



Ref. No. EMIL/GEOL/699/2019-20

Dated—23.11.2019 (By e-mail)

To

The Director,
Ministry of Environment, Forests & Climate Change
3rd Floor, Vayu Wing, Indira Paryavaran Bhavan
Jor Bagh Road, New Delhi - 110 003
INDIA

Sub: Submission of half-yearly EC compliance status for the period April-2019 to September-2019 in respect of Koira Iron Mine of Essel Mining & Industries Limited, Barbil.

Ref: 1. General condition no. 35 of Environment Clearance (EC) Vide letter No. 6634/SEIAA on dtd. 18.04.2019
2. SEIAA File No. 29874/29-NCMB1/11-2018
3. S.O. 5845(E), dated the 26th November, 2018

Sir,

With reference of the above we are submitting herewith the half-yearly EC compliance status along with environmental monitoring report in respect of Koira Iron Mines for the period of April-2019 to September-2019.

Thanking you,

Yours Faithfully,
For **ESSEL MINING & INDUSTRIES LTD.**

V. Srikanth
Jt. President (Operation)

Encl: As above.

- Cc: 1. The Addl. Director(S) Govt. of India, (Ministry of Env. & Forests) Eastern Regional Office, A/3, Chandrasekharapur, Bhubaneswar-751023.
e-mail: roez.bsr-mef@nic.in
2. The Member Secretary, State Pollution Control Board, Paribesh Bhawan, A/118, Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012.
e-mail: membersecretary@ospcboard.org
3. Sh R. C. Saxena (Scientist 'D' & Incharge), Central Pollution Control Board, Southern Conclave, Block 502, 5th & 6th Floors, 1582, Rajdanga Main Road, Kolkata - 700 107.
e-mail: zokolkatta.cpcb@nic.in
4. The Member Secretary, State Environment Impact Assessment Authority, Qr. No. 5R-F-2/1, Unit-IX, Bhubaneswar, Odisha- 751022.
e-mail: seiaaorissa@gmail.com

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HALF YEARLY COMPLIANCE REPORT OF ENVIRONMENTAL CLEARANCE CONDITIONS

01. Name of the Project: Enhancement of Production of Iron Ore from 4.0 million TPA to 6.0 million TPA of M/s. ESSEL MINING & INDUSTRIES LIMITED, at KOIRA IRON MINES, Sundargarh District of Odisha State.

02. MoEF Clearance No. & Date: Environment Clearance (EC) No. SEIAA, Odisha Ref No.6634/SEIAA dated.18.04.2019

03. SEIAA File No: 29874/29-NCMB1/11-2018

04. Period of Compliance Report: From 01.04.2019 to 30.09.2019.

<u>SL. NO.</u>	SPECIFIC CONDITIONS	COMPLIANCE STATUS
1.	This Environmental clearance is granted subject to any/all orders of Hon'ble Supreme Court of India, Hon'ble High Court of Odisha, Hon'ble NGT and any other Court of Law, as may be applicable to grant of EC to this project.	EMIL has complied all the orders passed by Hon'ble Supreme Court of India dated the 2nd August 2017 in Writ Protection (Civil) No.114 of 2014 in the matter of Common Cause versus Union of India and Ors applicable to Koira Iron Mines.
2.	This 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 applicable to this project to the satisfaction of the State Mines Department.	EMIL has complied with all the statutory requirements and judgement of Hon'ble Supreme Court of India dated the 2 nd August 2017 in Writ Protection (Civil) No.114 of 2014 in the matter of Common Cause versus Union of India and Ors. applicable to Koira Iron Mines. Being satisfied with the compliance status, the Steel & Mines Dept., Govt of Odisha allowed working of the mines.
3.	The Department of Mines, Government of Odisha shall ensure that mining operation shall not commence till the entire compensation levied, if any, for illegal mining is paid by the Project Proponent 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	EMIL has paid entire compensation levied by Department of Steel & Mines in compliance of the judgement of Hon'ble Supreme Court dated the 2nd August 2017 in Writ Protection (Civil) No.114 of 2014 in the matter of Common Cause versus Union of India and Ors and accordingly mining operation is continuing within the lease vide working permission order no. 663 dtd.16.02.2018 from Deputy Director of Mines, Koira Circle, Koira.

