.86 sqm	8457.86 sqm	--
Ground Coverage	2875 sqm (34 %)	3313.35 sqm (39.2 %)	--
Total Built up Area	30990.21 sqm	58737.31 sqm	--
FAR	23257.91 sqm (2.74)	39846.96 sqm (4.711)	23259.11 sqm (2.75)
Maximum Height	59.45 mtr (Residential) 16.80 mtr (Commercial)	83.5 mtr (Tower-A) 83.5 mtr (Tower-B&C)	--
Road & Paved Area	2368.15 sqm	2368.15 sqm	--
Parking Area	7709.50 sqm (30 % of Residential FAR Area + 50 % of commercial FAR Area)	13384.48 sqm	(30 % of Residential FAR Area)
Green Belt Area	1691.50 sqm (20% of Plot area)	1701 Sqm (20.11% of total plot area).	1691.50 sqm (20% of Plot area)
Power/Electricity Requirement & Sources	1056 KW	1682.17 KW Source: TPCODL	--
No. of DG sets	2 x 500 KVA	1 x 750 KVA	--
Fresh Water	75 KLD	133 KLD	--

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Particular	Area as per EC	Revised	Permissible
requirement & Sources	Source-Ground Water	Source-Ground Water	
Sewage Treatment & Disposal	STP Capacity 110 KLD	STP Capacity 180 KLD	---
Estimated Population	700 nos.	1428 nos.	---

#### 5. REQUIREMENT FOR THE PROJECT:

- **Area requirement:** For this project- 8457.86 sqm (2.08 Acres) of land is required, which has already been acquired.
- **Power requirement:** The daily power requirement for the proposed Private Developer Project is preliminarily assessed as 1682.17 KW source from TPCODL of Odisha State Electricity Board. In order to meet emergency power requirements during the grid failure, there is provision of 1 no. of DG set having 750 KVA (1 No.) capacities for power back up in the Private Housing Project.
- **Water requirement:** Fresh make up of 133m<sup>3</sup>/day will be required for the project which will be sourced from Ground Water Source.

#### 6. Solid waste Generation:

S. No.	Category	Counts (heads)	Waste generated
1.	Residents	1428 @ 0.45 kg/day	642.6 kg/day
3.	Floating population in residents	140 @ 0.15 kg/day	21 kg/day
5.	STP sludge(S in Kg=Q*0.01*0.05 Where, Q = Quantity of waste water generated in Ltr)		85 kg/day
<b>Total Solid Waste Generated</b>			<b>748.6 kg/day Say 749 kg/day</b>

- The project proponent along with the consultant M/s Centre for Envotech & Management Consultancy Pvt. Ltd., Bhubaneswar made a detailed presentation on the proposal.
- The project proponent has intimated during presentation that they have not yet started any construction activity for the project including proposal for modification of EC.
- The SEAC in its meeting held on dated 30-08-2022 decided to take decision on the proposal after receipt of the following information / documents from the proponent. The proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
1.	Structural Stability certificate from appropriate authority as per BDA guidelines be submitted and also for revise plan also with corresponding studies made for both approved original plan and revised approved	Structural Stability Certificate of the proposed building is attached in Annexure-1.	complied

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*J Nayak*  
Environmental Scientist, SEAC



Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
	plan.		
2.	Certificate from chartered civil engineer about construction made for both approved original plan and revised approved plan.	Chartered Certificate regarding construction made for both original plan and revised approved plan is attached in Annexure-2.	complied
3.	Comparative statement in terms of physical features in original plan and present plan.	Comparative Statement regarding physical features in original plan and present plan is attached in Annexure-3.	Complied
4.	Compliance Report to Previous EC conditions duly certified by Regional Officer of MoEF & CC.	The present proposal is for Amendment of Environment Clearance. No construction work is started at site, once the Amendment EC is received from SEIAA we will submit the Six Monthly EC Compliance report to Regional Office of MoEF&CC and SEIAA.	-
5.	Permission from Water Resources deptt. For usage of ground water in commercial complex.	We have received the Ground Water NoC from CGWA vide NoC no. CGWA/NOC/INF/ORIG/2021/12756. Copy of Ground Water NoC is attached in Annexure-4.	complied
6.	Approval from Fire Safety Dept. for 6m fire tender corridor for high rise building of 40m height.	Recommendation letter from Fire Safety Department is attached in Annexure-5.	complied
7.	As per BDA norms, is ground coverage for the project is 35% of total area?	As per BDA Norms, if building height is more than 40 meters then Ground Coverage of the building is 40%. BDA Norms is attached in Annexure-5.	complied
8.	Ground coverage of both original approved plan and revised plan approved of the total plot area vis- a - vis the guidelines/ norms	Ground Coverage of the approved plan is 34% and the ground coverage of the revised plan is 39.2%. As per BDA Norms the Ground Coverage of the building is 40%. BDA Norms is attached in Annexure-5.	Complied
9.	Impact and effect of change in ground coverage with reference to the original approved plan and the revised plan.	<ul style="list-style-type: none"> <li>As the ground coverage is increasing according to the Population, We are also increasing the services like the capacity of STP, DG, UGT etc.</li> <li>Also increasing the parking according to the population As per BDA norms.</li> <li>In previous plan we have provided 12.0m driveway as per previous BDA norms but as per new BDA norm it's reduced to 7.50m.</li> </ul>	-
10.	In view of significant changes in approved plan and increase in population from 700 to 1428, the requirements be recast with reference to water, power, parking in terms of space and ECS, waste water discharge, STP and its capacity, rain water harvesting and recharging with	Comparison sheet of approved plan & revised plan is attached.	complied

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
	back up calculation be revisited and resubmitted including number and capacity of DG sets & basis of it etc.		
11.	Tower wise break up of built-up area of approved original plan and revised plan approved as well.	Tower wise break up of built up area of approved original plan & revised plan is attached.	complied
12.	Distance between the towers as per the original plan approved and revised plan approved against the guidelines/norms for the same.	The width of open space between the building on a plot shall be the setback specified in rule 32 and 33 for the tallest building subject to a minimum of three meters and the minimum width of internal road shall be 6 meters.	
13.	Fresh traffic study through a reputed Institute or study to be vetted by a reputed Institute in view of significant changes in population and the vehicles thereof at intersecting points with public road/ NH/ SH.	The Traffic Study has been vetted by IIT Bhubaneswar. We have calculated the Traffic volume at higher. Traffic Study Report is attached in Annexure-7.	complied
14.	Letter from Appropriate authority to take additional load of treated waste water discharge	Bhubaneswar Municipal Corporation (BMC) has vetted the drainage plan. Drainage Vetted letter is attached in Annexure-4.	BMC has vetted the drainage plan. Drainage Vetted letter submitted nowhere the permission for additional load of treated waste water to be discharge is mention.

After detailed discussion, the Committee decided to take decision on the proposal after receipt of the following from the proponent followed by site visit of the Sub-Committee of SEAC.

- The built-up area, population etc. are increased almost 2 times, but STP Capacity, Water requirements are increased by about 60%. Thus, basis with detailed calculations is to be submitted.
- The population with power load increased but, DG Set capacity reduced from 1000 KVA to 750 KVA needs to be explained.
- No permission from authority for discharge of excess treated water taken, which is a non-compliance and reported in the Proceeding.
- All statutory reports of Traffic, Ground water, AA etc. fresh to be taken as some of them are of 2020 and 2021 and there are major changes.

**ITEM NO. 03**

**PROPOSAL OF ENVIRONMENTAL CLEARANCE OF RAIKA IRON & MANGANESE ORE MINES OF SHRI SHIV DUTTA SHARMA OVER AN AREA OF 26.243 HA AT VILLAGE RAIKA, TAHASIL-BARBIL, DISTRICT-KEONJHAR OF SRI SHAKTI DASH - VIOLATION TOR.**

1. The proposal was considered by the committee to determine the "Terms of Reference (ToR)" for undertaking detailed EIA study for the purpose of obtaining environmental clearance in accordance with the provisions of EIA Notification, 2006 and amendment thereafter.
2. This proposal is for Terms of Reference for Environmental Clearance of Raika Iron & Manganese Ore Mines of Shri Shiv Dutta Sharma over an area of 26.243 Ha at village Raika, Tahasil-Barbil, Dist-Keonjhar of Sri Shakti Dash.
3. **Category:** This project falls under Category "B" or Schedule 1(a): Mining of Mineral as per EIA Notification dated 14th Sept, 2006 and its amendments.
4. **TOR details:** Terms of Reference was issued by SEIAA, Odisha vide letter no:- letter No. 501/SEAC214 dated 19.07.2011 for production of iron ore 1.00 lakhs tons per annum and Manganese Ore 1000 tons per annum.
5. **Public hearing details:** The Public hearing was conducted successfully on 25.04.2012.
6. Final EIA/EMP with public hearing details submitted to SEIAA, Odisha vide letter dtd. 13.06.2012 towards grant of Environmental Clearance.
7. The mine was non-operational after 2009-10 as State Govt. of Odisha declared the lease as lapsed vide proceeding no. 7857/SM dated 20.08.2015 w.e.f. 30.09.2011 due to excessive of Iron & Manganese mining (as accessed by CEC) beyond permissive quantity and without obtaining prior environmental clearance during the year 2000-01 to 2009-10.
8. Further, as per the direction of Hon'ble Supreme Court of India and Govt. of Odisha the said mines was revised under the Rule 20 (6) of MC Rules, 2016 vide its proceeding dated 17.11.2022.
9. In pursuance of the Hon'ble Supreme Court order dated 02.08.2017 in WP(C) no. 114/2014, Director of Mines, Govt. of Odisha vide its letter dated 17.05.2022 raised the "Feasibility Report for Raika Iron and Manganese Ore Mines of S.D. Sharma over area 26.243 Ha, Village – Raika, Barbil, Dist-Keonjhar, Odisha. According to it, the demand for production of excess Iron & Manganese Ore beyond permissive quantity and without obtaining environmental clearance during the year 2000-01 to 2009-10 (as accessed by CEC) amounts to ₹4,37,99,592/- along with 12% interest. Accordingly, the project proponent deposited the demand amount in this regard i.e., ₹4,37,99,592/- along with 12% interest on dated 18.05.2022. Additionally, as suggested by Govt. of Odisha the proponent also paid another 12% interest amount of Rs 1,26,66,079/- on dated 20.10.2022.
10. **List of Statutory Clearances obtained earlier -**
  - a) The mining lease of Raika Iron & Manganese Ore of Shri S.D. Sharma over an extent area of 26.243 Ha at village Raika under Champua sub-division of Keonjhar district granted and executed on 01.11.1979. As per Section 8A (3) of the MMDR Act 2015, the lease is deemed to have been extended up to a period ending on the 31.10.2029.

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- b) Approved Mining Plan up to 31.03.2028 vide No. RMP 6295/30ORI361003 dated 05.07.2023 and cleared all the due in pursuance of the Supreme Court order dated 02.08.2017 in WP(C) no. 114/2014.
- c) After revival of lease, the forest diversion proposal has been initiated on dated 12.09.2023 and submitted over an area of 17.032 Ha vide proposal no. FP/OR/MIN/QRV/444094/2023 on 09.10.2023 which is under process.
- d) Lessee has already paid the NPV of amount ₹1,06,77,330/- on dated 12.07.2010 and given an under taking for payment of differential NPV.
11. **Location and connectivity:** Raika Iron & Manganese Ore Mines is coming under village Raika under Champua sub-division of Keonjhar District. The geo-coordinates of project site is Latitude: 22° 03' 57.419" N - 22° 04'23.301" N and Longitude: 85° 24'55.489" E - 85°25' 13.892" E. The project falls under Survey of India bearing Topo sheet no. 73 F/8. The mining lease area is approachable from Bhadrāsahi - Barajamda State High way which is further connected to NH-520 (2.07 km in south direction). The nearest habitation is Raika village at a distance of 0.05km in the eastern direction. The nearest water bodies are Jateswar Nalla at 0.9km, Karo River at 6.9km (NW) and a no. of ponds within 10km radius. The nearest airport connectivity is Tonto airstrip at 4.55km in WSW direction, Rourkela Domestic Airport at 64.34km in WNW direction and Bhubaneswar-Biju Patnaik International Airport at 203.14km. The reserve forest areas nearby are Thakurani Reserve Forest (0.04 Km in SSW direction). Sidhamath RF at 2.04km distance, Baitarani RF at 3.41km distance, Uliburu RF at 5.91km distance and Chamakpur RF at 7.64km distance. There are no Eco-sensitive areas, Biosphere reserve, National park & wildlife sanctuary within 10km radius.
12. **Baseline study conducted:** Baseline study was conducted during March, 2023 to May, 2023.
- a) **Ambient Air monitoring:** -Ambient Air Quality was monitored at eight sampling stations and the monitoring were conducted for a period of three months. PM<sub>10</sub> is within range of 45.6µg/m<sup>3</sup> to 92.4 µg/m<sup>3</sup>, PM<sub>2.5</sub> is within range of 25.6µg/m<sup>3</sup> to 52.6 µg/m<sup>3</sup>, SO<sub>2</sub> is within range of 4.0µg/m<sup>3</sup> to 19.2 µg/m<sup>3</sup> and NO<sub>x</sub> is within range of 10.8 µg/m<sup>3</sup> to 25.6 µg/m<sup>3</sup>.
- b) **Ground Water quality monitoring:** Groundwater quality parameters were monitored at 7 locations. pH is within range of 7.12-7.85, Iron content is within range of 0.36-0.52mg/l, SO<sub>4</sub> is within range of 5.08-6.02mg/l, NO<sub>3</sub> is within range of 1.62-1.81mg/l, TDS is within range 214-273mg/l.
- c) **Surface Water quality monitoring:** Surface water quality parameters were monitored at 7 locations. pH is within range of 6.98-7.92, Iron content is within range of 0.18-0.29mg/l, SO<sub>4</sub> is within range of 8.62-13.8mg/l, NO<sub>3</sub> is within range of 2.42-3.91mg/l, TDS is within range 126-170mg/l.
- d) **Ambient Noise monitoring:** Noise level in the study area was monitored at three sites. Noise levels vary from 57.2 dB(A)-71.8 dB(A) during daytime and 48.5 dB(A)-68.6 dB(A) during night time.
- e) **Soil monitoring:** Soil samples were collected from three locations. The pH of the samples ranged from 6.14-6.36 and the texture varies from Clay to Sandy Loamy. The NO<sub>3</sub> concentration varied from 162-170mg/Kg.

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13. **Water requirement:** The total water requirement shall be 25 KLD.

14. **Rainwater harvesting details:** They have not proposed for any rainwater harvesting provision.

15. **Products generated:**

Units	Products and By products	Existing	Additional	After Expansion
	Iron Ores	Nil	1.0 Lakh Ton Iron Ore/Annum	1.0 Lakh Ton Iron Ore/Annum
	Manganese ore	Nil	1000 Ton Manganese Ore/Annum	1000 Ton Manganese Ore/Annum

16. **Mining Plan Details:**

a) **Details of Minerals:** Iron ore will be extracted from the mines. There is enhance in production of iron ore to maximum ROM of 30,00,060 (3 million) TPA (23,15,460 TPA of +55% grade iron ore and 6,84,600 TPA of +45 to +55% grade iron ore).

b) **Method of Mining:** Opencast mechanized method of mining will be adopted with deployment of machines like 100mm DTH drill, 2.5m<sup>3</sup> capacity excavators, 30t capacity dumpers etc and on 8 hourly single shift basis. The bench height and width will be maintained at 3m and 5m-15m respectively. The slope of individual bench will be vertical (80%) & horizontal (37%). The ground water depth is 540mRL.

c) **Details of crushers/screen/beneficiation plant if any with capacity and numbers, water requirement for the project, plantation details, greenbelt details:** ROM will be upgraded in the ML area in respect of size and grade by way of dry crushing and screening. There is proposal to install Jaw Crushers of 150 TPH capacity, mobile screening plant of capacity 200TPH.

d) **Land use as per mining plan at the end of plan period and at conceptual stage:**

Sl. No	Particulars	Present Land use (Ha)	Plan period Land use (Ha)	Conceptual Land Use (Ha)
1	Area under Mining	4.82	10.32	11.031
2	Over burden/Waste Dumping	1.26	2.01	3.016
3	Mineral storage/Stacking yard and processing yard	0.71	1.92	3.099
4	Roads	2.0	2.0	1.46
5	Infrastructure	0.01	0.01	0.119
6	Safety Zone	1.70	1.70	1.70
	<b>Sub-total</b>	<b>10.50</b>	<b>17.96</b>	<b>20.425</b>
7	Un-disturbed	15.743	8.283	5.818
	<b>Total</b>	<b>26.243</b>	<b>26.243</b>	<b>26.243</b>

17. **Power Requirement & solar power details:** Power will be sourced from State grid. However, a 500 KVA DG set will be there for any emergency.

18. **Solid waste generation:** During the process of mining for the plan period of 5 years from 2023-24 to 2027-28, the generation of waste materials will be 30961m<sup>3</sup>.

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19. **Mitigation of solid waste produced:** OB Waste will generated from both Iron and Manganese quarry which will be eventually stored at the designated places as per the approved Mining Plan. In plan period waste will be utilized for road maintenance. Further, in conceptual period it will be used for back filling.
20. **Greenbelt Development:** The total area allocated for greenbelt 1.70 Ha.
21. **Total Employment:** With the enhancement in production there will be scope for additional 52 persons (at present the mines has 52 persons as direct employee) in the leasehold area to carry on the mining and ancillary operations in two shifts. No colony is planned as most of the workers will be from local villages.
22. **Project Cost:** Estimated Capital cost of the project is around Rs.42.416crores.
23. **Violation Details:**
- i) As per the above proceeding of Govt. of Odisha, Lessee has to take all the statutory clearances like approved Mining Plan, Environmental Clearance and forest clearance towards execute of supplementary lease deed.
  - ii) At present the Lessee has valid Mining Plan and cleared all the due in pursuance of the Supreme Court order dated 02.08.2017 in CWP no. 114/2014.
  - iii) Further, the mine produce excess of Iron & Mn (as accessed by CEC) beyond permissive quantity and without obtaining prior environmental clearance during the year 2000-01 to 2009-10.
  - iv) Therefore, in pursuance of the Supreme Court order dated 02.08.2017 in WP(C) no. 114/2014, Director of Mines, Govt. of Odisha vide its letter dated 17.05.2022 raised the demand for production of excess Iron & Manganese Ore beyond permissive quantity and without obtaining environmental clearance during the year 2000-01to 2009-10 (as accessed by CEC) of Rs 4,37,99,592/- along with 12% interest. Accordingly, the project proponent deposited the demand amount in this regard i.e., Rs 4,37,99,592/- along with 12% interest on dated 18.05.2022. Additionally, as suggested by Govt. of Odisha the proponent also paid another 12% interest amount of Rs 1,26,66,079/- on dated 20.10.2022.
  - v) The proponent has Suo-moto admitted violation and applied for violation ToRs.
24. **Environment Consultant:** The Environment consultant M/s EHS 360 Labs Pvt. Ltd., along with the proponent made a presentation on the proposal before the Committee.
25. The proponent has requested for exemption of public hearing as they have already conducted public hearing for the same proposal on 25.04.2012.
26. The SEAC in its meeting held on dated 20-10-2023 recommended the following:
- A. The proponent may be asked to submit the following for further processing of ToR application:**
- i) Latest forest clearance obtained from the concerned DFO.
  - ii) Copy of wildlife conservation plan for the wildlife in nearby Reserve Forests.

