

**Jilling-Langalota Iron & Mn Mines
of M/s Essel Mining & Industries Ltd.**

**Status of Compliance to Conditions for Environment Clearance stipulated by MoEF vide
Letter No. J-11015/194/2005-IA.II (M) on 17/03/2006 for production
Capacity of 4.2 MTPA**

(For the period from April, 2011 to September, 2011)

Sr. No	Special Condition	Compliance status as 31.09.2011
i	No mining operations or developmental activity shall be taken up in the forestland until necessary forestry clearance/permission has been obtained for the same.	No mining operations or developmental activity is going on in forestland. Renewal Diversion Proposal has already been submitted to the Forest Department. The same is under process.
ii	A specific clearance from the Chief Wildlife Warden, Orissa shall be obtained prior to the commencement of construction/operation.	A site specific Wildlife conservation plan of the study area is being approved by PCCF (Wildlife) & Chief Wildlife Warden vide letter no. 10895on 15/12/2010.
iii	Top soil should be stacked properly with adequate measures at earmarked sites. It should be used for greenbelt development, reclamation and Rehabilitation of mined out area.	During mining operation generated topsoil is being stacked and used for plantation.
iv	No dumping of OB shall be carried out in those areas where natural slope is already exceeding 35° angle.	Dumping is being carried out in undulated area where natural slope is less than 35° angle. We have taken protection measures like terracing, Coir mating, plantation etc.

v	<p>Overburden and mineral rejects should be stacked at earmarked sites(s)/storage dumps. Plantation should be taken up for soil stabilization along the slopes of the dump and terraced after every 5-6 m of height and overall slope shall not exceed 28°. Garland drains will be provided around the excavations to prevent storm water from catchment area to come in contact with freshly excavated areas. Toe drains will be provided all along the toe of the dump to arrest any soil erosion. Loose material slopes will be planted by making contour trenches at 2m intervals to check soil erosion.</p>	<p>During Mining Operation generated waste & OB is being kept in the demarcated waste dump yard in a retreating method and following measures are taken.</p> <p>The OB /Waste rock dumps are located away from the natural nallas and non-mineralized areas.</p> <p>The OB /IB Waste rock dumps are being properly dressed which includes terracing. The ultimate slope of the dump will be maintained at 28°.</p> <p>About 2800 mtrs. of Retaining walls/ stone barriers are made at the toe of the dumps. Gully plugging is done to prevent the soil erosion during monsoon. Retaining walls have weep holes to allow water to flow down to garland drains.</p> <p>2150 mtrs. of Garland drains have been made around dumps. Routing and terracing are being maintained in the overall slope in the direction of mining flow in order to minimize run off distribution.</p> <p>The accumulated water in the garland drains is being passed through settling tanks/sedimentation ponds, which are constructed depending upon the contours to allow the silt to settle before final discharge.</p> <p>Small grasses are being planted in the drains to hold back the solid particles from being drained away. Plantation is being done in the slope of dumps to stabilize & to enhance the greenery.</p>
vi	<p>Check dams and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from the mining operations. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted and maintained.</p> <p>Garland drain (size, gradient & length) and sump capacity should be designed keeping 50% safety margin over and above the peak sudden rainfall 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.</p>	<p>Check dams & siltation ponds of required sizes are constructed to arrest silt & sediments from mining operations.</p> <p>Due to porous lateritic formation ground water gets soaked in the ground within very short period of time.</p> <p>Settling ponds, drains & trenches are desilted as and when required & maintained regularly.</p> <p>Year by year we are extending this work as per need.</p> <p>Garland drains & sumps are designed to cope up with heavy rain fall & maximum surface run off from surrounding areas.</p>
vii	<p>Use of geo-textiles for dump stabilization shall be taken up in the critical areas.</p>	<p>Geotextile on 5.3 Ha of dump area has been made to stabilize the dump.</p>
viii	<p>Mine water discharge and/or any wastewater should be properly treated to conform to the prescribed standards before reuse/discharge. Run-off from OB</p>	<p>Mine water discharge, run off from the OB dumps and surface run off are channelized properly. It is passed through number of Siltation Pond and allowed to settle</p>