4.	The proponent shall comply with all the specific conditions as recommended by CSIR-NEERI on carrying capacity study (as applicable) in time bound manner.	<p>The CSIR-NEERI recommendation on carrying capacity study have been duly complied excepting</p> <p>(a) Transportation of minerals through conveyor to Railway Siding and (b) Construction of Parking Plaza for parking of the vehicles inside & outside the Mines.</p> <p>In view of arduous & steep terrain condition connecting Koira Iron Mines to nearby railway siding compounded with intervening pristine forest, the option for transportation through conveyor belt is unviable.</p> <p>Further, Koira Iron Mines does not have space within the lease for developing such infrastructure (parking plaza). Therefore, we propose to develop the same outside the lease area at the proximity of the mining lease. The site thus selected falls under Nuagaon village of Koira Tahsil bearing plot no.419, khata no.56, Kissam patit. We need only 2.0 acres of land for development of the parking plaza with other amenities. We have requested the Tahsildar, Koira for allocation of the said land on dated 21.02.2019. Till now, we have not received any allocation of the said land. On allocation of land, we will start constructing the parking plaza immediately. On the other hand, we have developed a parking space adjoining the mining lease to avoid any traffic congestion issue on stop-gap arrangement.</p>
5.	The Project Proponent shall obtain Consent to Operate from the State Pollution Control Board, Odisha and shall be responsible for effective implementation all of conditions stipulated therein.	EMIL has obtained Consent to operate for the enhanced capacity of iron ore production from 4 mtpa to 6 mtpa vide OSPCB letter no.-4532/IND-I-CON-1798 dated 13.05.2019. The CTO is valid up to 31.03.2021 and all the conditions are being complied.
6.	The Project Proponent shall carry out sustainable and scientific mining conform with the approved mining plan and accordingly, concurrent monitoring may be carried out by the Regional Office, MoEF & CC, Govt. of India, Bhubaneswar, Odisha State Pollution Control	Systematic & scientific mining planning is being carried out through the aid of sophisticated SURPAC software, highly energy efficient, eco-friendly HEMMs etc. The mine have been awarded 5-Star rating by Indian Bureau of Mines, Ministry of Mines, Govt. of

	Board and Department of Mines, Government of Odisha.	India for adopting sustainable mining practices at Koirra Iron Mines.
7.	The Project Proponent shall carry out monitoring of air quality parameters covered under NAAQS notification, 2009 and Fugitive dust emission monitoring as per the action plan submitted to the Ministry. The frequency of monitoring shall be governed by MoEF & CC, Govt. of India circular dated 27.05.2009 and Consent to Operate issued by Odisha State Pollution Control Board for ambient air and fugitive dust emission, respectively.	Parameters like PM10, PM2.5, SO2, NO2, CO are being monitored in Ambient air quality monitoring systems which is as per the NAAQ, 2009 standard. The frequency of monitoring of the above parameters are being monitored on daily basis covering 3 stations within core zone and twice in a week covering 3 stations in buffer zone based on the CSIR-NEERI recommendation. Apart from above manual ambient air quality monitoring, 3 nos. of continuous real-time AAQ monitoring stations (2 nos. in core zone and 1 no. in buffer zone) are in operation with data connectivity to OSPCB server. Similarly, fugitive dust monitoring covering SPM, RSPM is being carried out twice a week at 6 locations within the core zone. The frequency of monitoring is also being guided by the circular of MoEF & CC, Govt. of India and consent to operate issued by OSPCB, Odisha.
8.	No mining activities shall be allowed in forest area for which the Forest Clearance is not available.	Mining activities is restricted within the already diverted forest land of 59.458 ha as per the Stage-II Forest Clearance obtained from MoEF on 29th August 2013 vide letter no: - 8-102/2010-FC under F.C. Act, 1980.

<p>9.</p>	<p>Project Proponent should plant only native species for green belt development Plantation of local species should be carried out during the Monsoon Season.</p>	<p>Plantation over the specified area including a 7.5m wide green belt in the safety zone around the mining lease area is completed by native species such as teak, karanj, sisoo, chakunda, neem, babul etc. Similarly reclaimed area, OB dumps and haul roads are covered with annual plantation programme in consultation with local forest department. Density of the plants is being maintained at 2500 plants per ha.</p> <p>Against the proposal of 1000 saplings within the leasehold area, 1160 saplings are grown over the waste dumps, safety zone & reclaimed area under casualty replacement & gap planation during the period under review. Besides this about 800 nos of fruit bearing species distributed among the nearby schools and 30000 nos. of saplings distributed to villagers through Forest Dept. free of cost.</p>
<p>10.</p>	<p>The Proponent shall install online Ambient Air Quality Monitoring System and there should be system for display of digital AAQ data within 03 months at least at three locations as per wind direction. Online provisions of pH and turbidity meters at discharge points of STP and ETP and also at water storage ponds in the mining area may be made. Project Proponent should display the result digitally in front of the main Gate of the mine site.</p>	<p>Three numbers of online continuous ambient air quality monitoring stations have been established since October, 2017 in core and buffer zone of the mine lease area with data transmission facility through GPRS system to SPCB RTDAS server to monitor PM10, PM2.5, SO2, NOx, CO etc.</p> <p>Similarly, we have installed online pH & Turbidity sensors at discharge points of STP and ETP and also at rain water harvesting ponds within the mining lease area.</p> <p>A digital display board is also erected at the entry/exit gate of the mines for display of all the CAAQMS data as well as pH & Turbidity data of ETP, STP discharge points and Rain Water Harvesting structures.</p>