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- iii) The details of the Net Present Value (NPV) compensation paid for operating the mines without Environmental Clearance.
- iv) Documents in support of mining lease obtained during 1979 to 2009.
- v) Detailed justification as to why public hearing shall be exempted.

**B. Following specific ToRs may be prescribed while issue of Terms of References:**

- i) Details of the greenbelt coverage area. Care should be taken to cut minimum no. of trees and transplanting should be followed.
- ii) Compliance to conditions recommended in study report conducted by NEERI.
- iii) Traffic management study report vetted by institute of repute.
- iv) Details of parking plaza & road connectivity to the Mining Lease area.
- v) Detailed layout showing the location of each unit w.r.t Environmental aspects such as OB Dump, mining quarry, Garland Drain, Check Dams etc.
- vi) Detailed note on fly rock management, slope stability and scientific study for vibration.

27. The proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
1.	Latest forest clearance obtained from the concerned DFO.	Forest diversion proposal has been initiated on dated 12.09.2023 and submitted over an area of 17.032 Ha vide proposal no. FP/OR/MIN/QRY/444094/2023 on 09.10.2023. Accordingly PSC meeting has been conducted on dated 19.10.2023 and committee asked to submit the CA land details for further process. Thereafter Collector Keonjhar has initiated the process towards allocation of CA land vide its letter dated 03.11.2023. Further, DFO also initiated the process towards DGPS map authentication and Tree enumeration etc. The details are attached as <b>Annexure-1</b> .	-
2.	Copy of wildlife conservation plan for the wildlife in nearby Reserve Forests.	Project Proponent has requested to DFO, Keonjhar to prepare and approve the Site Specific Wildlife Conservation Plan. The copy of the same is attached as <b>Annexure-2</b> .	-
3.	The details of the Net Present Value (NPV) compensation paid for operating the mines without Environmental Clearance.	Lessee has already paid the NPV of amount Rs 1,06,77,330/- on dated 12.07.2010 and given an under taking for payment of differential NPV if any. Detailed attached as <b>Annexure-3A</b> . In pursuance of the Supreme Court order dated 02.08.2017 in WPI no.	-

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
		114/2014, Director of Mines, Govt. of Odisha vide its letter dated 17.05.2022 raised the demand for production of excess Iron & Manganese Ore beyond permissive quantity and without obtaining environmental clearance during the year 2000-01 to 2009-10 (as accessed by CEC) of Rs 4,37,99,592/- along with 12% interest. Accordingly, the project proponent deposited the demand amount in this regard i.e., Rs 4,37,99,592/- along with 12% interest on dated 18.05.2022. Additionally, as suggested by Govt. of Odisha the proponent also paid another 12% interest amount of Rs 1,26,66,079/- on dated 20.10.2022. Payment Detailed attached as <b>Annexure-3B</b> .	
4.	Documents in support of mining lease obtained during 1979 to 2009.	Mining lease for Iron & Mn ore over an extent area of 26.243 Ha in village Raika under champua subdivision of Keonjhar district granted in favour of M/s Utkal Minerals for a period of 20 years from 01.11.1979 to 31.10.1999 and was subsequently transferred to Sri Shiv Dutt Sharama through deed of transfer executed on 25.06.1985 for the remaining unexpired period of the said mining lease. Further, the Lessee had filed the First application for Renewal of Mining Lease (RML) on 28.10.1998 within due time and it was operating at that time under deemed renewal. Lease deed and Transfer deed is attached as <b>Annexure-4</b> . Further, As per Section 8A (3) of the MMDR Act 2015, the lease is deemed to have been extended up to a period ending on the 31.10.2029.	-
5.	Detailed justification as to why public hearing shall be exempted.	Details of Justification for exemption of Public Hearing is attached <b>Annexure-5</b> .	-

After detailed deliberations, the SEAC noted that the proponent has gone for excess production of Iron Ore without prior Environmental Clearance under EIA Notification, 2006. Further, 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

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Notification, 2006 and recommended for issuing Standard Term of Reference as per Annexure- A along with the following specific Terms of Reference 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 as per para-12 of Standard Operating Procedure (SoP) for Identification and handling of violation cases under EIA Notification 2006 in compliance to order of Hon'ble National Green Tribunal in O.A. No.34/2020 WZ issued by MoEF&CC, Govt. of India vide OM No. 22-21/2020-IA.III, dated 07.07.2021 and OM No. 22-21/2020-IA.III (E 138949), dated 28.01.2022. 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) The proponent shall pay the penalty for such violation as per SoP for violation issued vide OM F No. 22-21/2020/IA. III, dtd. 07.07.2021 of MoEF & CC, Govt. of India.
- (iv) 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.
- (v) 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.
- (vi) 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.
- (vii) Public hearing has already been conducted for the proposal earlier on 25.04.2012. For this reason, conducting a fresh Public Hearing has been exempted. However, compliance to issues raised by the public during public hearing conducted on 25.04.2012 is to be furnished with EIA/EMP report.
- (viii) One season fresh base line data to be generated for EIA/EMP preparation.
- (ix) To submit the lease sketch approved by DMG, at the time of presentation before SEAC.
- (x) Fund allocation for Corporate Environment Responsibility (CER) shall be made as per Ministry's O.M. No. 22-65/2017-IA.III dated 1<sup>st</sup> May, 2018 for various activities therein. The details of fund allocation and activities for CER shall be incorporated in EIA/EMP report.
- (xi) Detailed hydrological study to be carried out in core and buffer zone of the project as per the recent GEC guidelines 2015.
- (xii) Approved mining plan is to be submitted.

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- (xiii) The following information to be submitted.
- a) Compliance of mining plan, including waste and OB dump management, mine closure plan etc.
  - b) Compliance to Common cause judgment
  - c) Status of R&R
  - d) Compliance of plantation
  - e) Status of complaints/ court cases/legal action
  - f) Any other relevant environmental issue / parameter.
  - g) The following studies be undertaken by domain experts, viz:
    - Blast vibration study if feasible with trial blasts
    - Socio economic study of the neighbouring habitation
    - Biodiversity study with audit mechanism.
    - Slope stability study for both mines and OB /waste dumps.
    - Surface runoff management along with rainwater harvesting and ground water recharge including the design of drainage structures.
    - Traffic density study, both inside the mines and at haulage roads, intersecting points of haulage road with public road.
    - Hydrology study: The study findings and the mitigation measures thereof to be submitted
- (xiv) Cost of the CER calculated shall be utilized for the concerns of the people in terms of health, education, and infrastructure and environment protection. Project Proponent also shall include the budget for the betterment of schools nearby and to facilitate the online education system by providing Wi-Fi connectivity and desktops/tablets.
- (xv) The project proponent should provide in the EIA Report details of all the statutory clearances, permissions, no objection certificates, consents etc. required for this project under various Acts, Rules and regulations and their status or estimated timeline after grant of EC.
- (xvi) The project proponent should submit the revenue plan for mining lease, revenue plan should be imposed on the satellite imaginary clearly demarcate the Govt. land, private land, agricultural land etc.
- (xvii) The project proponent should submit the real-time aerial footage & video of the mining lease area and of the transportation route. The project proponent should submit the detailed plan in tabular format (year-wise for life of mine) for afforestation and green belt development in and around the mining lease. The project proponent should submit the number of saplings to be planted, area to be covered under afforestation & green belt, location of plantation, target for survival rate and budget earmarked for the afforestation & green belt development. In addition to this the project proponent should show on a surface plan (5-year interval for life of mine) of suitable scale the area to be covered under afforestation & green belt clearly mentioning the latitude and longitude of the area to be covered during each 5 years. The

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capital and recurring expenditure to be incurred needs to be submitted. Presently in India there are many agencies which are developing forest in short interval of time. Thus, for the plantation activities details of the experts/agencies to be engaged needs to be provided with budgetary provisions.

- (xviii) The project proponent should submit the quantity of surface or ground water to be used for this project. The complete water balance cycle needs to be submitted. In addition to this PP should submit a detailed plan for rain water harvesting measures to be taken. PP should submit the year wise target for reduction in consumption of the ground/surface water by developing alternative source of water through rain water harvesting measures. The capital and recurring expenditure to be incurred needs to be submitted.
- (xix) The project proponent should clearly bring out the details of the manpower to be engaged for this project with their roles /responsibilities/designations. In addition to this the project proponent should mention the number and designation of person to be engaged for implementation of environmental management plan (EMP). The capital and recurring expenditure to be incurred needs to be submitted.
- (xx) The project proponent should submit the year-wise, activity wise and time bound budget earmarked for EMP, occupational health surveillance & Corporate Environmental Responsibility. The capital and recurring expenditure to be incurred needs to be submitted.
- (xxi) The project proponent should submit the measures/technology to be adopted for prevention of illegal mining and pilferage of mineral. The project proponent should submit the detailed mineralogical and chemical composition of the mineral and percentage of free silica from a NABL/MoEF&CC accredited laboratory.
- (xxii) The project proponent should clearly show the transport route of the mineral and protection and mitigative measure to be adopted while transportation of the mineral. The impact from the center line of the road on either side should be clearly brought out supported with the line source modelling and isopleth. Further, frequency of testing of Poly Achromatic Hydrocarbon needs to be submitted along with budget. Based on the above study the compensation to be paid in the event of damage to the crop and land on the either side of the road needs to be mentioned. The project proponent should provide the source of equations used and complete calculations for computing the emission rate from the various sources.
- (xxiii) The project proponent should clearly bring out that what is the specific diesel consumption and steps to be taken for reduction of the same. Year-wise target for reduction in the specific diesel consumption needs to be submitted.
- (xxiv) The project proponent should bring out the awareness campaign to be carried out on various environmental issues, practical training facility to be provided to the environmental engineer/diploma holders, mining engineer/diploma holders, geologists, and other trades related to mining operations. Target for the same needs to be submitted.
- (xxv) The budget to be earmarked for the various activities shall be decided after perusal of the Standard EC conditions.
- (xxvi) The project proponent should ensure that only NABET accredited consultant shall be engaged for the preparation of EIA/EMP Reports. The project proponent shall ensure that

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- accreditation of consultant shall be valid during the collection of baseline data, preparation of EIA/EMP report and during the appraisal process. The project proponent and consultant should submit an undertaking the information and data provided in the EIA Report and submitted to the SEIAA, Odisha are factually correct and the project proponent and consultant are fully accountable for the same.
- (xxvii) The project proponent should submit the photograph of monitoring stations & sampling locations. The photograph should bear the date, time, latitude & longitude of the monitoring station/sampling location. In addition to this the project proponent should submit the original test reports and certificates of the labs which will analyze the samples.
  - (xxviii) The percentage of iron in the final waste generated and not used as iron ore or its upgradation.
  - (xxix) Compliance to NEERI recommendations.
  - (xxx) "Zero discharge" management & "Zero Dust Re-suppression" management with SOP be submitted.
  - (xxxi) Internal roads, drain management with network of the drain, retaining walls and settling tanks with ETPs be submitted.
  - (xxxii) Details of air quality monitoring stations of the area and additional stations at entry and exit of mines and haulage roads, habitation to be considered.
  - (xxxiii) Construction and perennial maintenance of haulage road with details of plantation and the species thereof to be submitted.
  - (xxxiv) Forest Clearance details with copy of all Forest Clearance.
  - (xxxv) Status of complaints/ court cases/legal action regarding to lease along with a detailed write up indicating case no., purpose of the case etc.
  - (xxxvi) Copy of lease document.
  - (xxxvii) Details of waste management i.e. composition and nature of waste generated, tabulated form showing year wise waste generation, usage and storage.
  - (xxxviii) Project Proponent shall consider developing a good nursery in nearby village for production of saplings of 4-6 feet height for planting in safety zone, sides of external haulage roads and distribution among villagers for planting in their private land/ community land. The nursery may be developed by company on their own or in collaboration with forest department. A detailed proposal to this effect shall be submitted. The proponent shall ensure to use organic fertilizer in the nursery.
  - (xxxix) Comprehensive water management, water balance with water harvesting and its reuse both monsoon and non-monsoon period.
  - (xl) STP plan with design with location in the layout map for domestic waste water treatment.
  - (xli) Provision of solar power (percentage wise) with detail plan.
  - (xlii) To submit the network with dimension of concrete cement roads inside the mining lease area and haulage road.

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- (xliii) To submit parking plaza at entry and exit of the mines with basic amenities.
- (xliv) Plan and SoP to be submitted for water sprinkling inside the mines and outside in haulage road including regular vacuum cleaning and Zero Dust Resuspension system to completely mitigate and arrest fugitive dust emission.
- (xlv) Wagon drill blasting must be avoided- to confirm.
- (xlvi) Details of grade of Fe to be mined, cutoff grade, management of off grade, quantity of each year wise and the dumping or storage plan of off grade and wastes to be provided.
- (xlvii) Total water management including domestic use w.r.t sourcing from borewell, rain water harvesting and recycling of waste water from ETP/STP, both for monsoon and non-monsoon be submitted.
- (xlviii) Measures to be taken for arresting and mitigation of occupational health hazard including identification of the same, both for employees and nearby/surrounding habitation.
- (xlix) Year wise waste/OB management with reference to generation and utilization in consideration with dynamic movement of inventory indicating dump area and dimension of storage be submitted.
- (l) Details of grades to be produced, to be discarded as waste and dumps and the utilisation plan.
- (li) Gochhar land, if any, need to be dereserved as per the applicable laws by appropriate authority.
- (lii) Silt Management with procedure for desiltation if any as a contingency measure.
- (liii) Slope of mines and dump vis- a- vis the position of water bodies.
- (liv) Protection and conservation of Endangered, Threatened and Near Threatened living species in the mining lease area.
- (lv) Adoption of ISO 14001& OHSAS
- (lvi) The PP need to submit process flow sheet details with material balance of product, rejects, requirement of water, particle size distributions of product and rejects. The PP needs to carry out amenability studies to determine all the required information by any reputed institution.

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#### ITEM NO. 04

**PROPOSAL OF ENVIRONMENTAL CLEARANCE OF M/S NATIONAL ENTERPRISES FOR ENHANCEMENT IN PRODUCTION OF IRON ORE FROM 0.41 MILLION TPA TO 3 MILLION TPA ROM WITH TOTAL EXCAVATION OF 4.073 MILLION TPA (ROM OF 3 MILLION TPA + 1.073 MILLION TPA WASTE) AND SETTING UP A 100 TPH JIGGING & WASHING PLANT, TWO MOBILE JAW CRUSHERS OF 200 TPH CAPACITY EACH, TWO MOBILE CONE CRUSHERS OF 200 TPH CAPACITY EACH & TWO VIBRATORY DRY SCREEN PLANTS OF 200 TPH CAPACITY EACH IN SANINDPUR IRON & MANGANESE MINES OVER AN AREA OF 70.917 HA LOCATED AT VILLAGE- SANINDPUR UNDER BLOCK & TEHSIL- KOIDA, SUBDIVISION- BONAI, DIST – SUNDARGARH OF SRI CHARANJIT SINGH GREWAL – EC.**

1. This proposal is for Environmental Clearance of M/s National Enterprises for enhancement in production of Iron Ore from 0.41 million TPA to 3 million TPA ROM with total excavation of 4.073 million TPA (ROM of 3 million TPA + 1.073 million TPA waste) and setting up a 100 TPH Jigging & Washing Plant, two mobile Jaw Crushers of 200 TPH capacity each, two mobile Cone Crushers of 200 TPH capacity each & two Vibratory Dry Screen Plants of 200 TPH Capacity each in Sanindpur Iron & Manganese Mines over an area of 70.917 ha located at Village- Sanindpur under Block & Tehsil- Koida, Subdivision- Bonai, Dist – Sundargarh of Sri Charanjit Singh Grewal
2. **Category:** This project falls under Category "B" or Schedule 1(a): Mining of Mineral & 2(b): Mineral Beneficiation as per EIA Notification dated 14<sup>th</sup>Sept, 2006 and its amendments.
3. **TOR details:** Terms of Reference was issued by SEIAA, Odisha vide letter no: - SIA/OR/MIN/76663/2022 on 03.11.2022 for the proposed project.
4. Sanindpur Iron & Manganese Mines over an area of 70.917 Ha. has obtained Environmental Clearance from MoEF&CC, Govt. of India, vide letter no. J-11015/375/2008-IA.II(M), dated 28.06.2013 for production of 410,000 (0.41 million) TPA of iron ore.
5. **Public hearing details:** The Public hearing was conducted successfully on 05.04.2023 at 10.00 AM in the weekly market ground of Sanindpur village.
6. **List of Statutory Clearances obtained earlier -**
  - e) Sanindpur Iron & Manganese Mines lease area has 54.399 ha of forest land.
  - f) MoEF&CC, Govt. of India has granted Stage-II Forest Clearance for 54.399 ha of forest land including safety zone of 6.841 ha vide letter no. 8-10/2015-FC, dated 06.10.2020.
  - g) The mines has obtained Consent to Operate from SPCB, Odisha valid upto 31.03.2024 for production of 0.41 million TPA of iron ore.
  - h) Permission letter has been obtained from Water Resources Deptt., Govt. of Odisha for use of 50000 litres/day (0.02cusec) of surface water from Teheri nala.
  - i) The modification of Review of Mining Plan for enhancement of production capacity from 0.41 million TPA to 3 million TPA due to change in working proposals for the balance plan period from 2022-23 to 2024-25 is approved by IBM Regional Office, Bhubaneswar vide letter no. MRMP/A/36-ORI/BHU/2021-22, dt. 23.03.2022.
7. **Location and connectivity:** Sanindpur Iron & Manganese Mines is coming under village Sanindpur of Bonai Sub-division in Sundargarh District. It is located at a distance of 6km from Koida Town which is in WSW direction from the project site. A concrete road connecting Rugudihi

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(11 km from project site in north direction) to Koida via Katasahi & Sanindpur runs at a distance of 350m from the proposed mines. Both Rugudihi & Koida are located on NH-520. Sundargarh, the district headquarter and Bonai, the sub-divisional headquarter are 190km (in West direction) & 58km (in SW direction) away respectively. State capital Bhubaneswar is 290km away; Barbil, the nearest railhead of SE railway is situated at a distance of 30km in NE direction and Barsuan railway siding is at a distance of 35km in SW direction. Veer Surendra Sai Airport, Jharsuguda is 180km away whereas Biju Patnaik International Airport, Bhubaneswar is 290km in South of the project site. Village Sanindpur is located 500m away in the west of the Mining Lease area. The nearest water bodies are Teheri nallah and Suna nallah, which merges at the southern boundary of the lease area and passes along the eastern side of the mining lease. The project falls under Survey of India bearing Topo sheet no. F45N5 (73 G/5). Similipal Biosphere Reserve is 71.1km from the project site.

