

**Six monthly EC Compliance report  
of**

**Deojhar Iron Ore Mines of  
M/s Tarini Minerals Pvt. Ltd.**

**for the period  
October, 2013 to March, 2014.**

DIOM-TMPL/SEIAA/EC/COMP/2014/

Date: 25.05.2014

**The Member Secretary,**  
State Environment Impact Assessment Authority  
Ministry of Environment and Forests,  
Government of India,  
Qr. No-5RF-2/1, Unit-IX  
Bhubaneswar -751002.

Sub: **Environmental Clearance of Deojhar Iron Ore Mining Project of M/s Tarini Minerals (P) Ltd. – Regarding six monthly compliance reports for the period October, 2013 to March, 2014.**

Ref: **SEIAA Clearance letter No. SEIAA/26/09, dtd. 27.11.2009.**

Dear Sir,

We are here with submitting the six monthly compliance reports with comprehensive data analysis reports of Deojhar Iron Ore Mining Project of M/s Tarini Minerals (P) Ltd. for the period October, 2013 to March, 2014 on the subject. (in both hard and soft copies as well as by e-mail).

Kindly acknowledge the receipt of the same.

Thanking you.

Yours faithfully,  
for **Deojhar Iron Ore Mines of M/s Tarini Minerals (P) Ltd.**

**Mines Manager**

*Encl: As Above.*

Copy to:

**The Director (S),**  
Regional Office (EZ),  
Ministry of Environment & Forests,  
A-31, Chandrasekharapur,  
Bhubaneswar.

**The Chairman,**  
Central Pollution Control Board  
Parivesh Bhawan, CBD-CUM Office Complex,  
East Arjun Nagar,  
Delhi – 110032.

**The Chairman,**  
State Pollution Control Board, Orissa  
A/118, Nilakantha Nagar, Unit – VIII,  
Bhubaneswar – 751 012.

**The REGIONAL DIRECTOR,**  
Central Ground Water Board,  
Government of India,  
South Eastern Region,  
Bhubaneswar – 751 030.

**Compliance Status of Environmental Clearance Conditions – “Deojhar Iron Ore Mines of M/s Tarini Minerals (P) Ltd.” located near village Deojhar (Thakurani RF) of Keonjhar Dist., Orissa.**

Sl. No	SPECIFIC CONDITIONS	PRESENT STATUS
i	<p>The applicant (Project Proponent) will take necessary measures for prevention, control and mitigation of Air Pollution, water pollution, noise pollution and land pollution including solid waste management as mentioned by him in form-I, final EIA reports and Environment management Plan (EMP) in compliance with prescribed statutory norms and standards.</p>	<p>Preventive mitigative measures are implemented for control of fugitive dust suppression by engaging 25 KL water tankers on the haulage roads, dry fog system for screen plants.</p> <p>Provision of retaining wall along with garland drain all around the mines to prevent mines run off water to the water bodies. Other necessary measures have also been implemented like gully plugs at regular intervals. etc.</p> <p>Regular maintenance of HEMMs and other vehicles are being carried to minimize the noise level.</p> <p>There are no such OB dumps, the sub grade dumps are stabilized at ear marked area with proper sloping and terracing, and coir matting for better stabilization.</p>
ii	<p>The applicant will take necessary steps for socio economic development after a detailed Primary Socio-economic Survey of the people of Core area on need based assessment for providing employment, education, health, drinking water and sanitation, road and communication facilities etc. A report is to be submitted by the proponent to SEIAA regularly on 1<sup>st</sup> June and 1<sup>st</sup> December of each calendar year.</p>	<p>Different projects has undertaken in consultation with “JANASADHANA” for the socio-economic development of the local people belongs to adjoining villages with development of Infrastructure, Health, Sanitation, Education etc.</p>
iii	<p>The applicant will comply with the points. concerns and issues raised by the people during public hearing on 4<sup>th</sup> February, 2009 in accordance with the commitments made by him thereon.</p>	<p>The public hearing compliances are made as per the commitments i.e. Infrastructure development, Health, Sanitation, Education, etc. All the raised points are addressed and complied.</p>
iv.	<p>The applicant will take statutory clearance/approval/permissions from the concerned authorities in respect of his project as and when required.</p>	<p>The site has already got necessary statutory clearances / approval / permissions from the concerned authorities like say; Consent to operate from SPCB, Ground Water permission from CGWA, Hazardous waste authorization, approved mining plan from IBM, Forest clearance from MoEF, etc.</p>