<p>11.</p>	<p>Project Proponent shall obtain the necessary prior permission from the Central Ground Water Authority (CGWA) in case of intersecting the Ground water table. The intersecting ground water table may be commenced only after conducting detailed hydrogeological study and getting necessary permission from the CGWA, MoEF & CC. The Report on six monthly basis on changes in Ground water level and quality shall be submitted to the Regional Office of the Ministry, CGWA and State Pollution Control Board.</p>	<p>Hydrogeological study of the core zone as well as buffer zone has been conducted. Based on the hydrogeological study and exploration work, it is established that ground water table is encountered at 480 m AMSL which is far below the ultimate pit limit of 501 m AMSL. Accordingly, we have obtained the NOC from the CGWA for drawal to the extent of 500 cubic meter of ground water per day vide letter no. 21-4(29)/SER /CGWA/2007-93 dated 11.01.2018. We have been submitting the ground water level & quality report to the Regional Office of the Ministry as well as Delhi Office, CGWA and State Pollution Control Board on quarterly basis.</p>
<p>12.</p>	<p>The project should also implement community Development and Welfare programme in the area of Health, Education and Environmental Protection.</p>	<p>The dedicated CSR wing is engaged for the community development. Various welfare & training programmes are being organized in the area in the field of health, education and environment. All these activities are carried by identifying the requirement through SIA study in the locality.</p>
<p>13.</p>	<p>Proponent shall appoint an Occupational Health Specialist for Regular and Periodical medical examination of the workers engaged in the Project and maintain records accordingly; also, Occupational health check-ups for workers having some ailments like BP, diabetes, habitual smoking, etc. shall be undertaken once in six months and necessary remedial/preventive measures taken accordingly. The Recommendations of National Institute for ensuring good occupational environment for mine workers shall be implemented; the prevention measure for burns, malaria and provision of anti-snake venom including all other paramedical safeguards may be ensured before initiating the mining activities</p>	<p>One Occupational Health Specialist along with two Pharmacists have been appointed for regular and periodical medical examination of the workers engaged in the project. Proper records of the activities are being maintained separately and are being compiled on monthly basis for reporting. Health check-up for occupational and lifestyle disorder is conducted at regular intervals and remedial/preventive measures are being taken accordingly. Complete range of medicines including treatment for burns, malaria and anti-snake venom are kept in stock to overcome the unforeseen medical issues. One critical care ambulance and one general ambulance have been deployed for taking care of the critical patients as well as to handle the referral medical cases.</p>

14.	Project Proponent shall run an awareness campaign on sanitation for women and utilization of Sanitary Napkin and also to distribute the Sanitary Napkin/pads to the women and provide the training for proper disposal.	Essel Mining & Industries Limited (EMIL) provided infrastructure & training to woman through various SHGs for meeting the objective. However, the company has promoted Kasturaba Gandhi Mahila Samiti SHG located at Barbil for production of sanitary napkin/pads.
15.	The regular monitoring of ground water table to be carried out by establishing a network of existing wells and constructing new piezometers. The reports shall be submitted at interval of six months to the Regional Office of the MoEF & CC, Govt. of India, Bhubaneswar and Odisha State Pollution Control Board.	<p>Regular monitoring of ground water level and quality in and around the lease area is being carried out on monthly basis. In addition to the above, 3 nos. of piezometers are already constructed for monitoring of ground water level and quality with digital water level recorder & telemetry facility. All the piezometers have been fitted with digital water level recorder with telemetry system.</p> <p>It is observed that the groundwater table is not depleted. On the other hand it is maintained because of various recharge structures constructed in the lease area as well as in nearby villages.</p> <p>The monitoring report is being sent to MOEF & CC & its regional office, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board, Odisha regularly in every quarter.</p>
16.	The water balance study/water auditing shall be carried out and measures for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF & CC, Govt. of India, Bhubaneswar and Odisha State Pollution Control Board. Whenever ground water is tapped, water meters shall be used to measure the quantum of water extraction.	Water Audit for the Koira Iron Mines has been conducted by engaging the reputed institute like NIT, Rourkela. Similarly Hydrogeological Study along with feasibility of Rain Water harvesting has also been conducted in the mine lease area covering 10 km radius from the lease boundary. The recommendations of the study are being implemented. All the water drawal points are fitted with water flow meters which are periodically calibrated & stamped by the concerned legal metrology inspector of Lahunipada block. Monthly water consumption statements are also being sent to the Executive Engineer, Dept. of Water Resources, Sundargarh.