8. **Baseline study conducted:** Baseline study was conducted during Post-Monsoon season of 2022 i.e. from 1<sup>st</sup> October 2022 till 31<sup>st</sup> December, 2022.
- f) **Ambient Air monitoring:** Ambient Air Quality was monitored at eight sampling stations, which were selected taking into account the predominant wind direction, population zone, sensitive receptors like reserved forests etc., and the monitoring were conducted for a period of three months with the frequency of monitoring for 2 days per week at each sampling station. All the 12 air quality parameters were coming within the range as specified by CPCB. PM<sub>10</sub> is within range of 64.1 µg/m<sup>3</sup> to 79.4 µg/m<sup>3</sup>, PM<sub>2.5</sub> is within range of 31.2 µg/m<sup>3</sup> to 43.9 µg/m<sup>3</sup>, SO<sub>2</sub> is within range of 4.14 µg/m<sup>3</sup> to 8.98 µg/m<sup>3</sup> and NO<sub>x</sub> is within range of 10.18 µg/m<sup>3</sup> to 25.44 µg/m<sup>3</sup>.
  - g) **Water quality monitoring:** Water quality parameters of Five Surface and Five Ground water resources within 10km radius of the study area was studied to assess the water environment and evaluate anticipated impact of the project. The water samples were collected and analyzed for physical, chemical and microbiological characteristics as per CPCB guidelines and approved methods in the NABL and MoEF&CC accredited laboratory. The result of all the surface & ground water samples collected shows that the water quality are within the permissible norms stipulated by CPCB.
  - h) **Ambient Noise monitoring:** Noise level in the study area was monitored at eight sites. The measurements were carried out continuously for the 24-hour period. Noise levels vary from 48.59 to 67.48 dB(A) during daytime and 37.46dB(A) to 54.8 dB(A) during night time. It is, therefore, concluded that the noise levels within the habitation/ residential area are well within the specified standards.
  - i) **Soil monitoring:** Soil samples were collected from five locations including one from project site; from 30 cm depth with a stainless steel scoop. The pH of the samples ranged from 6.28 to 6.84 which is slightly acidic for agricultural soils and the bulk density varies from 1.24 to 1.38 gm/cc. The soils are of medium fertility and may require addition of fertilizers during plantation and greenbelt development.
9. **Water requirement:** The total water requirement shall be 75 m<sup>3</sup>/day for mining operation and 440 KLD for Jigging Plant operation. Out of the 75 KLD water, 15 KLD will be used for drinking and washing purpose, 55 KLD for dust suppression in haul road, screening, crushing area & wheel washing and 5 KLD will be consumed by plantation. The company has permission to draw 50 KLD water from Teherai nala, balance 25 KLD water requirement shall be fulfilled from ground water

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source; after 1 year rain water harvesting ponds shall fulfil the water requirement for non-domestic uses.

10. **Wastewater details:** About 11 KLD of waste water will be generated from the office, Security camp & washing area. Hence, a 12 KLD STP based on MBBR technology will be installed to treat the waste water. The treated water will be used in plantation and dust suppression; the sludge will be used as manure in plantation.

11. **Rainwater harvesting details:** They have planned to implement the techniques of Rain Water Harvesting (RWH) over the roofs of offices, rest sheds and by making percolation tanks in Sanindpur Iron & Manganese Mine to cater to the needs of daily water requirement. The mine has one rain water collection pond of 10m long, 8m wide and 2m deep. Now with the proposed expansion, it has been planned to expand the existing pond to 30m length X 30m width X 3m depth and construct one more larger pond of 50m long X 80m wide X 4m deep to store rain water collected from mining pit and mineral storage area.

12. **Mining Plan Details:**

e) **Year Wise Production of Iron Ore :**

Production Year	Saleable Ore (+55% Fe) in Ton	Mineral Rejects (45% -55% Fe) in Ton	ROM of Iron ore production in Ton	OB Quantity in cum
3 <sup>rd</sup> Year (2022-23)	7,00,560	4,35,575	11,36,135 (5,82,500 cum)	1,98,250 (3,96,500 Ton)
4 <sup>th</sup> Year (2023-24)	17,83,740	4,35,050	22,18,790 (10,98,000 cum)	3,79,800 (7,59,600 Ton)
5 <sup>th</sup> Year (2024-25)	23,04,330	6,95,800	30,00,130 (14,94,900 cum)	5,36,470 (10,72,940 Ton)

f) **Details of Minerals:** Iron ore will be extracted from the mines. There is enhance in production of iron ore to maximum ROM of 30,00,060 (3 million) TPA (23,15,460 TPA of +55% grade iron ore and 6,84,600 TPA of +45 to +55% grade iron ore).

g) **Method of Mining:** Opencast mechanized method of mining will be adopted with drilling & blasting, on double shift basis with the deployment of 30m/h DTH drill, 5T capacity excavators, 35t capacity dumpers /tippers. The bench height will be maintained up to 9 m and width up to 10 m. The slope of individual bench will be 80° and overall slope of the pit will be 42°. Benches will be formed in a top downward manner. It has been proposed to blast maximum up to 6m high benches to achieve optimum results in term of fragmentation, economy and minimum impact on the surrounding environment. So the depth of hole in this mine will be 10% more i.e. up to 6.6 m. Explosives to be used in ore zone are of Class-II booster & column charge with accessories like OD, Nonel, Excel, safety fuse & detonating cord. Blasting pattern will be staggered (V type) with delay interval of 25 millisecond. Power factor in development /waste has been assumed to be 7kg /t. Secondary blasting will not be required.

h) **Details of crushers/screen/beneficiation plant if any with capacity and numbers, water requirement for the project, plantation details, green belt details:** ROM will be upgraded in the ML area in respect of size and grade by way of dry crushing and screening. Dry processing plant in the ML area consists of crushing & screening plants used for iron ore breaking & sizing.

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There is proposal to install two mobile Jaw Crushers of 200 TPH capacity each, two mobile Cone Crushers of 200 TPH capacity each & two Vibratory Dry Screen Plants of 200 TPH Capacity each. Apart from these, there is proposal to install a 100 TPH Jigging & Washing Plant within the lease, based on Washing & Jigging technology to beneficiate of 0.3 million Tons per Annum (MTPA) of low grade Iron ore.

i) **Number of top soil dumps with area and capacity, no. of waste /reject dump with area and capacity during the plan period and at the conceptual stage, backfilling plan if any:** No top soil will be generated in the mining process as the top surface is lateritic. Solid waste to the tune of 8,96,280m<sup>3</sup> (maximum annual production) will be produced and shifted to the dump-III, which is already spread over 3.65 ha. Conceptually the dump occupies 5.951 ha. and maintain the height up to 37m in five tires. Conceptually, 50% of the waste material will be used in backfilling of mined out area and balance to be used in road maintenance. During the 4th year of mining, backfilling will be started to reclaim 29.32 ha, balance 12.301 ha. will be converted to water body with accumulated rain water

j) **Land use as per mining plan at the end of plan period and at conceptual stage:**

Sl. No.	Head	At present (Ha.)	At the end of SOM Period (Ha.)	At the end of conceptual period (Ha.)
a)	Area under Mining	19.160	33.558	44.990
b)	Overburden / Waste dump	5.060	7.367	7.367
c)	Mineral storage	14.957	14.957	2.137
d)	Infrastructure (Office, canteen, rest shelter, weigh bridge, etc )	1.570	1.570	1.570
e)	Road	1.960	2.212	2.212
f)	Beneficiation Plant area	---	3.000	3.000
g)	Others (settling pond, check dam, garland drain, etc)	0.101	1.628	1.628
	<b>Sub-Total</b>	<b>42.808</b>	<b>64.292</b>	<b>62.904</b>
h)	Green belt in safety zone	1.350	3.850	3.850
i)	Plantation in untouched area	1.840	1.840	1.840
j)	Untouched area	24.919	0.935	2.323
	<b>Total</b>	<b>70.917</b>	<b>70.917</b>	<b>70.917</b>

13. **Power Requirement & solar power details:** The electricity requirement will be about 40 KW-hr/day and this requirement will be fulfilled by TPWODL (TATA Power Western Odisha Distribution Limited). The company proposed to utilize solar power to the extent possible in order to utilize the renewable source of energy. There is a proposal to install 80 nos. of Solar Lighting Poles (10 near the entry gate, 10 near the exit gate and remaining along the lease boundary). These poles will have individual Solar PV Panel to generate 72 Watt energy, if only 4 hours of clear sunlight available throughout the day time.

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14. **Solid waste generation:** During the process of mining, the only solid waste material to be produced is the top lateritic cover i.e. over burden. The existing dumps have waste materials which are of grade below 45% Fe of laterite, shale, BHJ, BHQ, etc. Solid waste to the tune of 8,96,280m<sup>3</sup> (maximum annual production) will be produced & shifted to the dump-III. Conceptually, 50% of the waste material will be used in backfilling of mined out area and balance to be used in road maintenance. Tailings of quantity 31,659 TPA will be generated from the 100 TPH Capacity Mineral Beneficiation Plant based on Washing & Jigging technology to beneficiate of 0.3 million TPA of low grade Iron ore.
15. **Mitigation of solid waste produced:** The dump will be surrounded by retaining wall of 1.5m height & 1m width. Any rain cut which may develop in dump slope is proposed to be checked by no. of small check dams. Garland drains at the toe of the dump will be connected to settling tank. Coir matting will be tried to stabilize the waste dump slopes. Gradually reclamation of the entire, waste/overburden dump will be taken up. Three nos. of Slurry Ponds shall be provided to take care of the thickener underflow. The clarified water from the Slurry Pond shall be re-circulated back to both the Circuit. 31,659 TPA of tailing sludge will be sent to the Sludge bay (Tailing Sludge). The tailing sludge will be dewatered using filter press, the end press mud will be dried in plant area and stored in the Tailing storage area provided. The Dried tailings shall be used for cement industries in manufacturing of cement and in the Brick Manufacturing.
16. **Greenbelt Development:** Till now 1.35ha of the safety zone is covered by 2000 plantations (but survivability is 50% to 60% due to lateritic top); plantation within the lease area has started only in the year 2020-21. During the conceptual period, 58,300 nos. of plants will be planted on the backfilled area of 29.32ha. Apart from it, 7.367 ha of the conceptual dump area will be terraced & plantation will be developed on each terrace; 2.137ha of mineral storage area, 3ha of beneficiation area and 4.2ha Greenbelt area along the Suna Nala will also be covered under plantation.
17. **Total Employment:** With the enhancement in production there will be scope for additional 52persons (at present the mines has 52 persons as direct employee) in the leasehold area to carry on the mining and ancillary operations in two shifts. No colony is planned as most of the workers will be from local villages.
18. **Project Cost:** Estimated Capital cost for the project is 40 crores. The capital cost of EMP after the proposed increase in production is calculated to be Rs 400 lakhs & recurring cost is Rs 90 lakhs. Based on demands in Public Hearing & assessment of local situation, a sum of Rs 35 lakhs will be spend under CSR activities in first two years and Rs 28 lakhs shall be spend every year under developmental activities.
19. **Environment Consultant:** The Environment consultant M/s Centre for Envotech and Management Consultancy Pvt. Ltd, Bhubaneswar along with the proponent made a presentation on the proposal before the Committee.
20. The SEAC in its meeting held on dated 13-10-2023 decided to take decision on the proposal after receipt of the following information / documents from the proponent: The proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
1.	Site Specific Wildlife Conservation	As per the DFO, Bonai Division, the	-

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
	Plan furnished was obtained in 2014. In view of enhancement of production, it shall be revisited by the concerned DFO in consultation with Chief Wildlife Warden to modify/add/revise the stipulations as per present conditions. The project proponent shall assess the requirement of fresh water (ground water/surface water) and furnish copy of permission from CGWA/Water Resources Deptt., Govt. of Odisha.	implementation of Site Specific Wildlife Conservation Plan approved on 12.05.2014 has started from 2022-23. Hence, revalidation of the Plan shall be done after implementation; the letter from DFO in this regard is attached as Annexure – I. M/s National Enterprise has applied to CGWA vide application number 21-4/5426/OR/MIN/2023, dated 20.11.2023 to extract ground water of 98 KLD. The application copy is attached as Annexure- II.	
2.	Traffic study report vetted by institute of repute.	Traffic study was carried out at three sites i.e. RCC road towards Koida, RCC road towards Rugudihi & NH-520. The study report was vetted by IIT, Bhubaneswar and given as Annexure– III.	-
3.	Details of parking plaza size, no. of vehicles, floor area along with layout of the parking area. The parking area shall be concreted/blacktopped to control fugitive emission.	In order to transport iron ore of 10,000.4 T/day, heavy vehicles like 35 T capacity truck /tippers plying on the road will be 286 (in case of 300 working days), if used ones daily. To accommodate at least 170 nos. of trucks at any moment of time an area of 125m X 80m i.e. 1 ha area shall be developed as parking plaza towards northern part of the ML area. This area will be made up of RCC having separate entry & exit gate and basic facilities like washroom, rest room having drinking water, etc. the map is given as Annexure – IV.	-
4.	Details of Surface Runoff Treatment System and rainwater storage pond in the ML area based on sound calculations. The drainage network and the flow from different watershed within the mining area to the sedimentation pond(s) are required to be shown on a plan.	Details of Surface Runoff Treatment System and rainwater storage pond in the ML area is given in Chapter 4. At the end of the life of the mines there will be two nos. of settling ponds within the ML area. The detailed calculation is given as Annexure – V.	-
5.	The project proponent shall install Filter press for the dry stacking of the tailings generated from the process.	Agreed, we will install Filter Press for the dry stacking of the tailings.	-
6.	Garland drains shall be provided at the Dry stacking area of tailings.	Agreed, we will construct Garland drains around the Dry stacking area of tailings.	-
7.	The dry stacking area shall be lined with Geotextile material and an entire management plan for the same shall	Agreed, the management plan for dry stacking area is given as Annexure – VI. The tailing sludge will be dewatered	

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
	be submitted.	using filter press, the end press mud will be stored in the tailing storage area, which will be lined with geotextile materials and surrounded by garland drain.	
8.	Details of moisture content in the pressed tailings and designed pressure of the filter press. Also, the proponent shall furnish details of tailing constituents and mineral analysis report of the tailing.	There is proposal for quality upgradation of sub-grade iron ore through wet beneficiation process using Jigging Plant. So, no tailings are there at present in the lease area for analysis. Hence, we undertake to submit the details of constituents of pressed tailings including moisture content along with the half yearly EC compliances reports; the undertaking is given as Annexure- VII.  The designed pressure of the filter press which will be installed in the mines is 10 Bar (g), whereas the operating pressure will be +7.5 Bar (g).	Undertaking submitted for conducting detailed analysis of constituents of pressed tailings including moisture content.
9.	Detailed material balance showing mineralogical and metallurgical (such as Fe, Mn, Cr, P, S, V etc.) analysis of the feed, beneficiated concentrate product and reject tailings stream.	National Enterprises has sought EC for setting up a wet beneficiation plant through jigging process. So, no beneficiated concentrate product and reject tailings are there at present in the lease area for analysis. Hence, we undertake to submit the details of constituents of beneficiated concentrate product and reject tailings with the half yearly EC compliances reports; the undertaking is given as Annexure- VII.  However, we have report of the complete elemental analysis of sub grade iron ore fines which will be act as feed is attached as Annexure- VIII.	Undertaking submitted to submit the analysis report for details of constituents of beneficiated concentrate product and reject tailings.  However, report of the complete elemental analysis of sub grade iron ore fines has been submitted.
10.	Water balance report for the beneficiation plant involving each operational process.	Water balance report for each operational process in the beneficiation plant is attached as Annexure – IX.	-
11.	Detailed report on complete elemental analysis along with mineralogical, metallurgical and petrological analysis.	The complete elemental analysis of sub grade iron ore fines is carried out and the analysis report is attached as Annexure- VIII.	Report on complete elemental analysis of sub grade iron ore fines has been submitted.
12.	Compliance report for ToR condition (point no. xv) for photographs of the proposed site. Proponent shall also furnish the photographs along with geo-coordinates with date & time of sampling carried out for baseline study.	The baseline environmental data generation from the site and surroundings of Sanindpur iron and manganese mines was carried out during Post-Monsoon season from October 1st 2022 till December 31st 2022. Photographs of monitoring time	-

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
		are given as Annexure- X.	
13.	The project proponent shall revisit the EMP cost analysis and modify accordingly.	The costs regarding implementation of Environmental Management Plan is revised and the updated capital cost and recurring cost per annum works out to be Rs. 440 lakhs (Rupees Four hundred Forty lakhs only) & Rs. 105 lakhs (Rupees One hundred Five lakhs only) respectively; the details of the budget is attached as Annexure- XI.	-
14.	Submit layout of the whole lease area showing garland drain, nearest nala, surface drainage, solid waste dump site, stacking plant and other units.	The lay our map of the whole lease area showing garland drain around dump, solid waste dump site, proposed beneficiation plant site, nearest nala, propose parking plaza, etc is attached Annexure – IV.	-
15.	Compliance report to NEERI recommendations.	Compliance of Recommendation of CSIRNEERI Report on "Carrying Capacity Study for Environmentally Sustainable Iron and Manganese Ore Mining Activity in Keonjhar, Sundargarh and Mayurbhanj districts of Odisha State" is given in Compliances to toR conditions section of the EIA /EMP Report. However, as per the instruction of the SEAC, we are submitting that as Annexure –XII.	-
16.	Clarify the quantity of materials to be transported separately by road and by rail.	The nearest railway siding to Sanindpur Iron & Manganese Mines are at Barbil or Baruan. Barbil, the nearest railhead, is situated at a distance of 30km in NE direction and Barsuan railway siding is at a distance of 35km in SW direction. Thus, the iron ore produced from the mines will be transported by 35T capacity trucks through Kolda to Rugudihi RCC road and then either through NH-520 to Barbil or via Tensa town to Barsuan to the consumers.	-
17.	Quantity/details of raw material to be processed at mines and to be sold directly.	The Sanindpur Iron & Manganese Mines has applied for a maximum iron ore production of 3 million TPA ROM; it includes 23,04,330 TPA of ore having +55% Fe and 6,95,800 TPA of ore having 45%-55% Fe. Ore having +55% Fe will be sold directly in open market and remaining will be subjected to dry or wet beneficiation process, The sub-grade ore shall consist of 2,43,530 TPA of ore having -10 MM size, which will be subjected to quality upgradation	-