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v.	For post environmental clearance monitoring, the applicant will submit half yearly compliance report in respect of the stipulated terms and conditions of this Environmental Clearance to the State Environmental Impact Assessment Authority (SEIAA), Orissa on 1 <sup>st</sup> June and 1 <sup>st</sup> December of each calendar year.	The half yearly compliance report is being submitted herewith for the same i.e. for the period October 2013 to March, 2014.
vi.	The core zone should be monitored intensively with no. of stations as prescribed by CPCB, Delhi and unit of pollutant level should be expressed as NAAQ of CPCB, Delhi. The detail methodology adopted for analysis of samples shall be cleared indicated.	The monitoring of AAQ is being done in the core as well as buffer zone of the ML area. There are 1 no. of monitoring station in core zone i.e. Mines Office and there are 5 no. of monitoring stations in the buffer zone such as Deojhar village, Murgabeda Village, Mahadev nasa Village, Boneikela village and Bhadrasahi Village. Monitoring of AAQ is carried out every month except during monsoon. The monitoring report for the period October 2013 to March, 2014 reveals that the parameter like PM10, PM2.5, SO2 and NOx are well within the norm as per NAAQs notifications made by the CPCB.
vii.	The proponent shall submit ground tooting baseline data on flora and fauna and CSR activities already carried out within three months to the SEIAA, Orissa.	The project has already authenticated the flora and fauna present in the core as well as in the buffer zones of the ML area and also the site specific Wild Life Conservation Plan got approved from PPCF, Chief Wild Life Warden, Orissa and the detailed CSR activities on the same got submitted.
viii	No two pits shall be simultaneously worked. After exhausting the first mine pit and before starting mining operations in the next pit, reclamation and plantation works in the exhausted pit shall be completed so as to ensure that reclamation, forest cover and vegetation should be visible during the first year of mining operations in the next pit. This process will follow till the last pit is exhausted. Adequate rehabilitation of mined pit shall be completed before any new ore body is worked.	We are following as per the approved mining scheme/plan including PMCP.
ix	Adequate buffer zone shall be maintained between two consecutive mineral bearing deposits.	A safety zone of 7.5 m width around the ML boundary is being maintained.

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x	Zero waste mining concept shall be implemented either by putting up pelletisation plant or disposal of low grade ores/fines to prospective buyers.	Steps have been initiated to work out in this context.
xi	The following shall be implemented viz. (a) dump run off should be diverted into settling ponds until it is clear (b) adequate rain water harvesting and ground water recharging facilities should be developed in the core zone, (c) attempt should be made to achieve zero water balance.	<p>a- Dump run off are being diverted to settling pits with proper checks before disposal to natural water bodies.</p> <p>b- The project has implemented the roof top rain water harvesting structures and settling pits cum harvesting structures in the mines areas towards recharge of the ground water.</p> <p>c- Steps have been taken to achieve zero water balance like implementation STP for treatment of domestic effluent and reuse of the treated water for mines dust suppression and nearby gardening purposes.</p>
xii	Maintenance of roads through which transportation of ores are undertaken shall be carried by the project regularly at its own cost.	The project has black topped the transportation approach roads and regular maintenance of the main approach road along with the mines haul roads are being carried out by engaging the grader periodically, the roads are without ruts & potholes.
xiii	Fugitive dust generation shall be controlled. Fugitive dust emission shall be regularly monitored at locations of nearest human habitation (including schools and other public amenities located nearest to sources of dust generation as applicable) and records shall be submitted to the SEIAA, Orissa.	<p>Fugitive dust emission is being under control by taking adequate measures like dry fog system in screen plants, water sprinkling in mines haulage roads etc.</p> <p>The monitoring of fugitive dust is being done in the mining lease area, there are 3 no. of monitoring station i.e. Mines haul road, Mines face, Screening plant. Monitoring of AAQ is being carried out in different locations of nearest human habitation in consultation with SPCB except during monsoon. The monitoring report for the period October 2013 to March, 2014 reveals that the parameter are well within the norms made by the SPCB.</p>
xiv	Transportation of ore shall be done by covering the trucks with tarpaulin or other suitable mechanism so that no spillage of ore /dust takes place.	The steps are being followed by proper care towards public roads to ensure that the trucks should not be overloaded during transportation; besides these trucks are being covered with tarpaulins while transportation of the iron ore. Time to time awareness program