17.	The Regular monitoring of water quality upstream and downstream of water bodies shall be carried out and record of monitoring data should be maintained and submitted at interval of six months to the Regional Office of the MoEF& CC, Govt. of India, Bhubaneswar and Odisha State Pollution Control Board.	Monitoring of both water quality & water flow rate at upstream and downstream of Karo nalla, Kurarhi nala and Koira (Orahuri) nalla are being carried out on monthly basis and record of monitoring data is being maintained and submitted to Ministry of Environment and Forests, its Regional Office, Bhubaneswar, Central Groundwater Authority, Regional Director, Central Ground Water Board, State Pollution Control Board and Kolkata zonal office of Central Pollution Control Board.
18.	The Plantation/Green belt at the periphery of the water body, particularly on eastern and western boundaries, shall be maintained in the mined out area in order to reduce the loss of surface water.	<p>Plantation over the specified area including a 7.5m wide green belt in the safety zone around the mining lease area is completed by native species such as teak, karanj, sisoo, chakunda, neem, babul etc. Similarly reclaimed area, OB dumps and haul roads are covered with annual plantation programme in consultation with local forest department. Density of the plants is being maintained at 2500 plants per ha.</p> <p>Against the proposal of 1000 saplings within the leasehold area, 1160 saplings are grown over the waste dumps, safety zone & reclaimed area under casualty replacement & gap planation during the period under review. Besides this about 800 nos of fruit bearing species distributed among the nearby schools and 30000 nos. of saplings distributed to villagers through Forest Dept. free of cost.</p>
SL. No.	GENERAL CONDITIONS	COMPLIANCE STATUS
1.	A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment, Forest and Climate Change (MoEF &CC), Govt. of India as well as SEIAA, Odisha 3 years in advance of final mine closure for approval.	The validity of the mining lease is upto 26.08.2021 as per section 8(A) (6) of MMDR (amendment) Act, 2015, when the minerals will not be exhausted completely. However, a FMCP with provision of corpus fund got approved from IBM, Bhubaneswar on dated. 09.10.2019.
2.	No change in mining technology and scope of working should be made without prior approval the SEIAA, Odisha.	No change in mining technology and scope of working has been made. The mine is operated with mechanized means using various

		equipment & machineries like drills, dozer, dumper, excavators, loaders, crushing & screening plants etc.									
3.	No change in the calendar plan including excavation, quantum of mineral and Waste should be made.	Calendar plan is being strictly adhered to and the excavation is being carried out well within the approved quantity of 6.0 MTPA. The excavation details achieved for the year FY 2019-20 i.e. up to September, 2019 are given in the following table.									
		<table border="1"> <thead> <tr> <th>Category</th> <th>Excavation Plan (2019-20)</th> <th>Achieved (April, 19 to Sept, 19)</th> </tr> </thead> <tbody> <tr> <td>ROM in Ton</td> <td>6000000</td> <td>2093383</td> </tr> <tr> <td>Waste in Cum</td> <td>223000</td> <td>140192</td> </tr> </tbody> </table>	Category	Excavation Plan (2019-20)	Achieved (April, 19 to Sept, 19)	ROM in Ton	6000000	2093383	Waste in Cum	223000	140192
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		ROM in Ton	6000000	2093383							
Waste in Cum	223000	140192									
4.	The project proponent shall obtain necessary prior permission of the competent authority for drawl of requisite quantity of water (surface water and ground water) for the project.	Necessary permission i.e. NOC for drawal to the extent of 500 cubic meter of ground water per day vide letter no. 21-4(29)/SER /CGWA/2007-93 dated 11.01.2018 has been obtained from CGWA, New Delhi and an water agreement signed with Irrigation department, Sundargarh for drawl of the same ground water. We have been paying the water tax regularly on monthly basis as per the demand notice served by the Irrigation dept., Sundargarh for the purpose.									
5.	Mining shall be carried out as per the provisions outlined in mining plan approved By Indian Bureau of Mines (IBM) as well as by abiding to the guidelines of Directorate General Mines Safety (DGMS).	Mining & allied activities are being carried out as per the proposal outlined in mining plan approved By Indian Bureau of Mines (IBM) as well as by abiding to the guidelines of Directorate General Mines Safety (DGMS).									
6.	The project proponent shall carry out scientific investigation in respect of blast induced ground vibration, fly rock & air blast. Based on this study, Project Proponent should design an effective blast design to curb blast induced menace and public annoyance. The Report shall be submitted to the SEIAA, Odisha as well as the Regional Office of the Ministry.	We have carried out scientific investigation for blast induced ground vibration, fly rock and air blast study through NIT - Rourkela and blast design is prepared and implemented accordingly to mitigate the adverse effect. The report is attached.									
7.	The lands which are not owned by Proponent, mining will be carried out only after obtaining the consents from all the concerned (and	The mining & allied activities are carried out over 78.513 Ha of surface right area only as granted by the appropriate authority.									

