



Ref. No. EMIL/GEOL/ 523 /2017-18

Dated—20.11.2017

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-2017 to September-2017 in respect of Jilling Langalota Iron & Manganese Mines of Essel Mining & Industries Limited, Barbil.

Ref: General condition no.xiv of Environment Clearance (EC) Vide letter No. J-11015/959/2007-IA.II (M) on 07.06.2012.

Sir,

With reference of the above we are submitting herewith the half-yearly EC compliance status along with environmental monitoring report in respect of Jilling Langalota Iron & Manganese Mines for the period of April-2017 to September-2017.

Thanking you,

Yours Faithfully,
For ESSEL MINING & INDUSTRIES LTD.

V Srikanth
Jt. President (Operation & Project)

Encl: As above.

- Cc: 1. The Addl. PCCF (Central) Govt. of India, (Ministry of Env't, Forest & CC) Eastern Regional Office, A/3, Chandrasekharpur, 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 'E' & In charge), Central Pollution Control Board, Southern Conclave, Block 502, 5th & 6th Floors, 1582, Rajdanga Main Road, Kolkata - 700 107.
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HALF YEARLY COMPLIANCE REPORT ON CONDITIONS STIPULATED IN ENVIRONMENTAL CLEARANCE

01. Name of the Project: JILLING LANGALOTA IRON & MANGANESE MINES of M/s. ESSEL MINING & INDUSTRIES LIMITED, Barbil, Keonjhar, Odisha

02. MoEF Clearance Letter. No. & Date: Environment Clearance (EC) No. J-11015/959/2007-IA.II (M) dated 07.06.2012.

03. Period of Compliance Report: From 01.04.2017 to 31.09.2017.

Sl. No	Special Conditions	Compliance status
i	The Environmental clearance is co-terminus with the mine lease.	The environment Clearance is valid for a period of 30 years from the date of issue of this EC letter i.e., 07.06.2012 as per the circular No. J-11011/15/2012-IA. II (M) dated 20.03.2015 of MoEF & CC. However, the Mine lease period will expire on 31.03.2020 as per the new MMDR (amendment) Act, 2015.
ii	No mining shall be carried out in the forestland involved in the project without obtaining requisite prior forestry clearance under the Forest (Conservation) Act, 1980 for forest land involved in the project. The environmental clearance is subject to grant of forestry clearance.	The mine has obtained the stage-II Forest Clearance vides MoEF 's letter no. 8-49/98- FC (Pt) dated 8 th October, 2014 over an area of 342.602 ha of forest land involved in the project.
iii	The project proponent shall obtain Consent to Establish and Consent to Operate from the State Pollution Control Board, Orissa and effectively implement all the conditions stipulated therein.	Consent to Establish for production of 6.28 MTPA has been obtained from the State Pollution Control Board, Orissa vide letter no. 21997/IND-II-NOC-5189 dated 24.12.2010. The consent to operate for 6.28 mtpa has also been obtained from State Pollution Control Board, Orissa vide letter No. 2357/IND-I-CON-248, dated. 18.02.2017 and the consent order is valid up to 31st March 2018. All the stipulations made by OSPCB in their Consent to Establish & Consent to operate are being complied.

iv	<p>The mining operations shall be restricted to above ground water table and it should not intersect the groundwater table. In case of working below the ground water table, prior approval of the Ministry of Environment and Forests and the Central Ground Water Authority shall be obtained, for which a detailed hydro-geological study shall be carried out.</p>	<p>Present depth of mining operations is at 482 m RL and the level of ground water table is at 400 m RL in lease area. Till date, we have not encountered the ground water table by mining activity. However, necessary permission will be obtained from CGWA and MoEF in case of working below the Ground water table. However, during the appraisal period (April, 2017 to September, 2017) mining operation is suspended temporarily.</p>
v	<p>Adequate safety zone as per the guidelines of DGMS on both sides of Dalco nallah passing through the lease area shall be left as no mining zone and no waste shall be dumped within this safety zone.</p>	<p>The existing waste dumps are beyond 50m distance from Dalco nallah and the portion of the inactive dumps has been stabilized by coir mat & plantation. No mining activity is being carried out within the safety zone of 50m along the side of Dalco nallah. However, during the appraisal period (April, 2017 to September, 2017) mining operation is suspended temporarily.</p>
vi	<p>The Company shall submit within 3 months their policy towards Corporate Environment responsibility which should inter-alia provide for (i) standard operating process / process to bring into focus any infringement/ deviation/ violation of the environmental or forest norms/ conditions, (ii) Hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the EC conditions and (iii) system of reporting of non-compliance/ violations of environmental norms to the board of Directors of the company and/ or shareholders or stakeholders.</p>	<p>The detail as required is already submitted to the Ministry at the time of submission of final EIA EMP.</p>
vii	<p>The project proponent shall ensure that no natural watercourse and/or water resources shall be obstructed due to any mining operations. Adequate measures shall be taken for conservation and protection of the 1st and 2nd order streams, if any emanating or passing through the mine lease during the course of mining operation.</p>	<p>No natural watercourse or water resources are obstructed due to our mining operations. Further, no first order and the second order streams are emanating from the mine lease area. Dalco nallah is passing through the leasehold area and we have constructed retaining wall on both side of nallah to prevent erosion and maintain safety zone of 50 mtr width on either side of Dalco nallah with plantation programme.</p>