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		is being carried out for the operators/drivers etc. towards the same.
xv	Rain water harvesting shall be undertaken to recharge the ground water source.	In this regard KRG Rain Water foundation, Chennai got engaged in consultation with Regional Director, CGWB, and Bhubaneswar. The roof top rain water harvesting structure got implemented towards augmentation of ground water in the camp area.
xvi	Monitoring of ground and surface water quality shall be regularly conducted and records should be maintained and data shall be submitted regularly to SEIAA, Orissa.	<p>Monitoring of the ground water quality at 7 locations namely Inside Mining lease area, Bileipada village, Deojhar village, Mahadevnasa Village, Daldir Village, Murga camp Village &amp; Noamundi Village.</p> <p>Monitoring of the surface water quality is also being carried out in 6 locations. The records are also maintained for this purpose &amp; its being monitored 4 times in a year i.e. pre-monsoon, monsoon, post monsoon and winter.</p> <p>The monitoring of ground and surface water quality records submitted to SEIAA, Orissa bi-annually.</p>
xvii	The proponent shall ensure that no silt originating due to mining activity is transported in the surface water course. Measures for prevention and control of soil erosion and management of silt shall be undertaken. Protection of dumps against erosion shall be carried out with geo-textile matting or other suitable material, and thick plantations of native trees and shrubs shall be carried out at the dump slopes. Dumps shall be protected by retaining walls.	<p>We have provided necessary precautionary measures like siltation pond towards protection of silt carry over into the nearby surface water bodies followed by retaining walls and garland drains at the toe of the dumps. Apart from that interference like guard wall all across the bank of the nallah and check weirs at the strategic locations are provided.</p> <p>It has also developed with garland drain and retaining wall along with 14,500 Sq. Meter Coir Geo-textiles towards the vegetation &amp; stabilization of the dumps along with application of mixed grass seeds towards vegetation and dump slope stabilization.</p>
xviii	Trenches garland drains shall be constructed at foot of dumps to arrest silt from being carried to water bodies. Adequate number of check dams shall be constructed across seasonal or perennial nallahs (if any) flowing through the ML area be arrested. De-silting at	To arrest silt from mines run off, a no. of catch drains and settling cum percolation pits have been constructed with garland drains around the mines working areas. Nallah protection guard walls have also been constructed across the length of the nallah. Time to time de-

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	regular intervals shall be carried out.	silting is followed before each mon-soon.
xix	Provisions shall be made for the housing the labourers within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. the housing may be in the form of temporary structures to be removed after the completion of the project.	There is no such construction activity inside the project area. They are being engaged from the adjoining villages. However, we have provided the site specific STP for treatment of domestic effluents with a capacity of 40 KLD and the treated water is being utilized for adjoining plantation & gardening purposes.
xx	Occupational health and safety measures for the workers including identification of work related health hazards, training on malaria dust eradication, HIV, and health effects on exposure to respirable mineral dust etc. shall be carried out. The proponent shall engage a full time qualified doctor who is trained in occupational health. Periodic monitoring for exposure to respirable mineral dust on the workers shall be conducted and records maintained including health records of the workers. Awareness program for workers on impact of mining on their health and precautionary measures like use of personal equipments etc. shall be carried out periodically. Review of impact of various health measures undertaken (at interval of five years or less) shall be conducted followed by follow up action wherever required. Occupational Health centre shall be established near the mine itself.	Workers are provided with protective respiratory devices & time to time training on safety & health aspects is being provided. A full time qualified Occupational health doctor with provision of Occupational Health centre has been provided near the mines area. Occupational Health Surveillance Program of the workers is being undertaken periodically along with the pre-medical examination of persons employed, who are engaged in the process of mining & are likely exposed to dust to observe any contraction due to exposure to dust and take corrective measures, if needed. This is being carried as per in compliance to Mines Act 1952 & rules 1955 and amendments there to.  The last such examination held for the period October 2013 to March, 2014 for employees of the Project. The various tests include PFT, X-Ray, and lungs pyrometer etc. On the basis of the above tests there is none of the above mentioned employees was by Silicosis/Pneumoconiosis or occupational health related diseases.
xxi	Shelter belt i.e. (wind break of 15m width and consisting of at least around the lease facing the human habitation, school/agricultural fields etc) if any in the vicinity in the safety zone/backfilled and reclaimed areas, around voids and roads shall be raised. Green belt development and selection of plant species shall be as per	All the Sub-grade dumps has been covered with application of mixed grass seeds along the slopes to stabilize and also to reduce wash off in case of rains during monsoon. We have done total Coir matting of 14,500 M <sup>2</sup> in the sub-grade dumps and its 100 % biodegradable.  Gap filling plantations of 6050 No's sapling of