	owners as per the provisions of the Mineral Concession Rules, 1960 and MMDR Act, 1957.	
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 the SEIAA, Odisha as well as to the Ministry of Environment, Forest and Climate Change and it's Regional Office.	The details regarding digital processing of the entire lease area have been submitted to MoEF & CC Regional Office, Bhubaneswar vide this office letter no. EMIL/GEOL/237/217-18 dated.01.07.2017 in form of shape file. The shape file comprised of ML Boundary, safety zone area, reclaimed area and various other land use within the lease hold. The updated document has also been submitted to the Ministry of Environment Forest and Climate Change at the time of submission of the EC proposal for enhancement of iron ore production from 4 MTPA to 6 MTPA during the year 2018.
9.	The critical parameters of ambient air quality as per the Notification 2009 such as PM10, PM2.5, NO2 and SO2 etc. in the ambient air within the impact zone, peak particle velocity at 300m distance or within the nearest habitation, whichever is closer shall be monitored periodically. Further, quality of discharged water shall also be monitored [(TDS, DO, PH and Total Suspended Solids (TSS)]. The monitored data shall be uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in public domain. The circular No. J-20012/1/2006- IA.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for its compliance.	Parameters of ambient air quality such as PM10, PM2.5, SO2, NO2, CO are being monitored as per the NAAQ, 2009 standard and recommendation of CSIR-NEERI on carrying capacity study at Keonjhar, Sundargarh & Mayurbhanj Region in Odisha state. The above parameters are being monitored manually on daily basis covering three stations within core zone and twice in a week covering three stations in buffer zone. Apart from above manual ambient air quality monitoring, real-time AAQ monitoring at 03 stations are being carried out with data connectivity to OSPCB server. Similarly, fugitive dust monitoring covering SPM, RSPM is being carried out twice a week at 6 locations within the core zone. The peak particle velocity at the nearest habitation (villages in buffer zone) are being monitored on regular basis. The environmental monitoring data along with half yearly EC compliance status report of the mines uploaded in www.esselmining.com . The same data are also electronically displayed on a Digital Display Board installed near the main gate of the Company in public domain.

<p>10.</p>	<p>Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of PM10 and PM2.5 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.</p>	<p>Water sprinkling is being carried out through mobile water tanker at loading & unloading points along haul road. Screening & Crushing plants are equipped with dry fog system at all transfer points. Three nos. of mobile water tanker of capacity 28KL (2 nos.), 12 KL (1 nos.) are deployed for water sprinkling. Mist Gun spray arrangements have also been made at loading & unloading points, at Screening & Crushing plants. Ambient air quality parameters being monitored as per the NAAQ, 2009 standard and recommendation of CSIR-NEERI on carrying capacity study at Keonjhar, Sundargarh & Mayurbhanj Region in Odisha state. All the parameters of ambient air quality have been found to be well within the prescribed limits of Central Pollution Control Board.</p>
<p>11.</p>	<p>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 the SEIAA, Odisha as well as Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board.</p>	<p>Monitoring of ground water level and quality on monthly basis are being carried out within the lease area at the upstream, downstream. 3 nos. of piezometers are already constructed for monitoring of ground water level and quality with digital water level recorder & telemetry facility.</p> <p>The monitoring report is being submitted to MOEF & its regional office, Central Ground Water Authority and Regional Director, Central Ground Water Board regularly on quarterly basis.</p>