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		by wet beneficiation process using Jigging technology and quality of the remaining 4,52,270 TPA of ore having +10 MM size will be upgraded by dry beneficiation process involving existing /proposed Crusher and Screening Plants.	
18.	Layout of Overburden dump site and its management.	At present in the Sanindpur Iron & Manganese Mines, there are three numbers of OB dumps i.e. OB Dump -I over an area of 0.283 ha, OB Dump -II over an area of 0.619 ha and OB Dump -III over an area of 4.518 ha. Dump -I & II are in non-active condition whereas OB Dump -III is in active condition. Solid waste to the tune of 8,96,280m <sup>3</sup> (maximum annual production) will be produced and shifted to the dump-III. Retreating method will be adopted for the disposal of waste at the dumping site. The dumps-III is having retaining wall of 250m long, made up of boulders. The wall is of maximum 1.5m height and the top surface is of 1m flat. Retaining walls are having weep holes to drain out water. The wall is followed by 0.6m deep, 1m wide and 200m long garland drain. Conceptually the retaining wall will be 300m long & garland drain will be 250m long, other dimensions remaining the same (refer Annexure - IV).	-
19.	EMP cost estimated to be very less. This has to be re-estimated and submitted.	The capital cost and recurring cost for implementing the Environmental Management Plan is re-estimated to be Rs. 440 lakhs (Rupees Four hundred Forty lakhs only) & Rs. 105 lakhs (Rupees One hundred Five lakhs only) respectively; the details of the budget is attached as Annexure- XI.	-
20.	Complete tailing management to be submitted.	One of the end products of beneficiation process is tailings whose management plan is given as Annexure - XIII.	-
21.	As from the KML file no green belt could be observed properly, the PP needs to submit a fresh KML file and a video of green belt for further evaluation.	Photo of recent KML file is attached as Annexure - XIV. The video is mailed separately.	-
22.	Scientific study for measures against blast vibration and fly rocks by domain	According to the DGMS circulars, the safe PPV for industrial buildings under	-

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
	experts.	the frequency range of 8 to 25 Hz is 20mm/sec. In the present study the measured PPV and frequency matches this configuration, in which office building and crusher will have no adverse impacts. Analysis of the blast vibration data of the Peak Particle Velocities (PPVs) for various blasts was recorded. It was found that for the different blast PPV varies and it is related to that of the charge per delay. In most of the blasting operation PPV is found to be within the limits. The Blast Vibration Study Report is given as Annexure-XV.	
23.	Scientific study for slope stability of mine benches and dumps by domain experts.	The Slope Stability Report provides very useful information about the dump slope and mines bench of Sanindpur Iron & Manganese Mines. The study report is attached as Annexure – XVI. The mean factor of the dump slope of the area is about 1.15, which is critically stable. Safety factor varied from 0.85 to 1.45 for the depth of 10 m to 40 m for the slope angle 20 degree to 40 degree. It showed that with the increase in height of the bench or depth of the mine safety factor of the bench decreases indicating less stability of the concerned slope.	-
24.	Status of implementation of "Wildlife management plan" effective from 2014.	As per the DFO, Bonai Division, the implementation of management plan suggested in the Site Specific Wildlife conservation Plan has started in 2022-23. A letter from the DFO in this regard is attached as Annexure – I.	-
25.	Achievement status of "Green belt development program of previous EC".	As per the certified compliance report of previous EC for Sanindpur Iron & Manganese Mines issued by IRO, Bhubaneswar of MoEF&CC on 23.08.2023, the specific condition no. 10 regarding plantation is fully complied. The copy of the observation status is attached as Annexure – XVII.	-

Considering the information furnished and the presentation made by the consultant **M/s Centre for Envotech and Management Consultancy Pvt. Ltd, Bhubaneswar** along with the project proponent, the SEAC recommended for grant of Environmental Clearance with stipulated conditions as per **Annexure – B** and following specific conditions:

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- i) The project proponent shall maintain adequate greenbelt in the lease area.
- ii) OB dump sites shall be managed properly as proposed.
- iii) The additional fines generated due to proposed enhancement shall be managed properly.
- iv) Tailings generated from the Beneficiation process shall be managed as proposed.
- v) Proper Air Pollution Control measures shall be provided to control dust emission and local dust generation.
- vi) Both dust suppression and extraction system shall be provided in the crushing and screening units to control fugitive emission.
- vii) The project proponent shall obtain permission from the concerned authority for usage of surface water.
- viii) The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance approved from Indian Bureau of Mines/Department of Mining & Geology as required under the Provision of the MMDR Act, 1957 and Rules/ Guidelines made there under. A copy of approved final mine closure plan shall be submitted within 2 months of the approval of the same from the competent authority to the concerned Regional Office of the Ministry of Environment, Forest and Climate Change for record and verification.
- ix) Traffic management shall be done as per recommendation of Traffic Management Study Report duly vetted by institute of repute.
- x) As a part of six-monthly compliance, the PP shall submit the status of Tailing Pond and its annual make-up to ascertain its capacity to take care of expansion in production including mineralogical & chemical analysis of excavated ore, dump materials and rejects. Also, actual layout after expansion may be submitted as a part of six-monthly compliance to the SEIAA, Odisha and Regional Office, MoEF&CC, Govt. of India, Bhubaneswar.
- xi) Adequate measures shall be adopted for management of noise, vibration and fly rocks.
- xii) Bench and dump slopes are to be designed and maintained so that their failure is avoided.
- xiii) Permission from Water Resources dept. to be taken for usage of ground water.

**ITEM NO. 05**

**PROPOSAL OF ENVIRONMENTAL CLEARANCE OF M/S. ASSOTECH SUN GROWTH ABODE LLP FOR RESIDENTIAL APARTMENT BUILDING "AVENUE-7, ASSOTECH WORLD" OF M/S. ASSOTECH SUN GROWTH ABODE LLP AT PLOT NO. 317, 318, 319, 327/11161, 327/11159 & OTHERS OVER AN BUILT-UP AREA 2,24,655.00 SQMOF MOUZA – RUDRAPUR, PS-BALIANTA, TEHSIL-BHUBANESWAR, DIST-KHORDHA OF SRI SASHANK SEKHAR ROUT – TOR**

1. The proposal was considered by the committee to determine the "Terms of Reference (ToR)" for undertaking detailed EIA study for the purpose of obtaining environmental clearance in accordance with the provisions of EIA Notification,2006 and amendment thereafter.
2. This proposal is for Terms of Reference for environmental clearance of M/s. Assotech Sun Growth Abode LLP for Residential Apartment Building "Avenue-7, Assotech World" of M/s. Assotech Sun Growth Abode LLP at Plot No. 317, 318, 319, 327/11161, 327/11159 & others over an built-up area 2,24,655.00 sqm of Mouza – Rudrapur, Ps-Baliana, Tehsil-Bhubaneswar, Dist-Khordha of Sri Sashank Sekhar Rout.

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3. **Category:**The proposed project falls in schedule 8(b): Township & Area Development Projects, under Category "B", as per EIA notification – 2006 and amendment thereof.
4. BMC has provisionally approved the building plan vide letter no. 20629/BMC, dated 28.04.2023.
5. Drainage permission from BMC has been obtained vide letter no. 31277, dated 03.07.2023.
6. Ground Water permission from CGWA vide NOC no. CGWA/NOC/INF/ORIG/2021/12208, dated 03.07.2021.
7. Height Clearance from AAI has been obtained Vide NOC No. BHUB/EAST/B/072522/685895, dated 26.08.2022.
8. NOC from Public Health Division for Water & Sewerage connection has been obtained vide letter no. 6010, dated 31.05.2023.
9. **Location and connectivity:** The proposed site is located at Mouza-Rudrapur, PS-Balianta, Tehsil-Bhubaneswar, Dist-Khordha, Odisha. The Geographical co-ordinate of the project site is: Latitude –20° 19' 24.5" to 20° 19' 32.03" N & Longitude – 85° 53' 17.75"to 85° 53' 26.47" E. The project site is well connected with National Highway NH-16 at a distance of 33pprox. 0.6 Km in West direction. The nearest railway station is Mancheswar Railway station at a distance of approx4.5 Km in West direction & Bhubaneswar Railway Station at a distance 9.2 Km in South-west direction. The nearest airport is Biju Patnaik Airport at a distance of 33pprox.. 11.5 Km in South-west direction from project site.
10. The site is coming under Bhubaneswar Municipal Corporation (BMC).
11. The total plot area is 34982.0 sq.mt. with total built-up area 2,24,655.0 sq.mt.
12. The Building Area, Details of the Project in tabulated form

Particular	Proposed	Permissible
Project Name	Avenue-7, Assotech World, Assotech Sun Growth Abode LLP	
Land Falling in the proposed CDP road, ASSOTECH WORLD Avenue 7 Access road to be given as gift to BMC through Gift Deed	10,683.00 sqm	--
Net Plot Area of Avenue 7	34,982.00 sqm	--
Ground Coverage	18,287.00 sqm	--
FAR Area	1,62,805.00 sqm	--
<b>Total Built up Area</b>	<b>2,24,655.00 sqm</b>	--
Maximum Height	86.90 m	150 m
Road Area	5,478.00 sqm	--
Stilt Parking Area	15,987.00 sqm	40,463.00 sqm
Basement Parking Area	29,160.00 sqm	
Open Parking Area	500.00 sqm	
<b>Total Parking Area</b>	<b>45,647.00 sqm</b>	
Green Belt Area	9,580.00 sqm (27.0 %)	6,996.36 sqm (20 %)
Maximum No. of Floor	B+S+25	--
Power Requirement	4350.0 KVA	--
Solar	218.0 KVA	
No. of DG sets	2x1500 KVA	--

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Fresh Water requirement	524.40 KLD	--
Sewage Treatment Plant	STP Capacity – 700 KLD	--
Estimated Population-Residential, Commercial, Floating/visitors	6438 nos.	--

13. **Water requirement:** Fresh make up of 524.4 m<sup>3</sup>/day will be required for the project which will be sourced from Ground Water.

Sl. No.	Description	Total Population	Per Capita Consumption (ltr/day)		Water Requirement (KLD)		
					Domestic	Flushing	Total
i)	Premium	3144 nos.	Fresh (90)	Flushing (45)	282.9	141.5	424.4
ii)	Supreme	2304 nos.	Fresh (90)	Flushing (45)	207.4	103.7	311.1
iii)	Maintenance Staff	150 nos.	Fresh (25)	Flushing (20)	3.8	3.0	6.8
iv)	Club House	560 nos.	Fresh (25)	Flushing (20)	13.9	11.2	25.1
v)	Visitor	280 nos.	Fresh (5)	Flushing (10)	1.4	2.8	4.2
vi)	Swimming Pool	--	--	--	15.0	--	15.0
<b>TOTAL</b>					<b>524.4</b>	<b>262.2</b>	<b>786.6</b>

14. **Wastewater management:** Total wastewater generated from the residential building is 681.7-BS/647.6 –PPT KLD which is treated in STP of Capacity 700 KLD. Treated water 226.4KLD will be discharged to nearest drain as per revised water balance.

15. **Power requirement:** Total Power requirement of the proposed residential building is 4350.0 KVA, Source is TPCODL, 2 x1500 KVA DG Sets is provided. Total 218.0 KVA Solar Power Generation which is 5.0% of total power required in project.

16. **Rain Water Harvesting:** Total 885 cum Rain Water is harvested through 14no. of recharge pits.

17. **Parking Requirement:** Total parking area provided is 45647.0 Sq.mt. and total 1502 nos. of ECS and location of parking area is Basement, Stilt & Open.

Parking Area Provided			
Basement Parking Area			29160.0 sqm
Stilt Parking Area			15987.0 sqm
Open Surface Parking			500.0 sqm
<b>Total Parking</b>	--	--	<b>45647.0 sqm</b>
Equivalent Car Space Provided			
	Area(sqm)	Area/ECS	
Basement Parking Area	29160.0	32	911 ECS
Stilt Parking Area	15987.0	28	571 ECS
Open Surface Parking	500.0	25	20 ECS
<b>Total Parking Provided</b>			<b>1502 ECS</b>

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18. **Firefighting Installations:** Fire Fighting will be provided as per NBC Norms.

19. **Green Belt Development:** Greenbelt is developed over an area of 9,580.00 sqm which is 27% of the total plot area. Total 437 nos. of plants to be planted and 3 tier plantations.

20. **Solid Waste Management generation and management:**

**Solid waste Generation**

S. No.	Category	Counts (heads)	Waste generated (kg/day)
i)	Residents	5448 @ 0.40 kg/day	2179.2
ii)	Floating Population	330 @ 0.15 kg/day	49.5
<b>TOTAL SOLID WASTE GENERATED</b>			<b>2228.7 kg/day</b>

**Solid waste Management**

Sl. No.	Description of Waste	Organic Quantity Kg/ Day	Inorganic Quantity Kg/ Day	Method of Collection	Method of Disposal
i)	General Garbage	891.48		Manual	Organic waste converter
			1337.22	Manual	sold to recycler
ii)	STP Sludge including office and Amenity	80.0 Kg/Day		Manual	On Own Land for Gardening

21. **Project cost:** The estimated project cost is 600.0 Crores and cost for EMP is Rs. 2.21 Crores.

22. **Environment Consultant:** The Environment consultant M/s Centre for Envotech & Management Consultancy Pvt. Ltd, Bhubaneswar along with the proponent made a presentation on the proposal before the Committee.

23. The SEAC in its meeting held on dated 18-10-2023 recommended the following:

**(A) The proposed site shall be visited by Sub-Committee of SEAC to verify the followings. ToRs to be issued after site visit.**

- i) Environmental settings of the project site.
- ii) Verify if the site is a flood prone area.
- iii) Construction activity if any started at the site.
- iv) Road connectivity to the project site.
- v) Drainage network at the site.
- vi) Discharge point for discharge of treated water and distance of the discharge point from the project site.
- vii) Any other issues including local issues.

**(B) Following specific ToRs may be prescribed while issue of Terms of References for the project for EIA study.**

- i) Copy of Permission obtained from the concerned authority for drainage connection & discharge

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of storm water and treated waste water from STP.

- ii) Documents/credentials in support of drainage discharge into the Prachi Dhara/Prachi River.
- iii) Copy of Structural Stability study report.
- iv) Copy of Soil quality, soil stability and soil erosion study report before and after the construction.
- v) The water balance to reduce the quantity of wastewater generation as the quantity of treated waste water discharge is very high i.e. 336.1 KLD.
- vi) Copy of land documents along with permission obtained from the landowners (General Power of Attorney or Sale deed) for construction of drainage network over the respective plots.
- vii) Details of Reduced Level of Ground water and Bottom Reduced level of Rainwater harvesting pit.
- viii) Revenue map indicating plot details of the gifted road with copy of gift deed
- ix) Ownership of the land showing in revenue map connecting the drain to Prachi Dhara.
- x) BMC permission letter to allow discharge of treated water to Prachi Dhara.
- xi) Structural stability, Traffic study vetted and green belt plan (as not much trees there).

24. The proposed site was visited by the sub-committee of SEAC on 01.11.2023. Following are the observations of the sub-committee and proponent needs to submit relevant documents as below:

- a) The Project site is located near Bhubaneswar-Cuttack Main Road. The PP has gifted Road to BMC for connecting to its site. The Layout plans were explained by the Project proponent and Consultant.
- b) The natural small drain called Prachi Dhara is adjacent to the road with about 15-20 ft.
- c) Following documents need to be submitted by PP:
  - i) Revenue map indicating plot details of the gifted road with copy of gift deed.
  - ii) Ownership of the land showing in revenue map connecting the drain to Prachi Dhara.
  - iii) BMC permission letter to allow discharge of treated water to Prachi Dhara.
  - iv) Structural stability, Traffic study vetted and green belt plan (as not much trees there)
- d) All other points covered during presentation to be complied.

25. The proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
1.	Copy of Permission obtained from the concerned authority for drainage connection & discharge of storm water and treated waste water from STP.	Only the surplus water after the conservation and recycling measures from project will be discharged to Prachi Dhara which is nearer to the project site. Permission has been obtained from Bhubaneswar Municipal Corporation	-

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
		vide letter no. 31277, dated 03/07/2023. Permission letter is attached in <b>Annexure-1</b> .	
2.	Documents/credentials in support of drainage discharge into the Prachi Dhara/Prachi River.	Permission has been obtained from Bhubaneswar Municipal Corporation vide letter no. 31277, dated 03/07/2023. Permission letter is attached in <b>Annexure-1</b> .	-
3.	Copy of Structural Stability study report.	Structural Stability certificate has been obtained from Jadavpur University vide letter no. JU/VET/1192/2023, dated 19.09.2023. Structural Stability certificate is attached in <b>Annexure-2</b> .	-
4.	Copy of Soil quality, soil stability and soil erosion study report before and after the construction.	Soil investigation has been conducted at project site & the soil investigation report is attached in <b>Annexure-3</b> .	-
5.	The water balance to reduce the quantity of wastewater generation as the quantity of treated waste water discharge is very high i.e. 336.1 KLD.	Total fresh water requirement of the project is 524.4 KLD & flushing water requirement of the project is 262.2 KLD. Total wastewater generated from the project is 681.7 KLD & the treated water available from the STP is 647.6 KLD which is reused in Flushing (262.2 KLD), Dust Suppression (44 KLD), Landscaping (115 KLD) & 226.4 KLD treated water will be discharged to nearest drain i.e using this surplus water for township level irrigation and horticulture requirement in future. Revised water balance is attached in <b>Annexure-4</b> .	
6.	Copy of land documents along with permission obtained from the landowners (General Power of Attorney or Sale deed) for construction of drainage network over the respective plots.	Drainage network has been planned through our own land which has been gifted to BMC through gift deed finally terminating to Prachi Dhara passing through the Plot No. 391/10875. Land document along with permission from landowner is attached in <b>Annexure-5</b> and the copy of gift deed attached as <b>Annexure-6</b> .	-
7.	Details of Reduced Level of Ground water and Bottom Reduced level of Rainwater harvesting pit.	As per the existing study and data the Reduced Level of Ground water is 45.00 mtr from BGL and Bottom Reduced level of Rainwater harvesting pit will be 50.00 mtr from BGL.	-

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
8.	Revenue map indicating plot details of the gifted road with copy of gift deed	Revenue map indicating plot details of the gifted road is attached as Annexure-7 and copy of gift deed attached as Annexure-6.	-
9.	Ownership of the land showing in revenue map connecting the drain to Prachi Dhara.	Revenue map showing drain connecting from Land to Prachi Dhara is attached in Annexure-8 and ownership of the land is attached in Annexure-5.	-
10.	BMC permission letter to allow discharge of treated water to Prachi Dhara.	The drainage permission is undoubtedly for all types of drainage and it will not distinguish the type of discharge. The pre-session letter from Bhubaneswar Municipal Corporation vide letter no.31277, dated 03/07/2023. Permission letter is attached in Annexure-1.	-
11.	Structural stability, Traffic study vetted and green belt plan (as not much trees there).	Structural Stability certificate has been obtained from Jadavpur University vide letter no. JU/VET/1192/2023, dated 19.09.2023. Structural Stability certificate is attached in Annexure-2. Undertaking to submit Traffic Study Report vetted by Indian Institute of Technology (IIT), Bhubaneswar is attached in Annexure-9. Greenbelt development plan is attached in Annexure-10.	Greenbelt layout has been submitted.