	dumps and other surface run-off should be treated to conform to prescribed standards before discharge/reuse.	in the settling ponds. Clean overflow is released out only after conforming standards.
ix	Drills should either be wet operated or fitted with dust extractors	Drill machines are fitted with dust extractors & wet drilling arrangements. Eco-friendly drilling equipments are being used.
x	Controlled blasting shall be practiced.	Controlled blasting is being practiced to control the noise vibration and dust generation.
xi	No wet Beneficiation of iron ore shall be undertaken within the mine site without prior approval of MoEF.	Not required at this stage. Wet Beneficiation plant of iron ore will be established within the mine site with prior approval of MoEF.
xii	Mining shall not intersect groundwater. Prior approval of the MoEF and CGWA shall be obtained for mining below groundwater	Till now ground water is not encountered in mining area. If any, necessary permission will be obtained from CGWB and MoEF.
xiii	Water harvesting and water conservation measures such as construction of check dams, ponds, water holes, in and around the mining lease area shall be Undertaken.	Water harvesting measures have been made for collecting rain water in the mining lease area. Construction of check dams, settling pits had been completed.
xiv	Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and construction new piezometers. The monitoring of ground water level should be done at least four times a year in pre-monsoon (April/May), monsoon (August), post-monsoon (November) and winter (January) seasons and for groundwater quality once (May). Data thus collected should be submitted to the Ministry of Environment & Forests and to Regional Office of the CGWB regularly.	Ground water level and quality of existing wells are being monitored on quarterly basis through third party. The above monitoring data is submitted to SPCB, MoEF & IBM on quarterly.
xv	A total area of 235.30 ha shall be afforested. This includes green belt (22.917 ha), plantation along the roads, dump sites (93.236 ha), all around the ML area, and in other areas and an area of 34.541 ha of excavated area to be reclaimed by planting native plant species in consultation with local DFO/Agriculture Dept. At least 2000 plant species/ha should be planted.	The following areas are covered under plantation. Green Belt: 39.48 Ha Other areas : 24.07Ha Over the dump: 2.62Ha
xvi	A Progressive Mine Closure Plan shall be prepared and implemented in a time-bound manner.	A Progressive Mine Closure Plan is approved by IBM, Nagpur and phase wise implementation is going on.
xvii	Conceptual Plan for post mining land use for restoration of land to original use to the extent possible shall be prepared and implemented.	Conceptual Plan for post mining land use for restoration of land to original use to the extent possible has been prepared & is being implemented phase wise manner.

	A Final Mine Closure Plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.	A 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 for approval.
xviii	A plan for conservation of endangered fauna found within the lease area shall be prepared and implemented in consonance with the Regional Plan for Conservation prepared by the State Govt. for the area. Necessary allocation of funds for the specific activities/tasks in the Conservation Plan shall be made and the funds so allocated shall not be diverted for any other purpose. Year-wise status of the implementation of the Plan and the expenditure thereon should be reported to the Ministry of Environment & Forests, RO, Bhubaneswar. These costs shall be included in the project cost.	A site specific Wildlife conservation plan for protection of endangered flora and fauna found in the study area is being approved by PCCF (Wildlife) & Chief Wildlife Warden vide letter no. 10895on 15/12/2010. Necessary funds will be deposited for implementation of the conservation plan on demand by DFO. Year-wise status of the implementation of the Plan and the expenditure thereon will be reported to the Ministry of Environment & Forests, RO, Bhubaneswar.
xix	Consent to Operate shall be obtained from the SPCB before expanding mining activities.	Consent to operate for production of 4.2 MTPA has been obtained vide letter no. 6358/IND-I-CON-248 on 15.04.2011 from the State Pollution Control Board, Orissa.