<p>12.</p>	<p>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 and 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 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.</p>	<p>Monitoring of both water quality & water flow rate at upstream and downstream of Karo nalla, Kurarhi nala and Koira (Orahuri) nalla are being carried out on monthly basis and record of monitoring data is being maintained and submitted to appropriate authority for information & record. Various protective measures taken in the surrounding villages such as renovation & de-siltation of the village ponds etc. for augmentation of ground water resources. Rain water harvesting measures have also been taken within the lease area. The company is providing potable drinking water to the nearby villagers. Regular monitoring of water table in open dug well located in nearby villages are carried out to ascertain the impact of mining over ground water table. Apart from this 03 numbers of digital water level recorder with telemetry system is fitted with each piezometer to measure the water level automatically both at core & buffer zone.</p>
<p>13.</p>	<p>Regular monitoring of water quality upstream and downstream of water bodies shall be carried out and record of monitoring data should be maintained and submitted to the SEIAA, Odisha as well as Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority, Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board.</p>	<p>Monitoring of both water quality & water flow rate at upstream and downstream of Karo nalla, Kurarhi nala and Koira (Orahuri) nalla are being carried out on monthly basis and record of monitoring data is being maintained and submitted to the SEIAA, Odisha as well as Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority, Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board.</p>
<p>14.</p>	<p>Transportation of the mineral by road passing through 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</p>	<p>The minerals are being transported through railways using public sidings only. No Village is encountered while shipment of material to such public sidings. On the other hand, the road connecting the mines to NH and SH are concreted / black topped and widened by the company to avoid any adverse impact in the locality.</p>

	allowed on existing village road network without appropriately increasing the carrying capacity of such roads.	
15.	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/ masts away from the villagers and keeping the noise levels well within the prescribed limits for day light/night hours.	The mine is far away from human habitation. However, various technologies are used to reduce the noise level from the mining & mineral processing plants. Thick green vegetation cover (safety zone) around the lease is being maintained to absorb noise from the area apart from various other measures. Noise levels are maintained within the prescribed limits both for day light/night hours. The floodlights/ masts are oriented in a manner to avoid any disturbance during night to the nearby villagers.
16.	Main haulage road in the mine should be provided with permanent water sprinklers and other roads should be regularly wetted with water tankers fitted with sprinklers. The material transfer points should invariably be provided with Bag filters and or dry fogging system. In case of Belt-conveyors facilities the system should be fully covered to avoid air borne dust; Use of effective sprinkler system to suppress fugitive dust on haul roads and other transport roads shall be ensured.	Three nos. of mobile water tanker of capacity 28KL (2 nos.), 12 KL (1 nos.) are deployed for water sprinkling over the mines haulage road. Mist Gun spray arrangements have also been made at loading & unloading points, at Screening & Crushing plants. All the belt conveyors are clad with GI Sheet to avoid air borne dust. Mobile water tankers are being engaged on other transportation roads for dust suppression. The road connecting the mines to NH-520 and State Highway is concrete & blacktopped to address the concern.
17.	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.	Based on the contour settling pits, garland drains, check dams and gullies plugs are maintained for surface run off management. Run off management in terms of water quality including pH is measured regularly. Flocculants added to the muddy water for silt settlement. The report is being submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office on six monthly basis.

<p>18.</p>	<p>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.</p>	<p>Even though the area falls under safe category as per the CGWA guideline, water conservation measures have been made by collecting rain water in the mining lease area such as construction of Rain water harvesting pond, check dams, settling pits to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board. Rain water harvesting ponds have been made within the leasehold area. The technical feasibility report on rain water harvesting duly approved by CGWA is being religiously followed.</p> <p>Apart from this, renovation & de-siltation of village ponds are being undertaken within the 5 Km radius from the mine boundary. Thus effecting the ground water recharge & resource augmentation.</p>
<p>19.</p>	<p>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.</p>	<p>Wherever required catch water drains, check dams are constructed to check the gully formation. All the dead waste dumps are already stabilized by terracing, coir matting, grass seeding followed with afforestation programme. No more surficial external dumping is in practice during the period under review. The waste rocks / overburden /inter-burden generated from the mine workings are being utilized for pit back filling purpose in quarry no.6.</p>
<p>20.</p>	<p>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</p>	<p>As regards reclamation, all the inactive dumps have been stabilized /rehabilitated through afforestation programme. The plant species grown over the waste dumps are of native variety for making it ecologically sustainable. The rehabilitated dumps are being monitored for five years to ensure self-sustenance of the vegetation.</p>
<p>21.</p>	<p>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 Operations shall be stacked at earmarked dump site(s) only and it should not</p>	<p>At present the mining activities is restricted to already broken up area only. The mining operations are confined on existing mine benches. However, during mining operation, while working in virgin area if top soil will be</p>