viii	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.	At present mining operation suspended temporarily. However, in future after resumption of mining operation, while working in virgin area if top soil will be encountered, it will be stacked separately and used for greenbelt development, reclamation and rehabilitation of mined out area etc.
ix	The project proponent shall carry out conditioning of the ore with water to mitigate fugitive dust emission, without affecting flow of ore in the ore processing and handling areas.	To mitigate fugitive dust emission conditioning of the ore with water (dry fog system) is carried out without affecting flow of ore in the ore processing and handling areas. However, during the appraisal period (April, 2017 to September, 2017) mining operation is suspended temporarily.
x	The effluent from the ore beneficiation plant shall be treated in the tailing thickener and the tailings slurry shall be transported through a closed pipeline to the tailing dam.	Due to suspension of mining operation since January, 2014 on administrative ground and lurking uncertainty of resumption of mining operation in the backdrop of WPC No. 114/2014 in the matter of common cause vs union of India pending at Hon'ble Supreme Court of India, the decision regarding commissioning of the beneficiation plant could not be taken as of now. Accordingly the clause is not applicable as of now.
xi	The tailing dam shall be lined on all the sides as well as in the bottom with 0.5 mm thick HDPE lining.	All the sides as well as the bottom will be lined with 0.5 mm thick HDPE lining during the construction of tailing ponds.
xii	The decanted water from the tailing dam shall be re-circulated and there should be zero discharge from the tailing dam.	The decanted water from the tailing dam shall be re-circulated when both the beneficiation plant and tailing ponds are operational and there will be zero discharge from the tailing dam.
xiii	Appropriate technology shall be used for maximum recovery of ore in order to reduce slurry discharge and to increase the life of the tailing dam.	This will be ensured when both the beneficiation plant and tailing ponds are operational.

xiv	<p>The project proponent shall constitute an emergency management team under the control of project in charge to deal with the emergency situation pertaining to the tailing dam for the timely and effective control of emergency situation. It shall be ensured that training programme and mock drills shall be organized for the employees.</p>	<p>Emergency preparedness procedure is already in place to meet the emergency situations. However, after the tailing ponds are constructed and operational, the expected emergency situations arising because of tailing pond management shall be included and mock drills shall be organized for the employees to deal with the emergency situation pertaining to the tailing dam.</p>
xv	<p>The over burden generated during the mining operation shall be stacked at earmarked dump site(s) only and it should not be kept active for a long period of time and its phase-wise stabilization shall be carried out. The maximum projected height of dump shall be 30m. Proper terracing of the OB dumps shall be carried out so that the overall slope of the dump shall be maintained to 28°. The over burden dump shall 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. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment & Forests and its Regional Office located at Bhubaneswar on six monthly basis.</p>	<p>OB dump management is carried out as per approved mining plan and are stacked within the earmarked area. Inactive portions of the OB dump are gradually stabilized and rehabilitated by plantation. The slope of the dump is terraced and the overall slope angle is maintained at less than 28 degree. Retaining walls have been constructed around the dumps to arrest the wash off effectively. As regards reclamation of excavated land, this will be done as per progressive mine closure plan and shall be achieved at the end of life of mine. So far all the inactive dumps have been stabilized /rehabilitated through afforestation programme. The rehabilitated dumps are being monitored for five years to ensure self-sustenance of the vegetation.</p> <p>Compliance status is being submitted regularly to the Ministry of Environment & Forests and its regional office located at Bhubaneswar once in every six months. However, no work related to OB dump management except plantation is carried out due to temporary discontinuance of mining operation during this period (April, 2017 to September, 2017) under review.</p>