Considering the information / documents furnished by the proponent and presentation made by the consultant M/s Centre for Envotech & Management Consultancy Pvt. Ltd, Bhubaneswar, the SEAC prescribed the following specific ToRs in addition to standard ToRs as per Annexure – C for conducting detailed EIA study.

- i) Details of Greenbelt plan alongwith layout has been submitted.
- ii) Traffic Study Report to be submitted and vetted from reputed institute.
- iii) Structural Stability certificate from appropriate authority as per BDA guidelines be submitted and vetted from reputed institute.
- iv) Detailed calculation of Rain Water Harvesting and Layout showing Rainwater Harvesting pits. Increase more recharging pits with 50% recharge
- v) Layout of internal drainage map and their fallout to external public drain.
- vi) The water balance to reduce the quantity of wastewater generation as the quantity of treated waste water discharge is very high i.e. 336.1 KLD.Reduce discharge of treated water to drain by planting more trees.
- vii) The greenbelt to be provided along the outer periphery of the plot along the boundary the

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spacing maybe reduced to 2m x 2m to accommodate more trees and should be planted on a hierarchical pattern.

- viii) The concept of vertical garden may also be considered apart from landscaping, potted plants, Parks & Gardens.
- ix) The water Treatment Plant, Waste Water Treatment Plant, STP, DG set's location to be marked in the layout plan.
- x) Adequate overhead portable water tank to be provided as per the norms apart from Treated Waste Water tank for use in dual plumbing system for the flush in the toilet.
- xi) To submit Sabik RoR with Kisam and HaL RoR with Kisam to rule out involvement of Forest and DLC land in the project.
- xii) For parking of various types of vehicle adequate provision of basement, Stilt, Open area and Mechanical parking may be considered.
- xiii) Provision of lift with ventilation, lighting and AC from lowest basement to terrace roof top to be provided.
- xiv) Bio-diversity register to be prepared for the existing fellow lands and plan for conservation of the same after completion of the construction activities as per Biodiversity Conservation Act, 2003.
- xv) Efforts for Energy Conservation in the project as per Bureau of Energy Conservation in line with Energy Conservation Act, 2003 to be submitted for the project.
- xvi) Disaster Management Plan for the project may be prepared and submitted as per Disaster Management Act, 2005.
- xvii) Permission from Water Resources dept. to be taken for usage of ground water.

#### **ITEM NO. 06**

#### **PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR PAKTIA QUARTZ & QUARTZITE MINE OVER AN AREA OF 8.85 ACRES OR 3.581 HECTARES IN VILLAGE PAKTIA UNDER SARASKANA TAHASIL OF MAYURBHANJ DISTRICT OF SRI LALIT DAS - EC**

1. This proposal is for Environmental Clearance for Paktia Quartz & Quartzite Mine Over an area of 8.85 Acres or 3.581 Hectares in village Paktia under Saraskana Tahasil of Mayurbhanj District of Sri Lalit Das.
2. **Category:** The project falls under category "B" or activity 1 (a) – Mining of Minerals under EIA Notification dated 14th September 2006 as amended from time to time.
3. This application is for extension of lease period and expansion of production from the Environmental Clearance issued by DEIAA, Mayurbhanj for the lease period, vide Ref. No. DEIAA/119 dated 21.06.2017 for production of 1,06,287 MT of Quartz & Quartzite in the plan period.
4. Environmental Clearance is sought for the production of 52,012MT/annum, of Quartz & Quartzite and 607 MT/annum of sub grade material. The ML area is 8.85 Acre or 3.581 ha, out of which only 1.85 ha will be utilized for mining & allied activities during the Plan period.

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5. Mining Lease was granted in favour of Shri Lalit Kumar Dash on 30.12.2000 for 20 years vide letter No.- III (c) M-2/2000-16981SM, and the said lease was Executed on 30.03.2001 for 20 years, which was expired on 29.03.2021.
6. The lessee has carried out mining operation in the lease till the expiry of the lease period upto 29.03.2021 and before completion of lease period the Lessee has applied for Extension of Mining lease u/s 8 A (3) of MMDR Amendments Act 2015 & u/r 66(1) of OMMC Rules, 2016.
7. The Internal verification Committee (IVC) meeting held on 08.05.2023 and IVC have recommended to extend the lease period u/r 66(1) of OMMC Rules, 2016 for fifty years from the original lease deed.
8. Dept of Steel and Mines Govt. of Odisha has extended the lease period upto 29.03.2051 vide letter no. 6298 dated 21.06.2023 with condition to obtain all statutory clearance.
9. The mining operation was undertaken with all statutory clearances.
10. The Environmental Clearance was obtained from DEIAA, Mayurbhanj for the lease period, vide Ref. No. DEIAA/119 dated 21.06.2017 for production of 1,06,287 MT. in the plan period.
11. Total lease area of 3.581 ha. is non-forest Govt. waste land.
12. The scheme of mining has been approved vide letter no.: 2848/Mines, Dated 30.03.2019 by Directorate of Mines, Bhubaneswar, Govt of Odisha.
13. Quartz & Quartzite is under Specified Minor Mineral Category.
14. DSR of Mayurbhanj district has been approved on 28.12.2019 & the said lease details has been shown as identified source in SI No- 1 after Page No. 48 of Quartz and Quartzite.
15. **Location and connectivity:** The Paktia Quartz & Quartzite Mines is in the village - Paktia under Saraskana Tahasil, in the district of Mayurbhanj of Odisha State. The area is featured in toposheet no 73J/7 (F4517) and is bounded between Latitude: 22°19'05.32920" to 22°19'13.55160"N, Longitude: 86°28'41.47680" to 86°28'49.06920"E. The nearest National highway is Chennai-Kolkata (NH 06) at a distance of 20 Km. The nearest Railway station is at Bangiriposi at a distance of 20 Km. There is no eco sensitive zone situated within 10Kms from the lease area. However reserve forest is at a distance of 5.5 kms & water body is located within the buffer zone of the lease area at 2.5 kms. Road Bridge at 14.0 kms and Rail bridge at 93.2 kms. River embankment at 2.5 kms and electric transmission line at 0.2 kms. Village road at 1 km and habitation at Paktia at 0.2 km.
16. **Reserves:** As estimated the total geological reserve is about 4,15,462 MT, out of which 3,93,153 MT have been considered as mineable reserves.
17. **Total production:** (52,012MT/annum) quartz and quartzite (26852 cum/Annum) from excavation and (25160 cum/Annum) from dump working and (607 MT/annum) of Sub Grade Material. During 5 years of plan period 132934 MT of Quartz & Quartzite from mine working, 107030 MT of Quartz & Quartzite from dump working will be excavated and 3005 MT of sub grade will be generated.

Year	Quartzite from mine working in MT	Quartzite from dump working in MT	Sub-grade generation in cum	Waste generation in cum

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1st Year	24200	18171	547	1095
2nd Year	25747	20209	582	1165
3rd Year	29946	19612	677	1355
4th Year	26189	23878	592	1185
5th Year	26852	25160	607	1215
<b>Total</b>	<b>132934</b>	<b>107030</b>	<b>3005</b>	<b>6015</b>

18. **Method of mining:** Opencast semi-mechanized method will be adopted using machineries such as Excavator, compressor & jack-hammer (if required), screening vibrator etc. for screening. Bench parameter will be kept at 3m height and 3m width. Overall pit slope will be 75°-85°. Excavation & separation of Quartz & Quartzite is done in two phases. One is removal of Quartz & Quartzite from the quarry face; it is the main stage. The second phase is sorting-sizing-screening/cleaning of excavated material as per the required size. Manual labours with crow-bar and pick-axe will be used for segregating the waste material from the useful material. Shallow hole Blasting shall be carried out using safety fuse with ordinary detonator.

19. **Post mining land use:**

Purpose	Existing	Plan Period	Conceptual Period	Total Area In Ha.
Mining	0.390	0.549	0.911	1.850
Dumping	0.016	0.098	0.164	0.278
Ore stack yard	0.014	0.118	0.006	0.138
Road	0.157	0.007	---	0.164
Plantation	0.560	0.200	0.140	0.900
Screening Plant & Machineries, Infrastructure Site service R. shed and office	0.045	0.005	--	0.050
Topsoil stack	0.012	--	--	0.012
Sub-grade stack	--	0.120	--	0.120
<b>Total</b>	<b>1.194</b>	<b>1.097</b>	<b>1.221</b>	<b>3.512</b>
Unused	--	---	--	0.069
<b>Total Lease Area</b>				<b>3.581</b>

20. **Waste generation and its management:** During plan period 16,306 cum of waste will be generated. Total waste will be dumped over 0.098 ha. of area. Further non saleable ore as sub-grade of 3005 cum will excavated in 5 year also will stacked over 0.12 ha. of land. Further 34,807 cum of intercalated waste will be generated during conceptual period which will be accommodated within a surface area of 2776 sq. meter. The dump will be maintained below 28 ° slope with a height of 15 meter. There will be 3 terraces with 5 meter each. The sub-grade

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material to generate will be utilized for blending. There is one top soil dump of 0.012 ha. size to accommodate top soil if any.

21. **Water requirement:** 2 m<sup>3</sup>/day (1 m<sup>3</sup> for dust suppression, 0.5 m<sup>3</sup> for Plantation & 0.5 m<sup>3</sup> for drinking purpose). As the requirement of water is not so huge, the mine will draw water as per suitability in accordance to the existing guidelines.
22. **Greenbelt:** A total 420 saplings have been planted as on 31.03.2018 over 0.264 ha. And regularly funds have been deposited towards DMF Trust & OEMF Trust. Total 320 trees shall be planted over an area of 0.20 ha. during plan period.
23. **Manpower:** Administrative & supervisory personnel will be 3 numbers and 19 workers will be employed under skilled (4), semi-skilled (8) & un-skilled (4) category in the mine.
24. **Project cost:** Total cost of the project will be Rs. 40 Lakhs (approx.) and a budget of Rs. 7.1 lakhs is proposed as EMP cost for the lease area. Lessee will spend towards CSR activities about Rs. 4 lakhs for the peripheral development towards education, Health check-up camp and maintenance of roads etc.
25. **Environment Consultant:** The Environment consultant M/s Srushti Seva Private Limited, Nagpur along with the proponent made a presentation on the proposal before the Committee on 01.09.2023.
26. The SEAC in its meeting held on dated 01-09-2023 decided to take the decision on the proposal after receipt of the following from the proponent. The proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
1.	Copy of lease extension documents of the concerned authority.	The lease is extended for fifty years from 30.03.2001 to 29.03.2051 by the recommendation on internal verification Committee (IVC), meeting held on 08.05.2023. IVC recommendation attached as <b>Appendix-1.</b>	submitted
2.	Certificates from concerned DFO that the proposed quarry does not come under DLC land and distance of the proposed quarry from Similipal Wildlife Sanctuary and distance from its Eco-Sensitive Zone.	The lease area belongs to Patharbani Kissam & no DLC forest land involved. The distance of Similipal WL Sanctuary from the lease area is 22.472 Km Letter from DFO, Baripada Forest Division is attached as <b>Appendix -2.</b>	submitted
3.	Note on Blasting management and flying rocks assessed properly from experts.	Detailed note on Blasting Management & Assessment of flying rocks is attached as <b>Appendix -3.</b>	submitted
4.	Past production figures since the inception of the mine till now duly certified from Mining Officer.	Production figure duly certified by Mining Officer, Baripada from the inception of mines to till date is attached as <b>Appendix - 4.</b>	submitted
5.	Copies of Consent to Establish and Consent to Operate of the mine.	Previous CTE & CTO copies of mine are attached as <b>Appendix 5A &amp; 5B</b>	submitted
6.	Environmental Clearance granted by DEIAA valid up to 2021. No mining	Production figure duly certified by Mining Officer, Baripada from the	--

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*J. Nayak*  
Environmental Scientist, SEAC

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
	activity has been carried out after 2021. Supportive documents to this effect shall be submitted.	inception of mines to till date is attached as Appendix - 4.	
7.	RL of the mineralised area pre and post mining as per the approved mining plan along with the RL of ground water during rainy and summer seasons in the ML area.	Top RL pre mining & bottom RL Post mining of the mineralized area during mining plan period is 217m RL & 200m RL respectively. Ground water RL during rainy and summer seasons in the ML area varies from 194m RL to 192m RL respectively. Map showing RL of mineralized zone and ground water level is attached as Appendix - 6.	submitted

Considering the information furnished and the presentation made by the consultant M/s Srushti Seva Private Limited, Nagpur along with the project proponent, the SEAC recommended for grant of Environmental Clearance with stipulated conditions as per Annexure – D.

#### ITEM NO. 07

#### **PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR BANGARISINGHA MAHANADI SAND QUARRY OVER AN AREA OF 17.00 ACRES OR 6.88 HA HAVING KHATA NO. 903(A.A.A), PLOT NO. 7388/7570 IN VILLAGE BANGARISINGHA UNDER BARAMBA TAHASIL OF CUTTACK DISTRICT OF SRI HARA SENAPATI - EC**

1. This proposal is for Environmental Clearance for Bangarisingha Mahanadi Sand Quarry over an area of 17.00 Acres or 6.88 Ha having Khata No. 903(A.A.A), Plot No. 7388/7570 in village Bangarisingha under Baramba Tahasil of Cuttack District of Sri Hara Senapati.
2. **Category:** As per EIA Notification, 2006 and its subsequent amendments, the proposed project falls in category B1 under Item 1(a)-Mining of Minerals.
3. Mining Lease has been granted to Sri Haraprasad Senapati, S/o- Jadumani Senapati, by Tahasildar, Baramba for 5 years vide letter no. 01 dated 01/01/2021.
4. The mining plan was approved by Md. Q Jamal Khan, DDG with letter no.GXVII(g)-863/19/7425/DG and date.12.11.2020.
5. Mining lease is an identified sairat source in the DSR page No.55, Sl.no.93, Annexure.II. The proposed mine is an Existing Mine.
6. **TOR details:** Terms of Reference (TOR), was issued by SEIAA, Odisha, vide proposal Letter Ref. No.-SIA/OR/MIN/61279/2021 vide letter no. 1343/SEIAA on 24/05/2021.
7. **Public Hearing details:** Public Hearing was conducted on 16.09.2022 at Mandap near Maa Anantakumari Mandir of village Bangarisingha under Baramba Tahasil of .Cuttack District, Odisha at 11.30 AM. Plantation, widening of roads, cleaning of deposited sand on transportation route, movement of transportation vehicles in a controlled speed limit were the main issues in Public Hearing. The budget incurred for the action plan of public hearing are kept under CER Budget is Rs. 30,000.

Proceedings of the SEAC meeting held on 02.12.2023 (Old proposals – compliance received)

*Trayak*  
Environmental Scientist, SEAC

S.no	Particulars	Capital Cost	Annual Recurring cost
1	Pollution Control	55,000	11,000
2	Pollution Monitoring	25,000	5,000
3	Afforestation along Approach road	40000	8,000
4	Occupational health and safety	30,000	6,000
5	Reclamation /Rehabilitation of mined out area	-	-
Total		1,50,000	30,000

#### 8. Location and Connectivity –

Village	Bangarisingha
Tahasil	Baramba
District	Cuttack
Khata No. & Plot No.	903 & 7388/7570
Kisam	Nadi
Latitude	Latitude: N20°23'20.7" to N20°23'27.0"
Longitude	Longitude :E85°27'59.9" to E85°28'17.5"
Nearest village	BangarisinghaVillage, 2.11km in W from the lease area.
Nearest Town/City	Cuttack at a distance 44k.m.
Nearest Railway Station	NarajMarthapur RailwayStation 33.5km.
Nearest Airport	BijuPatnaikInternationalAirport,Bhubaneswaris at about 40 km in ESE.
Nearest Highway	SH-65 at a distance of 6.2 .
Nearest NH	NH-224 at a distance 20k.m
Ecology Sensitive Zone	No national parks and sanctuary within 10 km radius
Reserve Forest	Kumaranga Reserve Forest- 1.5 Km in N
Sesmic Zone	Zone – III as per IS: 1893 (Part-I): 2002
Survey of India Topo-Sheet no.	73H/7
Nearest distance of Approach Road	2k.m
Nearest water body	Mahanadi River
Nearest road Bridge / Railway Bridge	Mahanadi River bridge-0.6k.m
River embankment	0.5k.m
Electric transmission Pole	2.1k.m
Village road	Bangarisingha village road-2k.m
Nearest Habitation	Bangarisingha village-2.1k.m
	Chandaka Dampada Sanctuary at a distance 29k.m.

9. Total Reserves and Proposed Production –As per MGQ certificate given by Competent Authority the proposed production is 7000cum/Year.

Proceedings of the SEAC meeting held on 02.12.2023 (Old proposals – compliance received)

*Jayak*  
Environmental Scientist, SEAC

Mining Lease	Year	Surface Area in m <sup>2</sup>	Thickness in m	Production (m <sup>3</sup> )
	A	B	C	D=B*C
Bangarisingha Mahanadi Sand Quarry	1st Year	7000	1	7000
	2nd Year	7000	1	7000
	3rd Year	7000	1	7000
	4th Year	7000	1	7000
	5th Year	7000	1	7000
Total				35000 cum

As per Approved Mining Plan		As per Replenishment Study Report	
Geological Reserve	Mineable Reserve	Geological Reserve	Mineable Reserve
42804	37551	47110	36320

10. Replenishment Report details (in case of sand) – Replenishment Study Report has prepared by Drone method. Date of Premonsoon Survey.-18.05.2022. Date of Post Monsoon Survey-05.12.2022. 36320cum of sand has been replenished annually.

Pre-Monsoon Reserve	Post-Monsoon Reserve
<b>Geological Reserve:-30008m<sup>3</sup></b> Total cross-sectional area X Length of Influence=Volume of sand.	<b>Geological Reserve:-47110m<sup>3</sup></b> Total cross-sectional area X Length of Influence=Volume of sand
<b>Mineable Reserve:-20114m<sup>3</sup></b> MR (m <sup>3</sup> ) of sand excluding all safety zone area and water covered area.	<b>Mineable Reserve:-36320 m<sup>3</sup></b> MR (m <sup>3</sup> ) of sand excluding all safety zone area and water covered area.

11. Mining Method –The proposed project will carry out Open cast manual mining, with capacity is 7000 m<sup>3</sup>/year.

12. Water Requirement –Total water required for the proposed project is 5 KLD.

S. No.	Particulars	Quantity (KLD)	Source
	Dust Suppression (on haul roads etc.)	1.0	Water will be sourced from nearest available source.
	Green Belt Development/ Plantation	2.0	
	Drinking/Domestic & Sanitation	2.0	
Total		5.0	

Proceedings of the SEAC meeting held on 02.12.2023 (Old proposals – compliance received)

*J Nayak*  
Environmental Scientist, SEAC

13. **Baseline Study details:**– Baseline study of the study area was conducted during pre-monsoon from 1st March 2022 to 31st May 2022 for Bangarisingha Sand Quarry.