	<p>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 geotextiles 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</p>	<p>encountered, it will be stacked separately and used for plantation, reclamation and rehabilitation of mined out area etc. On exhaustion of ore, the mined out quarry will be back filled and scientifically vegetated with suitable native species. Wherever required, geotextile shall be used. The compliance status report is submitted to the MoEF & cc and its regional office on six monthly basis.</p>
<p>22.</p>	<p>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.</p>	<p>Catch drains and siltation ponds of appropriate size are constructed to prevent run off of water and flow of sediments directly into the nearby water bodies. Based on the contour, slope/gradient garland drains, settling pits of appropriate dimensions are constructed to channelize the surface run off to the rain water harvesting pond. The water so collected is being utilized for watering the mine area, roads, green belt development etc. The drains are regularly desilted and maintained properly.</p> <p>The sump capacity is sufficient to hold the peak rainfall. Sedimentation pits have been constructed at the corners of the garland drains to take care of runoff during peak sudden rain fall and they are desilted regularly before and after the monsoon.</p>

<p>23.</p>	<p>Plantation shall be raised in a 7.5m 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.</p>	<p>Plantation over the specified area including a 7.5m wide green belt in the safety zone around the mining lease area is completed by native species such as teak, karanj, sisoo, chakunda, neem, babul etc. Similarly reclaimed area, OB dumps and haul roads are covered with annual plantation programme in consultation with local forest department. Density of the plants is being maintained at 2500 plants per ha.</p> <p>Against the proposal of 1000 saplings within the leasehold area, 1160 saplings are grown over the waste dumps, safety zone & reclaimed area under casualty replacement & gap planation during the period under review. Besides this about 800 nos of fruit bearing species distributed among the nearby schools and 30000 nos. of saplings distributed to villagers through Forest Dept. free of cost.</p>
<p>24.</p>	<p>Project Proponent shall follow the mitigation measures provided in Office Memorandum No. Z-11013/57/2014-IA.II (M), dated 29th 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", if any, applicable to the project.</p>	<p>No Villages/habitations within the leasehold area. On the other hand, the habitations and villages are located at far off distance to have any impact due to mining activities. However, adequate mitigation measures are adopted to curb any impact in the surroundings.</p>
<p>25.</p>	<p>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.</p>	<p>No acquisition of grazing land by the company. On the other hand ANR plantation done in degraded land beyond the lease area to help the grazing by the livestock.</p>

<p>26.</p>	<p>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.</p>	<p>No endangered fauna spotted in the lease area. We have installed the solar fence all along the lease boundary for protection of the wild animals. A site specific Wildlife conservation plan for protection of fauna found in the buffer zone is being approved by PCCF (Wildlife)-cum-Chief Wildlife Warden vide letter no. 8752/1WL(C) SSP-268/2011 on dtd. 30th Dec 2011. For implementation of the conservation plan an amount of Rs. 120.00 lakhs has been deposited with State Forest Department towards the buffer zone activity and an amount of 60.00 lakhs is to be spent within the leasehold area in consultation with local forest department which under progress. The copy of the Wild Life Conservation Plan depicting various action plans already submitted to Regional Office.</p>
<p>27.</p>	<p>Project proponent has to complied the corporate environment Responsibility (CER) as per the provisions mentioned in the OM of Ministry no 22-65/2017.1A-III dated 1st May, 2018 based on local needs and action plan with financial and physical breakup/details shall be prepared and submitted to the Ministry's Regional Office located at Bhubaneswar. Implementation of such program shall be ensured accordingly in a time bound manner.</p>	<p>EMIL in accordance to the MoEFCC's office Memorandum # F.No. 22-65/2017-IA.III dated 01.05.2018 has budgeted an amount of Rs 37.8 Lakhs. The activities for implementation are listed based on the Public hearing issues and Need Based Study in the Final EIA Report as per the requirement. The same is under implementation now.</p>
<p>28.</p>	<p>Provision shall be made for the housing of construction labor within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.</p>	<p>Housing for the construction labor within the site with all necessary infrastructure and facilities such as fuel for cooking, toilets, STP, safe drinking water, medical health care, crèche etc. is being provided.</p>