xvi	<p>Catch drains and siltation ponds of appropriate size shall be constructed around the tailing ponds, mine working, soil, OB and mineral dump(s) to prevent run off of water and flow of sediments directly into the Dalco nallah, the Baitarani 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 the monsoon and maintained properly.</p> <p>Garland drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed around the tailing ponds, mine pit, soil, OB and mineral dump(s) to prevent run off of water and flow of sediments directly into the Dalco nallah, the Baitarani 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 Dalco nallah, the Baitarani river and other water bodies. 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>Sedimentation pits have been constructed at the corners of the garland drains to take care of runoff of water during peak sudden rain fall and they are desilted regularly during and after the monsoon.</p> <p>However, no work related to garland drains, settling pits, check dams etc. except plantation is carried out due to temporary discontinuance of mining operation during this period under review.</p>
xvii	<p>Dimension of the retaining wall at the toe of the over burden dumps and the OB benches within the mine to check run-off and siltation shall be based on the rain fall data.</p>	<p>Retaining wall(1.5m height) have been constructed at the toe of the OB dumps to check run-off and siltation of low lying lands</p>

xviii	Plantation shall be raised in an area of 295.499ha including a 7.5m wide green belt in the safety zone around the mining lease by planting the native species around reclaimed area, mine benches, tailing ponds along the roads etc. in consultation with the local DFO/Agriculture Department. The density of the trees should be around 2500 plants per hectare. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within first five years.	Plantation over an area of 295.499 ha shall be achieved at the end of the life of mine. However, plantation over 7.5m greenbelt is completed. Further, plantation is being carried out by native species such as teak, karanj, sisoo, chakunda, neem, babul etc on the dump slopes and along the side of the roads. Density of the plants is being maintained at 2500 plants per ha. During this current financial year 2017-18, we have planted 9800 saplings within the lease area covering green belt, OB dump, vacant land & other area as on date.
xix	Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as around crushing and screening plant, loading and unloading point and transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.	Static water sprinkler has been installed in critical areas prone to air pollution and having high levels of particulate matter such as around crushing and screening plant and mobile water tanker is used at loading, unloading point, transfer points and on the haul roads. Regular monitoring of ambient air quality is being carried out and the results are found well within the permissible limits as prescribed by the Central Pollution Control Board.
xx	Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease area shall be carried out and records maintained.	Regular monitoring of the water flow rate of Dalco nalla is being carried out on monthly basis and records are being maintained & submitted to MoEF & its regional office, OSPCB, CPCB on half yearly basis.
xxi	The project authority should implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.	Water conservation measures have been made for 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. Two nos. of rain water harvesting ponds have been made within the leasehold area.
xxii	Regular monitoring of ground water level and quality shall be carried out in and around the mine lease, including beneficiation plant and tailing ponds by establishing a network of existing wells and installing new piezometers during the	Regular monitoring of ground water level and quality is being carried out at the upstream, downstream and within the lease hold area. We have already established three numbers of piezometers covering core and buffer zone for regular monitoring of ground water level

	<p>operation. The periodic monitoring [(at least four times in a year- pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January); once in each season)] shall be carried out in consultation with the State Ground Water Board/Central Ground Water Authority and the data thus collected may be sent regularly to the Ministry of Environment and Forests and its Regional Office Bhubaneswar, the Central Ground Water Authority and the Regional Director, Central Ground Water Board. If at any stage, it is observed that the groundwater table is getting depleted due to the mining activity; necessary corrective measures shall be carried out.</p>	<p>and quality. We are also monitoring the depth of water available in the dug wells located outside the lease hold area in buffer zone. The report is being sent to MOEF and its Regional Office Bhubaneswar, Central Ground Water Authority and Regional Director Central Ground Water Board regularly.</p> <p>The ground water level and quality monitoring results are enclosed as Annexure I.</p>
xxiii	<p>The project proponent shall obtain necessary prior permission of the competent authorities for drawal of requisite quantity of water (surface water and ground water), if any, required for the project.</p>	<p>We have signed an agreement with the Dept. of Water Resources, Govt. of Odisha and we have been utilizing both surface water & ground water for our industrial & domestic use. Accordingly we have been paying the special water rate to the Dept. of Water Resources, Govt. of Odisha as per the agreement quantity. We have also obtained the NOC from the CGWA for drawal to the extent of 1564 cubic meter of ground water per day. The renewal application for NOC has been filed on dtd. 27.02.2017.</p>
xxiv	<p>Appropriate mitigative measures shall be taken to prevent pollution of the Baitarani River in consultation with the State Pollution Control Board.</p>	<p>The Baitarani River is flowing at a distance of 1 km from the lease boundary. There is no pollution of Baitarani river due to the mining activities. The over burden/waste dumps are stabilized by coir matting, terracing and plantation programme and protected all around by retaining wall and garland drain etc.</p> <p>Such mitigative measures have prevented pollution of the Baitarani river to a great extent.</p>