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	SPCB guidelines. Density of trees has to be around 2500 plants per hectare, herbs and shrubs shall also form a part of afforestation program besides tree plantation. Help and guidance of local DFO may be sought in the matter. Details of year wise afforestation program including rehabilitation of mined out area shall be submitted to the SEIAA, Orissa within six months.	different varieties of native species was carried on the safety zone, & peripheral area of ML in the year 2013-14 (up to March, 2014).  The details of year wise plantation program are being submitted to authorities.
xxii	This environmental clearance is subjected to forest clearance under the Forest (Conservation) Act, 1980.	Mines have obtained the forest clearance over an area of 34.365 ha vide MoEF letter no: F No.8-216/1992-FC dated 31 <sup>st</sup> march 1993.
xxiii	The mining operation shall be restricted to above ground water table and it should not intersect the groundwater table.	As such mining activity does not intersect ground water table of the area. The present working depth is 590 a MSL which is far above the ground water level and ground water level exists 540 a MSL. Therefore intersection of ground water table of the ML area will not occur.
xxiv	The top soil shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long (not more than 3 years). The topsoil shall be used for land reclamation and plantation.	There is no generation of the top soil during mining operations. In case of top soil generation generated in future, it will be stored in an earmarked area and necessary precaution will be taken to preserve its nutrient values so that it will be used for land reclamation and raising plantations.
xxv	The over burden (OB) generated during the mining operation shall be temporarily 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. Proper terracing of OB dump shall be carried out so that the overall slope shall not exceed 28 <sup>o</sup> . Back filling shall be done as per approved mining plan; back filling to start from 3 <sup>rd</sup> year onwards of the mining operations and the entire quantity of waste shall be backfilled and liquidated within five years. There shall be no external OB dumps after the 6 <sup>th</sup> year of the mining operations. The backfilled area shall be afforested. Backfilling has to be done in a manner that it is restored to the normal	Previously treated OB is being treated as sub-grade as the cut off grade raised up to +45% and it is marketable. The subgrades are stacked in an identified area inside ML area by maintaining proper slope. It has also developed with garland drain and retaining wall along with 14,500 Sq. meters Coir Geotextiles towards the vegetation & stabilization for critical area's of dump. And the plantation of native species of different varieties of plants of 6050 species has been planted over waste dumps, safety zone & peripheral area of ML in the year 2013-14. Proper care and survival of vegetation is being carried out by engaging specified water tanker.  As per back filling, monitoring and management of rehabilitated area is

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	ground level. Monitoring and management of rehabilitated areas should continue till the vegetation is established and becomes self generating compliance status to be reported to the appropriate authorities.	concerned, we will abide by the conditions as per the approved mining scheme and progressive mine closer plan Monitoring and management of rehabilitated areas will be continued until vegetation becomes self-sustaining
xxvi	The funds earmarked for the environment protection measures shall be judiciously utilized. Under no circumstances this funds shall be diverted for other purposes. Year wise expenditure for these funds should be reported to the SEIAA, Orissa.	The funds earmarked for environmental protection are being utilized for the same.
xxvii	The above mentioned stipulated conditions shall be complied in time bound manner. Failure to comply with any of the conditions mentioned above may result in withdrawal of this environmental clearance and attract action under the provisions of Environmental Protection (EP) Act, 1986.	We are abiding by the said conditions.