- a) **Air quality:** PM10 levels were ranging from 52.3 to 82.4 µg/m<sup>3</sup>. PM2.5 levels were ranging from 22.0 to 37.1 µg/m<sup>3</sup>. SO<sub>2</sub> levels were ranging from 6.7 to 16.5 µg/m<sup>3</sup>. NO<sub>x</sub> levels were found ranging from 9.9 to 16.5 µg/m<sup>3</sup>.
- b) **Noise study:** The noise levels varied in the study area during day time from 42.6 dB (A) Leq at Airi to 50.6 Leq dB (A) at T-Point where Vehicle Movement is Higher which is increase the noise level. The night time noise level in the study area is in the range of 37.2 (A) Leq at Khuntal to 46.2 Leq Db (A) at T-Point because, because Due to surrounding activities of Project site.
- c) **Ground water monitoring results:** pH ranges from 7.63 to 7.82. TDS in samples ranges from 426 mg/l to 675 mg/l. Total Hardness in the water ranges from 285 mg/l to 452mg/l. Calcium content in the water ranges from 51.6 mg/l to 81.7 mg/l, Magnesium content in the water ranges from 14.0 mg/l to 19.5 mg/l. Total alkalinity in the water samples ranges from 97 mg/l to 200 mg/l. Chlorides range from 125.4 mg/l to 245.5 mg/l.
- d) **Surface water monitoring results:** All samples were colourless meeting desirable norms (<5 Hazen). All samples meet the desirable standards (pH ranges from 7.26 – 7.97). TDS in samples ranges from 297 mg/l to 511 mg/l. Total hardness in the water ranges from 199.0 mg/l to 342.3 mg/l. Calcium content in the water ranges from 35.9 mg/l to 61.8 mg/l, Magnesium content in the water ranges from 16.1 mg/l to 27.7 mg/l, Total alkalinity in the water samples ranges from 71.6 mg/l to 123.1 mg/l. Chloride ranges from 152 mg/l to 262 mg/l.
- e) **Soil monitoring results:** All the samples showed pH in the range from 7.34 - 8.12. Conductivity of the samples were in the range from 196 µs/cm – 340 µs/cm. Moisture were in the range from 4.7% to 9.2%. Organic Carbon ranges from 0.52% - 0.85%. Organic Matter ranges from 0.90% - 1.47%. Phosphorus in the samples ranges from 17 mg/kg- 49 mg/kg. Total Nitrogen ranges from 49 mg/kg- 110 mg/kg. Potassium in the samples ranges from 95 mg/kg - 146 mg/kg. Calcium in the samples ranges from 136 mg/kg - 246 mg/kg. Magnesium ranges from 58.4 mg/kg – 86.4 mg/kg. Chloride ranges from 83 mg/kg- 210 mg/kg.

14. **Greenbelt Development**– 50 trees per year.

Year	Number of saplings purposed	Location	Type of saplings
1st Year	50	Plantation is carried out safety zone of the lease area(river bank areas)	Teak, Mango, Jammu, Jhaun, Neem etc.
2nd Year	50		
3rd Year	50		
4th Year	50		
5th Year	50		
Total	250		

15. **Manpower**-Total number of manpower required for the project is 13 persons.

Designation	Bangarisingha
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Proceedings of the SEAC meeting held on 02.12.2023 (Old proposals – compliance received)

*J Nayak*  
Environmental Scientist, SEAC

Supervisory Personnel/ Statutory Personnel	1
Skilled laborers (Operator and Helper)	2
Unskilled Laborer	10
Total	13

16. **Project Cost & EMP cost** –Estimated cost of the project is Rs. 20 Lakhs, EMP cost bars a Capital Cost of Rs. 1, 50,000 and Recurring Cost of Rs. 30,000.
17. **Environment Consultant:** The Environment consultant M/s **Green Circle Inc., Gujarat** along with the proponent made a presentation on the proposal before the Committee on 31.07.2023.
18. **The SEAC** in its meeting held on **31-07- 2023** decided to take the decision on the proposal after receipt of the following from the proponent. The proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
1.	Details of road connectivity with layout.	The proposed Bangarisingha Mahanadi River Sand Quarry over an area of 17.00 Acres situated in the Mahanadi River, mouza-Bangarisingha, Khata No-903, Plot no-7388/7570 under Baramba Tahasil of Cuttack district, Odisha. This lease premises holds a small area in the northern Part of the Mahanadi River. The average Length and width of the lease area is around 510mx 140m respectively. In that part of the River bed, the width of the River bed is more than 3.00Km and major River Flow/water channel is in the southern side of the River Bed, whereas lease has been granted in the northern part of the River Bed (i.e. Sand Bed deposit area). A small water channel counters in the northern part of the lease area remains dry throughout the season. The transportation will be done from north-eastern corner of the lease area through an unmettalled road to Baramba via Bangarisingha village. The detail lay out plan is enclosed.(Annexure-I)	submitted
2.	Certificate/Clarification from Tahasildar for exact distance of River bridge, river embankment, and electric transmission line from the project site.	Certificate from concerned Tahasildar for exact distance of River bridge, river embankment, and electric transmission line from the project site is enclosed as (Annexure-II)	submitted
3.	Revised replenishment study report as difference in Pre Monsoon RL and Post Monsoon RL is unrealistically high. Sufficient details of drone survey not provided. Also the calculation of reserve is not done in proper manner.	The corrected Replenishment Survey Report conducted by an ORSAC empanelled agency through UAV/Drone method is enclosed. (Annexure-III).	submitted

Proceedings of the SEAC meeting held on 02.12.2023 (Old proposals – compliance received)

*J Nayak*  
Environmental Scientist, SEAC

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
4.	Complete details of the compliance of Specific TOR 1.	<p>The DSR for Sand Sairat sources was prepared as per MoEF &amp; CC guidelines dated 25.07.2018 basing on the available mining plan and approved report. Though the Bangarisingha Sand Quarry is an existing Quarry which was operated for last five years by Sri Trilochan Samal for ending with FY 2019- 2020. During previous Plan Period, Mineable Sand reserve was estimated at 1,27,034 cu.m with a production capacity of 22,100 cu.m per Year, which was reflected in Previous approved Mining Plan, Previous approved EC and DSR. The lessee has already achieved the production target of 22,100 cu.m of sand per Year.</p> <p>After the completion of lease period of Sri Trilochan Samal, the lease area was surveyed again and put for auction by Tahasildar, Baramba, Dist-Cuttack. After Survey, the mining plan was prepared and approved by Deputy Director Geology, Bhu-Bigyan Bhawan, Bhubaneswar vide office letter noGXVII(g)-863/19-7425 /DG of dated 12.11.2020. In the year 2020, Mineable reserve was calculated excluding all the safety criteria, is 37551 cu.m and proposed production target was fixed by the competent Authority is 7000 cu.m per Year. After that no DSR was revised.</p> <p>During the present study conducted through UAV/Drone by an ORSAC empaneled Agency, it was found that the Available mineable sand resource for the Bangarisingha Sand Quarry is 23033.3429 cu.m and based on this estimation at least 60% (i.e. 13820.0057cum) replenishable quantity of sand available for mining of this period which may allow for mining activity. But the approved quantity of sand 7000cum. as per the mining plan. The updated reserve will be reflected in the DSR by the concerned Authority after approval of Replenishment Study Report prepared for the financial year 2023-2024.</p>	submitted

Considering the information furnished and the presentation made by the consultant, M/s Green Circle Inc., Gujarat, along with the project proponent, the SEAC recommended for grant of Environmental Clearance for the proposal valid upto lease period with stipulated conditions as per Annexure – E and following specific conditions:

Proceedings of the SEAC meeting held on 02.12.2023 (Old proposals – compliance received)

*J. Nayak*  
Environmental Scientist, SEAC



- a) Amended EIA Notification dated 25<sup>th</sup> July, 2018, Guidelines for sustainable sand mining, 2016 and Enforcement and Monitoring Guidelines for Sand Mining, January 2020 of MoEF&CC, Govt. of India shall be adhered to in execution of Mining as per Annexure – F.
- b) Sand extraction shall be limited to quantity of 7000 m<sup>3</sup> and depth as per replenishment study report. Regular replenishment study as per guidelines to be conducted and report to be submitted.
- c) Provision of Bio-toilet shall be made at the site.
- d) Avenue plantation and plantation on both sides of the haulage road in consultation with/ on the advice of concerned Forest Department, Government of Odisha & W.R. Department Government of Odisha as well.
- e) Stone patching with plantation in between along the stretch of the bank associated with sand mining and necessary ramp construction shall be made.

**ITEM NO. 08**

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

1. This proposal is for Environmental Clearance for Baitarini Sand Bed, Habaleswar over an area of 5.26 ha at mouza - Habaleswar under Hatadihi Tahsil of Keonjhar district of Sri Krushna Chandra Swain.
2. **Category:** As per EIA Notification, 2006 and its subsequent amendments, the proposed project falls under Category B in Schedule in item 1(a)- Mining of Minerals.
3. The lease is granted (Successful Bidder) in the name of Sri Krushna Chandra Swain, At – Brahmanigan, Baranga in the district of Cuttack for a lease period of 5 (five) years by Tahasildar, Hatadihi vide letter no – 307 on dated 28.01.2021.
4. The Mining plan has been approved for a period of five years by the Joint Director of Geology, Keonjhar. Vide letter no – 2402/CZ, on dated 30.07.2020 in favour of Tahsildar, Hatadihi.
5. This is a new mine and mining lease is an identified sairat source in the District Survey Report for River Sand in respect of Keonjhar district which has been prepared in accordance with Appendix – x, Para – 7 (iii) (a) of S.O. No – 3611(E) dated 25.07.2018 of MoEF& CC, New Delhi and approved by Collector, Keonjhar on dated 28.01.2020 and the said area has been marked in Annexure – II, Sl. no – 88 of DSR Report.
6. **ToR details:** Terms of Reference (ToR) was issued by SEIAA, Odisha vide Letter no. - 1247/SEIAA (File no. SIA/OR/MIN/60800/2021) on dated 09.04.2021.
7. **Public hearing details:** Public hearing was conducted on 01.10.2022 at 11.0 AM at Khata no – 1/1, Plot no - 146 of Habaleswar village in Keonjhar district, Odisha. Issues raised during public hearing are Environmental issues like Pollution Control measures for smoke and dust nuisance during transportation and Operation of sand mining as per Govt. guidelines and Peripheral issues like proper water sprinkling for dust suppression & adequate plantation, river bank erosion & flood threat for village and the shiv temple of Habaleswar village, support for livelihood of tractor owners /local shopkeepers etc, development of roads, accident problem due to transportation, education facilities for students.

Proceedings of the SEAC meeting held on 02.12.2023 (Old proposals – compliance received)

*J Nayak*  
Environmental Scientist, SEAC

8. **Location and connectivity:** Theminelease area is located in Plot no – 1225/1240, Khata no – 165, Mouza – Habaleswar, Tahsil – Hatadihi, Dist – Keonjhar, Odisha. The proposed site is bounded by Latitude: 21°2'02.02" to 21°02'11.26" N, Longitude: 86°16'00" to 86°16'10.96" E bearing Topo Sheet No. - F45 O/4, Kissam - Non- Forest Govt. land of Nadi kissam. The Lease area is accessible from Habaleswar village road at a distance of 0.50 km, which is well connected to Habaleswar Chhaka and then Highways. Nearest NH is NH 215 - 15.0 Km; SH 53 - 13.0 Km. Nearest Airport is Bhubaneswar Airport - 120.0 Km. The lease area lies on Baitarini River. Salandi R.F. is 27.0 Km; Habaleswar road bridge - is 2.0 Km; Dulukhapatana Railway bridge is 3.0 Km; River Embankment is 0.6 Km and Electric transmission pole is 0.5 Km away from the project site.
9. **Reserves and production:** The total Geological reserves is 126240 Cum and Mineable Reserves is 110518 and the Proposed Production for the Proposed Project is 13260 Cum/Annum.

Year	PRODUCTION (M <sup>3</sup> )
1 <sup>ST</sup> YEAR	13260
2 <sup>ND</sup> YEAR	13260
3 <sup>RD</sup> YEAR	13260
4 <sup>TH</sup> YEAR	13260
5 <sup>TH</sup> YEAR	13260
<b>TOTAL</b>	<b>66300</b>

10. **Replenishment study details:** The Study was carried out for pre-monsoon data on 14.06.2022 and post monsoon data on 13.11.2022 by using UAV/ Drone method as per the SSMG, 2020. As, per the calculation, 5452.46 m<sup>3</sup> sand has been replenished.
11. **Baseline study details:** Baseline Study was conducted in Oct'2021 to Dec'2021 (Post-Monsoon Season), 8 monitoring station for Air quality & Noise level monitoring, 4 sampling location for ground & surface water quality monitoring and 4 stations for soil quality has been monitored. The results are well within limit of statutory norm.
- Air quality:** The AAQ analysis indicates that the concentration of PM<sub>10</sub> varied from 37.1 to 65 µg/m<sup>3</sup>, PM<sub>2.5</sub> from 11.7 to 44 µg/m<sup>3</sup>, SO<sub>2</sub> from BDL to 16.2 µg/m<sup>3</sup>, NOx from BDL to 19.1 µg/m<sup>3</sup>.
  - Surface water quality:** pH values varied between 7.2 to 7.41, Turbidity – 10.8 to 14.8 NTU, Dissolved Solids - 378 to 482 mg/L, Dissolved oxygen - 6.4 to 7.2 mg/L, BOD - 1.4 to 1.8 mg/L.
  - Ground water quality:** pH values varied between 6.1 to 7.1, Turbidity – 3.2 to 4.3 NTU. Dissolved Solids - 96 to 118 mg/l, total hardness - 80 to 99 mg/l. Chloride values - 7 to 10.7 mg/l. Calcium - 17.1 to 18 mg/l, Magnesium - 8.6 to 10 mg/l.
  - Noise study:** Noise level varies from 48 to 53 dB (A) during Day time and 40 to 43 dB (A) during Night time, which are below the prescribed limits of CPCB.
  - Soil quality:** Texture of soil within the study area is sandy silt to sandy loam. Soil of the study area is slightly acidic in nature. The bulk density of soil samples varies from 1.38 to 1.68 gm/cm<sup>3</sup>; porosity varies from 34 to 42.5 %.

Proceedings of the SEAC meeting held on 02.12.2023 (Old proposals – compliance received)

12. **Mining method:** The mining of sand will be done by open cast manual method for excavation & then loading into dumpers/ tractors/tippers for transport to the user's destination. The maximum depth of mining will be of 1.2 m or up to water table whichever is less. Mining will be carried out in lean period only; during monsoon the mining will be stopped.
13. **Water requirement:** Total water approx, 1.0 KLD will be required for different purposes like Domestic, Dust suppression, plantation purposes & sourced as per the availability.
14. **Greenbelt development:** 250 nos. of plantation will be carried out along the roadside for the Proposed project.
15. **Manpower requirement:** Total 18 nos of manpower will be required for the proposed project (1 number of supervisory personnel preferably Mining Mate with Certificate of Competency from DGMS; 1 skilled, 2 semi-skilled and 14 unskilled persons will be employed)
16. **Project cost:** Total cost of the proposed project is 20.0 Lakhs. A capital cost of 4.5 lakhs is proposed as EMP cost (including CER cost of 2.0 lakhs) & 0.5 lakhs as EMP recurring cost.

EMP BUDGET		
Particulars	Capital Cost (Rs. in Lakhs)	Recurring Cost (Rs. Lakhs/Annum)
Environmental Monitoring	2.0	0.2
Environmental Management		0.2
Green belt development	0.5	0.1
CSR	2.0	
<b>Total</b>	<b>4.5</b>	<b>0.5</b>

CER BUDGET	
Category	Cost in Lakh
Provide drinking water facility / Repairing of tube well etc.	0.5
Health Camp	0.5
Repair of Roads	0.5
Sports & Education	0.5
<b>Total</b>	<b>2.0</b>

17. **Environment Consultant:** The Environment consultant M/s Srushti Seva Private Limited, Nagpur along with the proponent made a presentation on the proposal before the Committee.
19. The SEAC in its meeting held on dated 13-10-2023 decided to take decision after receipt of the following from the proponent. The proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
1.	The project proponent shall conduct analysis of the sediment deposit in NABL accredited labs according to the classification of content and size and furnish the report of the same.	The sediment deposit has been analyzed according to the classification of content and size. The analysis report is annexed as Appendix - 1.	submitted

Proceedings of the SEAC meeting held on 02.12.2023 (Old proposals – compliance received)

*J. Nayak*  
Environmental Scientist, SEAC

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
2.	The project proponent shall submit the accuracy report of the drone survey along with the accuracy level.	The accuracy level of the drone survey was 0.67 cm in X axis, 1.11 cm in Y axis & 0.44 cm in Z axis. The data processing Report is annexed as <b>Appendix - 2</b> .	submitted
3.	The project proponent shall provide the layout of the survey area over which drone survey is done.	Drone survey has been carried out within lease area and a buffer area of 50m from the lease boundary. A layout of survey area is annexed as <b>Appendix - 3</b> for reference.	submitted

Considering the information furnished and the presentation made by the consultant, **M/s Srushti Seva Private Limited, Nagpur**, along with the project proponent, the SEAC recommended for grant of Environmental Clearance for the proposal valid upto lease period with stipulated conditions as per Annexure – E and following specific conditions:

- a) Amended EIA Notification dated 25<sup>th</sup> July, 2018, Guidelines for sustainable sand mining, 2016 and Enforcement and Monitoring Guidelines for Sand Mining, January 2020 of MoEF&CC, Govt. of India shall be adhered to in execution of Mining as per Annexure – F.
- b) Sand extraction shall be limited to quantity and depth as per replenishment study report. Regular replenishment study as per guidelines to be conducted and report to be submitted.
- c) Provision of Bio-toilet shall be made at the site.
- d) Avenue plantation and plantation on both sides of the haulage road in consultation with/ on the advice of concerned Forest Department, Government of Odisha & W.R. Department Government of Odisha as well.
- e) Stone patching with plantation in between along the stretch of the bank associated with sand mining and necessary ramp construction shall be made.

  
**MEMBER SECRETARY, SEAC**

Proceedings of the SEAC meeting held on 02.12.2023 (Old proposals – compliance received)

**TERMS OF REFERENCE (ToR) FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY AND INFORMATION TO BE INCLUDED IN EIA/EMP REPORT FOR RAIKA IRON & MANGANESE ORE MINES OF SHRI SHIV DUTTA SHARMA OVER AN AREA OF 26.243 HA AT VILLAGE RAIKA, TAHASIL-BARBIL, DISTRICT-KEONJHAR OF SRI SHAKTI DASH – VIOLATION TOR**

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**A. STANDARD TOR FOR MINING PROJECT**

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, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.
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, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.
  19. A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the

project cost.

20. Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered.
21. Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).
22. R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs/STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine (lease area) will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.
23. One season (non-monsoon) [i.e. March - May (Summer Season); October - December (post monsoon season) ; December - February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM<sub>10</sub>, particularly for free silica, should be given.
24. Air quality modelling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modelling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.
25. 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,

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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.
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. Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.
41. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
42. The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
43. A Disaster management Plan shall be prepared and included in the EIA/EMP Report.
44. 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.
45. 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.
46. 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.
47. 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.