xxv	The project proponent shall practice suitable rainwater harvesting measures on long term basis and work out a detailed scheme for rainwater harvesting in consultation with the Central Groundwater Authority and submit a copy of the same to the Ministry of Environment and Forests and its Regional Office, Bhubaneswar.	A scheme on Rain Water Harvesting & Artificial Ground Water Recharge has been prepared in consultation with Regional Director, CGWB, Bhubaneswar & duly approved by CGWA, New Delhi and same is under the process of implementation now.
xxvi	Vehicular emissions shall be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.	Emission checks for all the vehicles are carried out by company's well equipped workshop to ensure emission levels within permissible limit. However, the mining operation and allied activities are discontinued during this period under review. So no activities in connection with vehicle checkup are conducted during this period.
xxvii	No blasting shall be carried out after the sunset. Blasting operation shall be carried out only during the daytime. Controlled blasting shall be practiced. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented.	Blasting is carried out during day time i.e. 4:30 PM to 5:30 PM. Controlled blasting technique using delay detonator is also adopted to control ground vibration and arrest of fly rock etc. However, the mining operation and allied activities are discontinued during this period under review. So no activities in connection with the blasting are conducted during this period.
xxviii	Drills shall either be operated with the dust extractors or equipped with water injection system.	The drills used in mines are equipped with DCT system i.e., there is provision of dust extraction as well as dust suppression system with injection of water. To make it further effective, mock gels are also used in the fractured strata as & when required.
xxix	Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.	The Mineral handling areas and transfer points are provided with dry fog system for effective dust suppression. Extensive water sprinkling by static sprinklers and mobile water sprinklers is also carried out in loading and unloading areas and at transfer points. However, the mining operation and allied activities are discontinued during this period under review.

xxx	Sewage treatment plant shall be installed for the colony. ETP shall also be provided for the workshop and wastewater generated during the mining operation.	The STP of 100 KLD and ETP of 10 KLD capacity installed at colony and workshop area respectively for treatment of waste water. Iron ore mining involves dry process, there is no generation of process water. Hence no discharge. However, the run off generated during monsoon is being channelized through a series of garland drains to the settling pits constructed at toe of the waste & OB dumps and other operational areas. The quality of the surface run-off accumulated in the settling pit is being monitored & the concentration is found to be well within the permissible limit.
xxxii	Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.	Pre-placement medical examination (IME) and Periodical medical examination (PME) of the workers engaged are conducted regularly. The schedule of Periodical Medical Examination is once in every 3 years for the employees of age more than 40 years and once in 5 years for the employees less than 40 years.
xxxiii	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, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	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. has been provided.
xxxiiii	Digital processing of the entire lease area using remote sensing technique should be done regularly once in three years for monitoring land use pattern and report submitted to MOEF and its 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/236/217-18 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.

xxxiv	<p>The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna namely elephant etc. spotted in the study area. All the safeguard measures brought out in the approved Wildlife Conservation Plan prepared specific to the project site shall be effectively implemented in consultation with the State Forest and Wildlife Department. A copy of approved wildlife conservation plan shall be submitted to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar.</p>	<p>The area does not fall within National Parks, Sanctuaries, Biosphere Reserves, Wildlife corridors, Tiger/Elephant reserves nor do the same exist within 10 km of the mining lease area. Therefore, clearance under the Wildlife (Protection) Act, 1972 is not applicable in case of Jilling Mines. However, a site specific Wildlife conservation plan is approved by PCCF (Wildlife)-cum-Chief Wildlife Warden vide letter no. 10895 on 15/12/2010.</p> <p>A copy of approved wildlife conservation plan has already been submitted to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar vide our office letter no.839 dated 04.12.2012.</p>
xxxv	<p>The critical parameters such as RSPM (Particulate matter with size less than 10micron i.e., PM10) and NO_x in the ambient air within the impact zone, peak particle velocity at 300 m 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 and Forests, which is available on the website of the Ministry www.envfor.nic.in shall also be referred in this regard for its compliance.</p>	<p>Ambient air quality monitoring covering RSPM and NO_x is being carried out in core & buffer zone of the ML area.</p> <p>Peak particle velocity at the time of blasting is also monitored regularly at 300m distance. Similarly, the quality of water accumulated within the settling pit during rainy season is also being monitored as per guideline. The report is being submitted to the Ministry's Regional Office at Bhubaneswar and to the State Pollution Control Board/Central Pollution Control Board regularly. The monitored data is being uploaded in the website of the company as well as displayed on the main gate of the company in public domain. The environmental monitoring report during this compliance period is enclosed in Annexure-I.</p>