Status of General Conditions

Sr. No	General Condition	Compliance
i	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.	Necessary permission will be taken from MoEF if any changes in mining technology during mining operation.
ii	No change in the calendar plan including excavation, quantum of mineral and waste should be made.	As per approved Mining Plan excavation schedule is being followed.
iii	Ambient air quality monitoring should be carried out in the core zone as well as in the buffer zone for RPM, SPM, SO ₂ and NO _x monitoring. Location of the monitoring stations should be decided based on the meteorological data, topographical features, and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Data so collected should be regularly submitted to the Ministry including its Regional Office at Bhubaneswar and to the State Pollution Control Board/Central Pollution Control Board once in six months.	Ambient air quality monitoring is being carried out in core & buffer zone for RPM, SPM, SO ₂ and NO _x in consultation with SPCB. Location of the monitoring stations is being decided based on the meteorological data, topographical features, and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Collected data has been submitted to the Ministry regularly including its Regional Office at Bhubaneswar and to the State Pollution Control Board/Central Pollution Control Board once in a quarter.

iv	<p>Fugitive dust emissions from all the sources should be controlled regularly monitored and data recorded properly. Water spraying arrangement on haul roads, wagon loading, dumpers/trucks, crushing and screening area, loading & unloading points should be provided and properly maintained.</p> <p>Crushers and conveyors shall be enclosed and provided with dust extraction systems near the sources of generation.</p>	<p>To control the air pollution in the core zone, dedicated static water sprinkling system have been installed for water sprinkling on the haul roads which minimize a significant amount of the fugitive dust emissions during vehicular movement. Apart from the above we have engaged mobile water tanker having capacity 12 KL & 22 KL for water sprinkling.</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 stationary water sprinklers on the feed bunkers, hoppers, discharge chutes of crusher & screening to make it effective.</p> <p>Stationary Sprinklers have been installed along around 3.5 KM of transportation road.</p> <p>Haulage Roads are being maintained by grader. Main Transportation road near OCU office to Gate -3 and Gate -3 to store has been concreted & colony road has been black topped to reduce dust emission by vehicular movement.</p>
v	<p>Adequate measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operations of HEMM etc. should be provided with ear plugs/muffs. Workers in noise generating areas and engaged with noise generating machinery should be subjected to audiometric tests annually.</p>	<p>Earplugs are provided to workers who are exposed to high noise levels, in areas like HEMM, drilling operations and blasting areas. Audiometric test is being done once in a year for the workers working at high noise generating areas.</p>
vi	<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 and retention ponds should be installed before discharge of workshop effluents.</p>	<p>HEMM wash water is passed through oil & grease separation system. Cleaned water is being reused.</p>
vii	<p>The data on environmental quality should be collected and analyzed either through an in-house environmental laboratory established with adequate number and type of pollution monitoring and analysis equipment or got analyzed through an approved laboratory under the Environment (Protection) Rules, 1986 in consultation with the State Pollution Control Board.</p>	<p>The data on environmental Quality is collected & analyzed by M/s. B. S. Environmental Consultant Pvt. Ltd, Hyderabad.</p> <p>Proposed for full fledged in house Environmental Laboratory. Few types of equipment are purchased for environment monitoring, remaining equipments will be purchased in due course of time. Separate Environment laboratory construction is in progress.</p>
viii	<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>Dust masks are provided to workers & time to time training is given on safety and health aspect.</p>

ix	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. Audiometric tests shall be taken annually for workers in noise generating areas and corrective measures undertaken if required.	Periodically Occupational Health Surveillance programmes are being undertaken in mines as per the norms. Audiometric test is done annually for workers in noise generating areas.
x	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 this Ministry's Regional Office located at Bhubaneswar	Accounts of expenditure for Environmental protection are maintained separately and are spent only for environment related purposes. Year wise expenditure is being submitted to MoEF's Regional Office located at Bhubaneswar.
xi	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.
xii	A copy of clearance letter will be marked to concern Panchayat/local NGO, if any, from whom and suggestion/representation has been received while processing the proposal.	Complied with
xiii	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.	Complied with
xiv	The project authorities should advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of 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 may also be seen at web site of the Ministry of Environment & 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.	Copy of environmental clearance has been published in local new papers i.e. The Samaj & The Sambad and the same was forwarded to the Regional Office of this Ministry located at Bhubneshwar & MoEF, Delhi.