**B. Specific TOR: 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	Minimum 70% by public railway siding and maximum 30% by

Code	EC	Suggested Ore Transport Mode
	< 3 MTPA	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 2006, as amended time to time) 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					
<b>Total</b>	<b>160 +</b>	<b>105</b>	<b>129</b>	<b>153</b>	<b>177</b>	<b>201</b>
<b>Next year allocation = Average of EC Capacity and Last year production</b>						

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

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- 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 waste) 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, NOx 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, PM2.5, SO2, NOx 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 geotextile 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)

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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 miner 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, PMin 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	SPCB	Continuous Annually

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Sl. No.	Study component / Action Plan	Responsibility	Monitoring and Reporting Time Frame (Approx.)
	laboratory approved/ recognized by NABET/ CPCB/ SPCB/ MoEF&CC. All the water bodies (rivers, nallas, 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.		
	Installation of online ambient air quality monitor for PM10, PMP.S, SOx and NOx within the mine having more than 3 MTPA EC Capacity	Respective Mine Lease Holders	Continuous Annually
	Installation of online ambient air quality monitor for PM <sub>10</sub> , PM <sub>2.5</sub> , SOx and NOx 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 conducted in an integrated manner in consultation with Regional Director, Central Ground Water Board. Accordingly, all project proponents shall implement suitable conservation	SPCB	Once in 2 years

Sl. No.	Study component / Action Plan	Responsibility	Monitoring and Reporting Time Frame (Approx.)
	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

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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.

- C. Besides the above, the below mentioned general points are also to be followed:-

- a) All documents to be properly referenced with index and continuous page numbering.
- b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
- c) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.
- d) Where the documents provided are in a language other than English, an English translation should be provided.
- e) The Questionnaire for environmental appraisal of mining projects as devised earlier

by the Ministry shall also be filled and submitted.

- f) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J-11013/41/2006- IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.
  - g) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.
  - h) As per the circular no. J-11011/618/2010-IA.II (I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.
  - i) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) Sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.
- D. The prescribed TOR would be valid for a period of four years for submission of the EIA/EMP report.**

**CONDITIONS TO BE STIPULATED IN ENVIRONMENTAL CLEARANCE FOR M/S NATIONAL ENTERPRISES FOR ENHANCEMENT IN PRODUCTION OF IRON ORE FROM 0.41 MILLION TPA TO 3 MILLION TPA ROM WITH TOTAL EXCAVATION OF 4.073 MILLION TPA (ROM OF 3 MILLION TPA + 1.073 MILLION TPA WASTE) AND SETTING UP A 100 TPH JIGGING & WASHING PLANT, TWO MOBILE JAW CRUSHERS OF 200 TPH CAPACITY EACH, TWO MOBILE CONE CRUSHERS OF 200 TPH CAPACITY EACH & TWO VIBRATORY DRY SCREEN PLANTS OF 200 TPH CAPACITY EACH IN SANINDPUR IRON & MANGANESE MINES OVER AN AREA OF 70.917 HA LOCATED AT VILLAGE- SANINDPUR UNDER BLOCK & TEHSIL- KOIDA, SUBDIVISION- BONAI, DIST – SUNDARGARH OF SRI CHARANJIT SINGH GREWAL – EC.**

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**(I) Statutory compliance**

- (i) This Environmental Clearance (EC) is subject to orders/ judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable.
- (ii) The Project proponent complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors before commencing the mining operations.
- (iii) The State Government concerned shall ensure that mining operation shall not be commenced till the entire compensation levied, if any, 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 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors.
- (iv) This Environmental Clearance shall become operational only after receiving formal NBWL Clearance from MoEF&CC subsequent to the recommendations of the Standing Committee of National Board for Wildlife, if applicable to the Project,
- (v) This Environmental Clearance shall become operational only after receiving formal Forest Clearance (FC) under the provision of Forest Conservation Act, 1980, if applicable to the project.
- (vi) Project Proponent (PP) shall obtain Consent to Operate after grant of EC and effectively implement all the conditions stipulated therein. The mining activity shall not commence prior to obtaining Consent to Establish / Consent to Operate from the concerned State Pollution Control Board.
- (vii) The PP shall adhere to the provision of the Mines Act, 1952, Mines and Mineral (Development & Regulation), Act, 2015 and rules & regulations made there under. PP shall adhere to various circulars issued by Directorate General Mines Safety (DGMS) and Indian Bureau of Mines from time to time.
- (viii) The Project Proponent shall obtain consents from all the concerned land owners, before start of mining operations, as per the provisions of MMDR Act, 1957 and rules made thereunder in respect of lands which are not owned by it.
- (ix) The Project Proponent shall follow the mitigation measures provided in

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MoEF&CC's Office Memorandum No. Z-11013/57/2014-IA.II (M), dated 29<sup>th</sup> October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area".

- (x) The Project Proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and from CGWA for withdrawal of ground water for the project.
- (xi) A copy of EC letter will be marked to concerned Panchayat / local NGO etc. if any, from whom suggestion / representation has been received while processing the proposal.
- (xii) State Pollution Control Board shall be responsible for display of this EC letter at its Regional office, District Industries Centre and Collector's office/ Tehsildar's Office for 30 days.
- (xiii) The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded EC and copy of the EC letter is available with the State Pollution Control Board and web site of the Ministry of Environment, Forest and Climate Change ([www.environmentclearance.nic.in](http://www.environmentclearance.nic.in)). A copy of the advertisement may be forwarded to the concerned MoEF&CC Regional Office for compliance and record.
- (xiv) The Project Proponent shall inform the MoEF&CC/SEIAA, Odisha for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred than mining operation shall only be carried out after transfer of EC as per provisions of the para 11 of EIA Notification, 2006 as amended from time to time.

**(II) Air quality monitoring and preservation**

- (i) The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an angle of 120° is made between the monitoring locations to monitor critical parameters, relevant for mining operations, of air pollution viz. PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>2</sub>, CO and SO<sub>2</sub> etc. as per the methodology mentioned in NAAQS Notification No. B-29016/20/90/PCI/I, dated 18.11.2009 covering the aspects of transportation and use of heavy machinery in the impact zone. The ambient air quality shall also be monitored at prominent places like office building, canteen etc. as per the site condition to ascertain the exposure characteristics at specific places. The above data shall be digitally displayed within 03 months in front of the main Gate of the mine site.
- (ii) Effective safeguard measures for prevention of dust generation and subsequent suppression (like regular water sprinkling, metalled road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM<sub>10</sub> and PM<sub>2.5</sub> are evident such as haul road, loading and

unloading point and transfer points. The Fugitive dust emissions from all sources shall be regularly controlled by installation of required equipments/ machineries and preventive maintenance. Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEF&CC/ Central Pollution Control Board.

**(III) Water quality monitoring and preservation**

- (i) In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEF&CC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area.
- (ii) Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintain. The natural water bodies and or streams which are flowing in an around the village, should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug well located in village should be incorporated to ascertain the impact of mining over ground water table. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.
- (iii) Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central Ground Water Authority/ State Ground Water Department. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.
- (iv) The Project Proponent shall undertake regular monitoring of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease and maintain its records. The project proponent shall undertake regular monitoring of water quality upstream and downstream of water bodies passing within and nearby/ adjacent to the mine lease and maintain its records. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. PP shall carryout regular monitoring w.r.t. pH and included the same in monitoring plan. The parameters to be monitored shall include their water quality vis-a-vis suitability for usage as per CPCB criteria and flow rate. It shall be ensured that no obstruction and/ or alteration be made to water bodies during mining operations without justification and prior approval of MoEF&CC / SEIAA, Odisha. The monitoring of water courses/ bodies existing in lease area shall be carried out four times in a year viz. pre- monsoon (April-May).

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monsoon (August), post-monsoon (November) and winter (January) and the record of monitored data be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, SEIAA, Odisha, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on six-monthly basis.

- (v) Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off; acid mine drainage and metal contamination in runoff shall be monitored along with Total Suspended Solids (TDS), Dissolved Oxygen (DO), pH and Total Suspended Solids (TSS). The monitored data shall be uploaded on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J-20012/1 /2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change may also be referred in this regard.
- (vi) The project proponent shall construct retaining wall and settling pond within the lease area. Further, check dams shall be constructed at strategic locations in which rain water passes in rainy season. Finally, the excess supernatant after sedimentation shall be allowed to spill away through stone pitch structure to the nearby valley.
- (vii) De-silting of agricultural lands in buffer zone and beyond including nearby Nalas/rivers perennially periodically and perpetually caused due to wash up of minerals/OB/dumps shall be done as per SOP submitted. A legal affidavit shall be submitted within 6 months from the date of issue of Environmental Clearance to this effect with periodicity of de-silting.
- (viii) Detail design of the existing retaining wall and the proposed for the expansion from a chartered Civil Engineer shall be submitted within 6 months from the date of issue of Environmental Clearance to ensure that no silt after wash up is escaped from the core / buffer zone of the mines.
- (ix) An area of 3.40Ha shall be kept for public use as pond and road. Hence, remaining 52.956Ha shall be planted during life of the mine in a phased manner i.e. within a period of 20 years.
- (x) Project Proponent shall plan, develop and implement rainwater harvesting measures on long term basis to augment ground water resources in the area in consultation with Central Ground Water Board/ State Groundwater Department. A report on amount of water recharged needs to be submitted to Regional Office, MoEF&CC annually.
- (xi) Industrial waste water (workshop and waste water from the mine) should be properly collected and treated in an ETP as proposed so as to conform to the notified standards prescribed from time to time. The standards shall be prescribed through Consent to Operate (CTO) issued by concerned State Pollution Control Board (SPCB). The workshop effluent shall be treated after its initial passage through Oil and grease trap.
- (xii) The water balance/water auditing shall be carried out and measure for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF&CC and State Pollution Control Board.

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**(IV) Noise and vibration monitoring and prevention**

- (i) The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.
- (ii) The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day /night hours.
- (iii) The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The worker engaged in operations of HEMM, etc. should be provided with ear plugs /muffs. All personnel including laborers working in dusty areas shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. The PP shall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.

**(V) Mining Plan**

- (i) The Project Proponent shall adhere to the working parameters of mining plan which was submitted at the time of EC appraisal wherein year-wise plan was mentioned for total excavation i.e. quantum of mineral, waste, over burden, inter burden and top soil etc.. No change in basic mining proposal like mining technology, total excavation, mineral & waste production, lease area and scope of working (viz. method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode, ultimate depth of mining etc.) shall not be carried out without prior approval of the Ministry of Environment, Forest and Climate Change, which entail adverse environmental impacts, even if it is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form to Short Term Permit (STP), Query license or any other name.
- (ii) The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance approved from Indian Bureau of Mines/Department of Mining & Geology as required under the Provision of the MMDR Act, 1957 and Rules/ Guidelines made there under. A copy of approved final mine closure plan shall be submitted within 2 months of the approval of the same from the competent authority to the concerned Regional Office of the Ministry of Environment, Forest and Climate Change for record and verification.
- (iii) The land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis-a-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self-sustaining. The

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compliance status shall be submitted half-yearly to the MoEF&CC and its concerned Regional Office / SEIAA, Odisha.

**(VI) Land reclamation**

- (i) The Overburden (O.B.) generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by D.G.M.S w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of top soil/OB dumps. The topsoil shall be used for land reclamation and plantation.
- (ii) The reject/waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of the waste dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of waste dumps.
- (iii) The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.
- (iv) The slope of dumps shall be vegetated in scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and help in adaptation of plant species to the microclimate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer/ compactors thereby ensuring proper filling/ leveling of dump mass. In critical areas, use of geo textiles/ geo-membranes / clay liners / Bentonite etc. shall be undertaken for stabilization of the dump.
- (v) The Project Proponent shall carry out slope stability study in case the dump height is more than 30 meters. The slope stability report shall be submitted to concerned regional office of MoEF&CC, Govt. of India, Bhubaneswar as well as SEIAA, Odisha.
- (vi) Catch drains, settling tanks and siltation ponds of appropriate size shall be constructed around the mine working, mineral yards and topsoil / OB / waste dumps to prevent runoff of water and flow of sediments directly into the water bodies (Nallah/ River/ Pond etc.). The collected water should be utilized for watering the mine area, roads, green belt development, plantation etc. The drains/ sedimentation sumps etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly.
- (vii) Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining area which shall also help in providing adequate retention time period thereby allowing proper settling of sediments/ silt material. The sedimentation pits/ sumps shall be constructed at

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the comers of the garland drains.

- (viii) The top soil, if any, shall temporarily be stored at earmarked site(s) within the mine lease only and should not be kept unutilized for long. The physical parameters of the top soil dumps like height, width and angle of slope shall be governed as per the approved Mining Plan and as per the guidelines framed by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of dumps. The topsoil shall be used for land reclamation and plantation purpose.
- (ix) The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.

**(VII) Transportation**

- (i) No Transportation of the minerals shall be allowed in case of roads passing through transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers.
- (ii) The Main haulage road within the mine lease should be provided with a permanent water arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipments like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.
- (iii) Traffic management shall be done as per recommendation of Traffic Management Study Report.
- (iv) The Project Proponent shall provide parking plaza for the heavy vehicles within the lease area as recommendation of NEERI.

**(VIII) Green Belt**

- (i) The Project Proponent shall develop greenbelt in 7.5m wide safety zone all

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along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 years starting from windward side of the active mining area. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.

- (ii) The Project Proponent shall carryout plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall also be adhered. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for protection and care of trees.
  - (iii) The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensate those areas which are coming within the mine lease. The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted.
  - (iv) The Project Proponent shall undertake all precautionary measures for conservation and protection of endangered flora and fauna and Schedule-I species during mining operation. A Wildlife Conservation Plan shall be prepared for the same clearly delineating action to be taken for conservation of flora and fauna. The Plan shall be approved by Chief Wild Life Warden of the State Govt.
  - (v) And implemented in consultation with the State Forest and Wildlife Department. A copy of Wildlife Conservation Plan and its implementation status (annual) shall be submitted to the Regional Office of the Ministry.
- (IX) **Public hearing and human health issues**
- (i) The Project Proponent shall appoint an Occupational Health Specialist for Regular as well as Periodical medical examination of the workers engaged in the mining activities, as per the DGMS guidelines. The records shall be maintained properly. PP shall also carryout Occupational health check-ups in respect of workers which are having ailments like BP, diabetes, habitual smoking, etc. The check-ups shall be undertaken once in six months and necessary remedial/ preventive measures be taken. A status report on the same may be sent to MoEF&CC Regional Office and DGMS on half-yearly basis.
  - (ii) A commitment in form of an undertaking for periodical occupational health checkup of the employee and the local people shall be done through an occupational health expert as per the detailed action plan submitted with the

proposal within 6 months from the date of issue of Environmental Clearance.

- (iii) The Project Proponent must demonstrate commitment to work towards 'Zero Harm' from their mining activities and carry out Health Risk Assessment (HRA) for identification workplace hazards and assess their potential risks to health and determine appropriate control measures to protect the health and wellbeing of workers and nearby community. The proponent shall maintain accurate and systematic records of the HRA. The HRA for neighborhood has to focus on Public Health Problems like Malaria, Tuberculosis, HIV, Anaemia, Diarrhoea in children under five, respiratory infections due to bio mass cooking. The proponent shall also create awareness and educate the nearby community and workers for Sanitation, Personal Hygiene, Hand washing, not to defecate in open, Women Health and Hygiene (Providing Sanitary Napkins), hazard of tobacco and alcohol use. The Proponent shall carryout base line HRA for all the category of workers and thereafter every five years.
- (iv) The Proponent shall carry out Occupational health surveillance which be a part of HRA and include Biological Monitoring where practical and feasible, and the tests and investigations relevant to the exposure (e.g. for Dust a X-Ray chest; For Noise Audiometric; for Lead Exposure Blood Lead, For Welders Full Ophthalmologic Assessment; for Manganese Miners a complete Neurological Assessment by a Certified Neurologist, and Manganese (Mn) estimation in Blood; For Inorganic Chromium- Fortnightly skin inspection of hands and forearms by a responsible person. Except routine tests all tests would be carried out in a Lab accredited by NABH. Records of Health Surveillance must be kept for 30 years, including the results of and the records of Physical examination and tests. The record of exposure due to materials like Asbestos, Hard Rock Mining, Silica, Gold, Kaolin, Aluminium, Iron, Manganese, Chromium, Lead, Uranium need to be handed over to the Mining Department of the State in case the life of the mine is less than 30 years. It would be obligatory for the State Mines Departments to make arrangements for the safe and secure storage of the records including X-Ray. Only conventional X-Ray will be accepted for record purposes and not the digital one). X-Ray must meet ILO criteria (17 x 14 inches and of good quality).
- (v) The Proponent shall maintained a record of performance indicators for workers which includes (a) there should not be a significant decline in their Body Mass Index and it should stay between 18.5 -24.9, (b) the Final Chest X-Ray compared with the base line X-Ray should not show any capacities, (c) At the end of their leaving job there should be no Diminution in their Lung Functions Forced Expiratory Volume in one second (FEV1), Forced Vital Capacity (FVC), and the ratio) unless they are smokers which has to be adjusted, and the effect of age, (d) their hearing should not be affected. As a proof an Audiogram (first and last need to be presented), (e) they should not have developed any Persistent Back Pain, Neck Pain, and the movement of their Hip, Knee and other joints should have normal range of movement, (f) they should not have suffered loss of any body part. The record of the same should be submitted to the Regional Office, MoEF&CC annually along with details of the relief and compensation paid to workers having above

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indications.

- (vi) The Project Proponent shall ensure that 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.
  - (vii) Project Proponent shall make provision for the housing for workers/labors or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project related infrastructure. The domestic waste water should be treated with STP in order to avoid contamination of underground water.
  - (viii) The activities proposed in Action plan prepared for addressing the issues raised during the Public Hearing conducted on 09.11.2021 shall be completed as per the budgetary provisions mentioned in the Action Plan and within the stipulated time frame. The Status Report on implementation of Action Plan shall be submitted to the concerned Regional Office of the Ministry along with District Administration.
  - (ix) Issues raised and recorded in proceedings of public hearing w.r.t. environment / pollution / CER shall be complied by the Mining Authority as per OM F. No. 22-65/2017-IA.III, dated 30.09.2020 of MoEF&CC, Govt. of India.
- (X) Corporate Environment Responsibility (CER)**
- (i) The activities and budget earmarked for Corporate Environmental Responsibility (CER) as per Ministry's O.M No 22-65/2017-IA. II (M) dated 01.05.2018 or as proposed by SEAC should be kept in a separate bank account. The activities proposed for CER shall be implemented in a time bound manner and annual report of implementation of the same along with documentary proof viz. photographs, purchase documents, latitude & longitude of infrastructure developed & road constructed needs to be submitted to Regional Office MoEF&CC annually along with audited statement.
  - (ii) Project Proponent shall keep the funds earmarked for environmental protection measures in a separate account and refrain from diverting the same for other purposes. The Year wise expenditure of such funds should be reported to the MoEF&CC and its concerned Regional Office / SEIAA, Odisha.
- (XI) Miscellaneous**
- (i) The Project Proponent shall prepare digital map (land use & land cover) of the entire lease area once in five years purpose of monitoring land use pattern and submit a report to concerned Regional Office of the MoEF&CC.
  - (ii) The Project Authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.