xxxvi	A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval	A progressive mine closure plan approved by IBM is in place. The final mine closure plan along with details of Corpus fund will be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure as advised. However, FMCP to be submitted by 31.03.2018 as per the IBM Manual for appraisal of Final Mine Closure Plan-2017 of Indian Bureau of Mine since validity of the mining lease is up to 31.03.2020 as per MMDR (Amendment) Act, 2015.
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Sl No	GENERAL CONDITIONS	COMPLIANCE STATUS									
i	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.	No change in mining technology and scope of working has been made.									
ii	No further expansion and modifications in the plant shall be carried out without prior approval of the ministry of Environment and Forests.	No further expansion and modifications in the mines will be taken without prior approval of the Ministry of Environment and Forests.									
iii	No change in the calendar plan including excavation, quantum of mineral iron ore 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 6.28 MTPA. However, during the appraisal period (April, 2017 to September, 2017) mining operation is suspended temporarily. The excavation details achieved for the year FY 2017-18 are given in the following table.									
		<table border="1"> <thead> <tr> <th>Category</th> <th>Excavation Plan (2017-18)</th> <th>Achieved (1st HY)</th> </tr> </thead> <tbody> <tr> <td>ROM in Ton</td> <td>5896225</td> <td>Nil</td> </tr> <tr> <td>Waste in Cum</td> <td>619308</td> <td>Nil</td> </tr> </tbody> </table>	Category	Excavation Plan (2017-18)	Achieved (1 st HY)	ROM in Ton	5896225	Nil	Waste in Cum	619308	Nil
		Category	Excavation Plan (2017-18)	Achieved (1 st HY)							
		ROM in Ton	5896225	Nil							
Waste in Cum	619308	Nil									
iv	At least four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10micron i.e., PM10) and NOX monitoring. Location of the 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.	Nine ambient air quality-monitoring stations has been established in the core zone (5 nos.) and buffer zone (4 nos.) for RSPM (Particulate matter with size less than 2.5 & 10 micron i.e., PM _{2.5} & PM ₁₀) SO ₂ and NO _x monitoring. Location of the monitoring stations has been decided based on the meteorological data, topographical features, and environmentally and ecologically sensitive targets in consultation with the Regional office State Pollution Control Board, Keonjhar.									

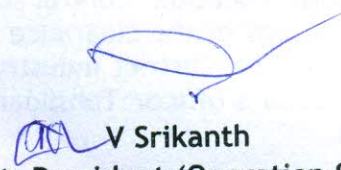
V	<p>Data on ambient air quality [(RSPM(Particulate matter with size less than 10micron i.e., PM10) and NOX] should be regularly submitted to the Ministry including its Regional office located at Bhubaneswar and the State Pollution Control Board / Central Pollution Control Board once in six months.</p>	<p>Data on ambient air quality [(RSPM(Particulate matter with size less than 10 micron i.e., PM₁₀) and NO_x] is being submitted regularly to the MOEF and its Regional office located at Bhubaneswar and the State Pollution Control Board / Central Pollution Control Board once in six months.</p> <p>During the period under review it is observed that PM10 concentration is in the range of 35 to 79 µg/m³ and PM2.5 concentrations is 10 to 30 µg/m³ which is well within the limits of the National Ambient Air Quality Standard (NAAQS). Similarly, the maximum concentration of Sulphur Dioxide (SO₂), Nitrous Oxide (NO_x) and Carbon Monoxide (CO) are well within the limits of NAAQS. The details of Ambient Air Quality are annexed.</p>
vi	<p>Fugitive dust emissions from all the sources should be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points should be provided and properly maintained.</p>	<p>To control the air pollution in the core zone, static water sprinkling system have been installed for water sprinkling on the haul roads. Apart from the above we have engaged mobile water tanker for water sprinkling along the haul roads.</p> <p>Dust suppression is also done at various points within the crusher by dry fog (high pressure nozzles), dust encapsulation have been provided in the screens. All the belt conveyers are covered (canopy) to arrest dust considerably, and also dry fog on the feed bunkers, hoppers, discharge chutes of crusher and screening to make it effective.</p> <p>Stationary Sprinklers have been installed along the transportation road. Haulage Roads are being maintained by grader. Main Transportation road near OCU office to Gate -3 and Gate -3 to store has been concreted and colony road has been black topped.</p> <p>However, during the appraisal period (April, 2017 to September, 2017) mining operation is suspended temporarily.</p>