<p>29.</p>	<p>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.</p>	<p>In order to control the noise levels shock absorbent linings are provided in vibrating parts, the machineries & equipments are properly maintained & up kept. Controlled blasting techniques using delay detonators are adopted to mitigate noise & vibration problem. Rock breakers are being used to avoid secondary blasting. Personal Protective Equipments like ear plugs/muffs are provided to workers engaged in operations of HEMMs etc.</p>
<p>30.</p>	<p>Industrial waste water (workshop and waste water from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.</p>	<p>One STP having capacity 10KLD is in operation at canteen as well as in office area to treat the waste water generated from these two sources. Similarly, one STP having capacity 50 KLD is in use at colony which is situated away from the mine lease area. The treated water from the colony STP is used for gardening purpose & cleaning of pavement etc. A full-fledged workshop with ETP (capacity-2kl/hour) & oil-grease trap facility exist within the workshop premise for treatment of workshop effluent. The water is recycled & reused for vehicle washing purpose without any discharge to outside.</p>
<p>31.</p>	<p>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.</p>	<p>Nose masks are provided to the personnel working in the dusty areas. Requisite trainings is also imparted to the workers/employees at the entry level as well as periodically at our vocational training center on safety and health aspects.</p>
<p>32.</p>	<p>A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.</p>	<p>A separate Environmental Management cell is in place consisting of geologists, environmentalists, chemists, horticulturist, medical officers etc. who reports directly to Joint President (Operations), Head of the Cell. The cell is responsible for effective implementation of environment protection measures and to monitor the routine environmental performance within the core & buffer zone of the lease area.</p>

<p>33.</p>	<p>The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office.</p>	<p>Account of expenditure for Environmental protection is maintained separately and are spent only for environment related purposes. During the year 2018-19 an amount of Rs. 1,95,09,912.00 was spent towards environmental protection measures. Year wise expenditure for the period 2018-19 is submitted to MoEF's Regional Office on dtd. 15.05.2019 vide our letter no. EMIL/GEOL/139/2019-20.</p>
<p>34.</p>	<p>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.</p>	<p>This is an ongoing mining project & is operational since 1975. Accordingly the clause is not applicable to us.</p>
<p>35.</p>	<p>The project proponent shall submit six monthly reports on the status of Implementation of all the above stipulated environmental safeguards to (1) the Ministry of Environment, Forest and Climate Change, (2) its Regional Of Bhubaneswar, (3) Central Pollution Control Board and (4) State Pollution Control Board; and shall update and upload the compliance report on the Ministry's website. By 15th October, 2019. The Project Proponent has to submit full scale compliance report on all EC conditions to SEIAA, failing which the EC is liable to be summarily revoked.</p>	<p>Six monthly reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored data (both in hard copies as well as by e-mail) are being sent to the Ministry of Environment and Forests, its Regional Office at Bhubaneswar, the respective Zonal Office of Central Pollution Control Board at Kolkata and the State Pollution Control Board, Bhubaneswar.</p> <p>The status of compliance of the environmental clearance conditions, including results of monitored data are being uploaded in our company's website i.e., www.esselmining.com and are updated the same periodically.</p> <p>Simultaneously the above data are being sent to the Regional Office of the MoEF & CC Bhubaneswar, the Zonal Officer of Central Pollution Control Board, Kolkata and the State Pollution Control Board. Full scale compliance report on all EC conditions has been submitted to SEIAA on dtd.15.10.2019.</p>

36.	The Regional Office of this Ministry shall monitor compliance of the stipulated Conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data/information/monitoring reports.	We are extending full co-operation during inspection by MoEF officers of Regional Office, Bhubaneswar by furnishing the requisite data/ information/ monitoring reports etc.
37.	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.	Copy of environment clearance letter has been submitted to the Koira Gram Panchayat, Zila Parisad for information. The environment clearance letter also put on the website of the Company.
38.	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.	Environment clearance letter displayed by State Pollution Control Board for 30 days at the Regional Office, District Industry Centre and Collector's Office/ Tehsildar's Office.
39.	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 and a copy of the same should be forwarded to the Regional Office.	Information regarding obtaining the EC along with the availability of clearance letter with SPCB and MoEF website have been duly published in two widely circulated newspaper "The Prameya" (Odia daily) and "The New India Express" (English daily) on dated 22.04.2019. The copy of publication have also been forwarded to the Regional Office MoEF, Bhubaneswar.
40.	The SEIAA, Odisha or any other competent authority may alter/modify the above Conditions or stipulate any further condition in the interest of environment protection.	Agreed.
41.	Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.	Agreed.

42.	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 of Odisha and any other Court of Law relating to the subject matter.	Agreed.
43.	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.	Agreed.


V. Srikanth
Joint President (Operation)