- (iii) The project proponent shall establish a solar power plant with 30KVA capacity within the lease area as proposed.
- (iv) The Project Proponent shall submit six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MoEF&CC & its concerned Regional Office, SEIAA, Odisha, Central Pollution Control Board and State Pollution Control Board.
- (v) A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEF&CC.
- (vi) The proponent shall comply all the specific conditions as recommended by CSIR-NEERI on carrying capacity study (as applicable) in time bound manner as proposed.
- (vii) The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.
- (viii) The project proponent shall augment infrastructure on drinking water, health care and education in nearby villages as per time bound action plan submitted.
- (ix) The project proponent shall obtain permission from DGMS under 106(2b) to carry out blasting operation within the lease area.
- (x) The concerned Regional Office of the MoEF&CC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEF&CC officer(s) by furnishing the requisite data / information / monitoring reports.
- (xi) Any appeal against this environmental 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.

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**STANDARD TERMS OF REFERENCE FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY FOR TOWNSHIP/ AREA DEVELOPMENT PROJECTS AND INFORMATION TO BE INCLUDED IN EIA/EMP REPORT**

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- 1) Examine details of land use as per Master Plan and land use around 10 km radius of the project site. Analysis should be made based on latest satellite imagery for land use with raw images. Check on flood plain of any river.
- 2) Submit details of environmentally sensitive places, land acquisition status, rehabilitation of communities/ villages and present status of such activities.
- 3) Examine baseline environmental quality along with projected incremental load due to the project.
- 4) Environmental data to be considered in relation to the project development would be (a) land, (b) groundwater, (c) surface water, (d) air, (e) bio-diversity, (f) noise and vibrations, (g) socio economic and health.
- 5) Submit a copy of the contour plan with slopes, drainage pattern of the site and surrounding area. Any obstruction of the same by the project
- 6) Submit the details of the trees to be felled for the project.
- 7) Submit the present land use and permission required for any conversion such as forest, agriculture etc.
- 8) Submit Roles and responsibility of the developer etc for compliance of environmental regulations under the provisions of EP Act.
- 9) Ground water classification as per the Central Ground Water Authority.
- 10) Examine the details of Source of water, water requirement, use of treated waste water and prepare a water balance chart.
- 11) Rain water harvesting proposals should be made with due safeguards for ground water quality. Maximize recycling of water and utilization of rain water. Examine details.
- 12) Examine soil characteristics and depth of ground water table for rainwater harvesting.
- 13) Examine details of solid waste generation treatment and its disposal.
- 14) Examine and submit details of use of solar energy and alternative source of energy to reduce the fossil energy consumption. Energy conservation and energy efficiency.
- 15) DG sets are likely to be used during construction and operational phase of the project. Emissions from DG sets must be taken into consideration while estimating the impacts on air environment. Examine and submit details.
- 16) Examine road/rail connectivity to the project site and impact on the traffic due to the proposed project. Present and future traffic and transport facilities for the region should be analysed with measures for preventing traffic congestion and providing faster trouble free system to reach different destinations in the city.
- 17) A detailed traffic and transportation study should be made for existing and projected passenger and cargo traffic.
- 18) Examine the details of transport of materials for construction which should include source and availability.

- 19) Examine separately the details for construction and operation phases both for Environmental Management Plan and Environmental Monitoring Plan with cost and parameters.
- 20) Submit details of a comprehensive Disaster Management Plan including emergency evacuation during natural and man-made disaster.
- 21) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
- 22) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.

**CONDITIONS TO BE STIPULATED IN ENVIRONMENTAL CLEARANCE FOR PAKTIA QUARTZ & QUARTZITE MINE OVER AN AREA OF 8.85 ACRES OR 3.581 HECTARES IN VILLAGE PAKTIA UNDER SARASKANA TAHASIL OF MAYURBHANJ DISTRICT OF SRI LALIT DAS - EC**

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**A. Specific conditions**

1. The Project Proponent shall obtain consent from the State Pollution Control Board, Odisha and effectively implement all the conditions stipulated therein.
2. Project Proponent shall appoint an Occupational Health Specialist for Regular and Periodical medical examination of the workers engaged in the Project and records maintained; also, Occupational health check-ups for workers having some ailments like BP, diabetes, habitual smokers, etc. shall be undertaken once in six months and necessary remedial/preventive measures taken accordingly. Recommendations of National Institute for Labour for ensuring good occupational environment for mine workers would also be adopted; All the old age people of the surrounding villages may be provided medical facilities.
3. Transport of minerals shall be done either by dedicated road or it should be ensured that the trucks/dumpers carrying the mineral should not be allowed to pass through the villages. The Project Proponent shall ensure that the road may not be damaged due to transportation of the mineral; and transport of minerals will be as per IRC Guidelines with respect to complying with traffic congestion and density.
4. Project Proponent shall ensure the safeguard and wellbeing of villagers and school, regular health monitoring of all residents in the area and the compliance Report shall be submitted to the Regional office of the Ministry and SEIAA, Odisha.

**B. Standard conditions**

1. A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the SEIAA, Odisha 5 years in advance of final mine closure for approval.
2. No mining activities will be allowed in forest area, if any, for which the Forest Clearance is not available.
3. No change in mining technology and scope of working should be made without prior approval of the SEIAA, Odisha.
4. No change in the calendar plan including excavation, quantum of mineral and waste should be made.
5. The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water (surface water and ground water) for the project.
6. Mining shall be carried out as per the provisions outlined in the approved mining plan as well as by abiding to the guidelines of Directorate General Mines Safety (DGMS).
7. Protection of vegetation in the surrounding areas, and proper storage of solid waste, subgrade ore and their use have to be given priority during mining operation.
8. Digital processing of the entire lease area using remote sensing technique shall be carried out regularly once in three years for monitoring land use pattern and report submitted to

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Ministry of Environment, Forest and Climate Change its Regional Office and SEIAA, Odisha.

9. Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of PM<sub>10</sub> and PM<sub>2.5</sub> such as haul road, loading and unloading point and transfer points. Fugitive dust emissions from all the sources shall be controlled regularly. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard. Monitoring of Ambient Air Quality to be carried out based on the Notification 2009, as amended from time to time by the Central Pollution Control Board.
10. Regular monitoring of ground water level and quality shall be carried out in and around the mine lease by establishing a network of existing wells and constructing new piezometers during the mining operation. The project proponent shall ensure that no natural water course and/or water resources shall be obstructed due to any mining operations. The monitoring shall be carried out four times in a year pre- monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board.
11. Transportation of the minerals by road passing through the village shall not be allowed. A 'bypass' road should be constructed (say, leaving a gap of at least 200 meters) for the purpose of transportation of the minerals so that the impact of sound, dust and accidents could be mitigated. The project proponent shall bear the cost towards the widening and strengthening of existing public road network in case the same is proposed to be used for the Project. No road movement should be allowed on existing village road network without appropriately increasing the carrying capacity of such roads.
12. The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day light/night hours.
13. Sufficient number of Gullies to be provided for better management of water. Regular Monitoring of pH shall be included in the monitoring plan and report shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office on six monthly basis.
14. There shall be planning, developing and implementing facility of rainwater harvesting measures on long term basis and implementation of conservation measures to augment ground water resources in the area in consultation with Central Ground Water Board.
15. The Project Proponent has to take care of gullies formed on slopes. Dump mass should be consolidated with proper filling/leveling with the help of dozer/compactors.
16. The reclamation at waste dump sites shall be ecologically sustainable. Scientific reclamation shall be followed. The local species may be encouraged and species are so chosen that the slope, bottom of the dumps and top of the dumps are able to sustain these species. The aspect of the dump is also a factor which regulates some climatic parameters and allows only species adopted to that micro climate.

17. The top soil, if any, shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation. The over burden (OB) generated during the mining operations shall be stacked at earmarked dump site(s) only and it should not be kept active for a long period of time. The maximum height of the dumps shall not exceed 8m and width 20 m and overall slope of the dumps shall be maintained to 45°. The OB dumps should be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles shall be undertaken for stabilization of the dump. The entire excavated area shall be backfilled and afforested. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office on six monthly basis.
18. Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, mineral and OB dumps to prevent run off of water and flow of sediments directly into the river and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly. The drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed both around the mine pit and over burden dumps to prevent run off of water and flow of sediments directly into the river and other water bodies and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material. Sedimentation pits shall be constructed at the corners of the garland drains and desilted at regular intervals.
19. Plantation shall be raised in a 7.5 m wide green belt in the safety zone around the mining lease, backfilled and reclaimed area, around water body, along the roads etc. by planting the native species in consultation with the local DFO/Agriculture Department and as per CPCB Guidelines. The density of the trees should be around 2500 plants per ha. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within first five years.
20. The Project Proponent shall make necessary alternative arrangements, where required, in consultation with the State Government to provide alternate areas for livestock grazing, if any. In this context, Project Proponent should implement the directions of the Hon'ble Supreme Court with regard to acquiring grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded against felling and plantation of such trees should be promoted.
21. The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna, if any, spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. A copy of action plan shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office.
22. As per the Company Act, the CSR cost should be 2 % of average net profit of last three years. Hence CSR expenses should be as per the Company Act/Rule for the Socio Economic Development of the neighborhood Habitats which could be planned and executed by the Project Proponent more systematically based on the 'Need based door to door survey' by established Social Institutes/Workers. The report shall be submitted to the

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Ministry of Environment, Forest and Climate Change and its Regional Office on six monthly basis.

23. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
24. Measures 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.
25. 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.
26. The project authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
27. The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment, Forest and Climate Change, its Regional Office, Central Pollution Control Board and State Pollution Control Board.
28. A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal.
29. State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and Collector's office/ Tehsildar's Office for 30 days.
30. The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment, Forest and Climate Change at [www.environmentclearance.nic.in](http://www.environmentclearance.nic.in) and a copy of the same should be forwarded to the Regional Office.
31. The SEIAA, Odisha may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.
32. 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.
33. 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.



## ANNEXURE- E

### STANDARD ENVIRONMENTAL CLEARANCE CONDITIONS TO BE STIPULATED IN ENVIRONMENTAL CLEARANCE FOR SAND MINING

#### Stipulated Conditions:

1. The project proponent should carry out River bed sand mining manually by engaging local laborers in force to check over exploitation of sand at the source.
2. Any change in the plan or quantity to be produced shall require prior approval of SEIAA.
3. There shall be a 'no working zone' to protect the embankment on both sides, road or rail bridge in the vicinity, if any, dam, weir, water intake structure of irrigation or drinking water project, or any cross drainage structure. 10 % of the width of river shall be left intact along the embankments on both sides as 'no mining zone'. Further, no mining shall be allowed within 200 m of any existing structures dam, weir, water intake structure of irrigation or drinking water project, or any cross drainage structure. In case of River Bridge, this no mining zone shall extend upto a minimum stretch of 200 meters from the bridge and it may extend upto 500 meters in sensitive locations. The lease area shall be accordingly curtailed to carve out the actual sand mining area within the leasehold. Exact map of the lease area, and the 'no mining zone' shall be drawn to scale, showing the DGPS coordinates of all corner points, and the location of the bridge, embankment, extraction route & other structures; and such map has to be submitted to SEIAA by the project proponent through the Tahasildar within three months of the date of issue of the EC. The quantum of sand allowed to be extracted will be worked out on the basis of the actual working area.
4. The lease area and the actual working area shall be demarcated on the ground by erecting durable masonry /concrete pillars by the project proponent.
5. The project proponent shall take prior statutory and regulatory clearance as required from the concerned authorities in respect of the project, before carrying out any operation.
6. Mining is not permissible within the water channel or stream flow area. No stream shall be diverted for the purpose of mining and no natural water course shall be obstructed. The mining or any ancillary activity shall not in any way disturb the flow pattern of the river water during the non monsoon period. There shall be no sand mining in the river during the rainy season or when there is flow of water in the river.
7. Sand mining operations shall not affect the existing sources for irrigation / drinking water / industrial purpose.
8. The natural sand dunes, if any, near or surrounding the lease area shall not be disturbed.
9. No transportation of the minerals shall ordinarily be allowed on any road passing through villages/habitations/forest land without prior explicit permission. Transportation

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of minerals through existing rural roads can be allowed only by the concerned Govt. Department/BDO and only after required strengthening, such that the carrying capacity of road is increased to handle the sand truck traffic. The project proponent shall bear the cost towards the widening and strengthening of existing public roads in case the same is proposed to be used for the project. No movement on any road is allowed on existing village road network without appropriately increasing the carrying capacity of such roads. Project proponent shall ensure that the road may not be damaged due to transportation of the mineral and transport of minerals will be as per IRC Guidelines with respect to complying with traffic congestion and traffic density. Plying of sand extraction trucks may be allowed on roads / path ways passing close to schools, temples, hospitals and such other public places only with prior written permission of competent authority.

10. Vehicles hired for transportation of sand from the site should be in good condition and should have pollution check certificate and should conform to applicable air and noise emission standards and should be operated only during non-peak hours.
11. The vehicles shall not be overloaded and shall be covered with Tarpaulin. The Tahasildar may collect an appropriate road maintenance levy from the lessee as part of the lease conditions on the basis of quantum of sand transported, and utilize the proceeds of the levy for proper maintenance of the extraction paths and roads to prevent their degradation on account of plying of sand trucks.
12. The project proponent shall take all precautionary measures against causing damage to flora and fauna of the locality. The PP shall plant and nurse to full establishment a minimum of 50 number of saplings of native tree species along the approach roads, river banks and in community areas in consultation with the Gram Panchayat.
13. Water spray should be made on the road/extraction paths to control dust emission during transportation of sand.
14. The Project Proponent shall undertake phased restoration, reclamation and rehabilitation of land affected by mining and completes this work before abandonment of mine.
15. Environmental Management Plan (EMP) shall be implemented by PP to ensure compliance with the environmental conditions specified above. The year wise funds earmarked for environmental protection measures shall be kept in separate account and shall be spent according to the plan proposed. Year wise progress of implementation of EMP shall be reported to the SEIAA, Odisha and OSPCB along with the compliance report.
16. The proponent shall take necessary measures to ensure that there is no adverse impact of the mining operations on the human habitation if any, existing nearby.
17. It shall be mandatory for the project management to submit quarterly compliance reports on the status of implementation of the above stipulated environmental safeguards to the SEIAA, Odisha / SPCB, Odisha/ Regional Office of the MoEF&CC, Bhubaneswar, in hard and soft copies on 1<sup>st</sup> day of January, April, July, October of each calendar year, failing which EC is liable to be revoked.

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18. River Bank stabilization shall be made through stone patching. Plantation of adequate number native species on river banks and both sides of haulage roads shall be made.
19. During transportation of sand, all traffic safety measures shall be taken to avoid any kind of accidents.
20. Bio - toilet provision shall be made.
21. Stone patching on river bank with plantation in-between and the ramp construction shall be done in consultation with and advice of concerned W.R.Deptt, Government of Odisha.
22. Necessary sprinkling on Haulage Road and Avenue plantation shall be done.
23. At the end of mine closure, the proponent shall immediately remove all the sheds put up in the quarry and all the equipment in the area before closure of the quarry.
24. The conditions stipulated in the environmental clearance will be closely monitored on the ground by the lease granting authority, i.e. the Tahasildar, who shall ensure compliance of the stipulated conditions and take corrective measures promptly in case of any non- compliance and also ensure that the project proponent submits quarterly compliance reports.
25. The concerned Regional Office of the MoEF&CC/ SPCB, Odisha shall periodically monitor compliance of the stipulated conditions as applicable for this project. The project authorities should extend full cooperation to the MoEF&CC officer(s)/SPCB officer(s) by furnishing the requisite data / information / monitoring reports.
26. A copy of the clearance letter shall be sent by the proponent to concerned Gram Panchayat /Panchayat Samiti /Zilla Parisad /Municipal Corporation / Urban Local Body as the case may be.
27. Project proponent shall obtain Consent to Operate from the OSPCB and effectively implement all the conditions stipulated therein. The mining activity shall not commence prior to obtaining Consent to Establish / Consent to Operate from the State Pollution Control Board.
28. The SEIAA, Odisha may revoke or suspend this EC, if implementation of any of the above conditions is not satisfactory. The SEIAA, Odisha reserves the right to alter /modify the above conditions or stipulate any further condition in the interest of environment protection.
29. The Project Proponent (lease holder) shall inform the SEIAA of any change in ownership of the mining lease. In case, there is any change in ownership or mining lease is transferred, then mining operation can be carried out only after transfer of EC as per provisions of the para 11 of EIA Notification, 2006, as amended from time to time.
30. Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this environment clearance besides attracting penal provisions in the Environment (Protection) Act, 1986.

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31. The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/ High Court and any other Court of Law relating to the subject matter.
32. This Environmental Clearance (EC) is subject to orders/judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable.
33. Any appeal against this environmental 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.

## Annexure - F

### ESSENTIAL PHYSICAL CRITERIA AS PER ENFORCEMENT AND MONITORING GUIDELINES FOR SAND MINING, JANUARY 2020 OF MOEF&CC, GOVT. OF INDIA

Sl. No.	Essential Criteria	Reference
1.	"No Mining Zone": 1/4th part of the river width (excluding 3/4th the central part of the river width) on both sides of the river towards the river bank	4.1.1 (Para - e) Page - 16
2.	a) Distance between two clusters : $\geq 2.5$ km b) Area of mining lease area is a cluster: $\leq 10$ ha.	4.1.1 (Para - k) Page - 19
3.	Concave River Bank : No extraction of sand	
4.	No mining if a) Upstream: Lease is 1 km from major Bridge and high ways or $5(x)$ of the Bridge / public civil structure / water intakes point subject to lease is located at a minimum 250 meter distance. Where $x$ = Span of the bridge. b) Downstream side: Lease is 1 km from the major bridge and Highways Or $10x$ of the bridge / public civil structure / water intake point Subject to lease is located at a minimum distance of 500 meter where $x$ = span of the bridge	4.3 (Para - h) Page - 23
5.	Mining depth : $\leq 3$ meter (maximum 3 meter)	4.3 (Para - m) Page - 24
6.	Mining distance from river bank: $1/4^{\text{th}}$ of the river width, But subject to not less than 7.5 meter	4.31 (Para - m) Page - 24
7.	Area for removal of minerals : $\leq 60\%$ of mine lease area	4.3 (Para - s) Page - 25
8.	Mineable sand per ha. Available for actual mining : $\leq 60,000$ MT/Annum	
9.	Regular replenishment study and replenishment rate	

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