vii	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>Effective measures are being taken to keep the noise levels below 85 dB(A) which includes control blasting techniques, shock absorbent lining, acoustic barriers, proper up keep and maintenance of machineries and equipments, provisions of green belt around crushing and screening plant, housing colony along the haul roads etc. Further regular noise monitoring is done at different work areas worker engaged in operation of HEMM etc. are provided with earplugs/muffs. However, during the appraisal period (April, 2017 to September, 2017) mining operation is suspended temporarily.</p> <p>Noise monitoring data is attached as Annexure - I</p>
viii	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>Oil & Grease separation pits have been provided to take care of effluents from the workshop. The water quality is being monitored regularly and the parameters meet the prescribed standard.</p> <p>Iron ore mining involves dry process, there is no generation of process waste water. However, during the appraisal period (April, 2017 to September, 2017) mining operation is suspended temporarily.</p>
ix	<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>Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.</p>	<p>Dust masks are provided to employees working in the dusty areas. It is also ensured that they use the same. Respirable dust survey at different locations is done regularly.</p> <p>The employees are also given regular awareness & training on safety and health aspects as part of implementation process of OHSAS - 18001 systems.</p> <p>Further, employees undergo Lung Function Tests during the Periodical Medical Examination. Periodical Medical Examination of employees and contractor workers are organized regularly to observe any contractions due to dust pollution.</p>
x	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.	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.
xi	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 located at Bhubaneswar.	Funds allocated for environmental management are spent only for environment related purposes and not diverted to any other purpose. During the year 2016-17 an amount of Rs. 6972055.00 was spent towards environmental protection measures. Year wise expenditure for the year 2016-17 is submitted to MoEF and its Regional Office located at Bhubaneswar on date 13.05.2017 vide our letter no.120.
Xii	The project authorities should inform to the Regional Office located at Bhubaneswar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	This is an ongoing mining project & is operational since 1954. Accordingly the clause is not applicable to us.
xiii	The Regional Office of this Ministry located at Bhubaneswar 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 mining inspection by MoEF officers of Regional Office, Bhubaneswar by furnishing the requisite data/ information/ monitoring reports.

xiv	<p>The project proponent shall submit 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) to the Ministry of Environment and Forests, its Regional Office Bhubaneswar, the respective Zonal Office of Central Pollution Control Board and the State Pollution Control Board. The proponent shall upload the status of compliance of the environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar, the respective Zonal Officer of Central Pollution Control Board and the State Pollution Control Board.</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 (http://esselmining.com/sustainability/environmental_reports.html) 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.</p>
xv	<p>A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.</p>	<p>A copy of the clearance letter has been sent to the Jalahuri and Jurudi Gram Panchayat. The clearance letter has also been put on the website of the Company.</p>
xvi	<p>The State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and the Collector's office/ Tehsildar's Office for 30 days.</p>	<p>The same has since been complied.</p>

xvii	The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Office of the Ministry of Environment and Forests, Bhubaneswar by e-mail.	The environmental statement for financial year ending 31st March, 2017 in Form-V has been submitted on dtd. 07.09.2017 to the State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently. It is being uploaded in the company's website along with the status of compliance of environmental clearance conditions. The same is also submitted to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar by e-mail.
xviii	The project authorities should advertise at least in two local newspapers of the District or State in which the project is located and 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 and Forests at http://envfor.nic.in and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bhubaneswar.	Details of Environment Clearance with regard to Jilling langalota Iron & Mn Mine was published both in Oriya and English local news papers named "The Sambad" and "New India Express" respectively on 09.06.2012 and 13.06.2012. The copy of the environmental clearance was also communicated to the Member Secretary, OSPCCB, Bhubaneswar and the Regional Office of MoEF located at Bhubaneswar.



V Srikanth
Jt. President (Operation & Project)