

DIOM-TMPL/SEIAA/EC/COMP/2015-16/

Date: 26th May 2015

The Member Secretary,
State Environment Impact Assessment Authority
Ministry of Environment, Forests & Climate Change, GoI,
Qr. No-5RF-2/1, Unit-IX
Bhubaneswar -751 022

Sub: Environmental Clearance of Deojhar Iron Ore Mining Project of M/s Tarini Minerals (P) Ltd., regarding Six monthly EC Compliance reports for the period October - 2014 to March 2015.

Ref: 1. SEIAA Clearance letter No. SEIAA/26/09, dtd. 27.11.2009.
2. SEIAA (Odisha) vide Ref No. 3427/SEIAA dated. 30.05.2015

Dear Sir,

With reference to the above cited subject, we would like to inform you that, mining activity in Deojhar Iron Ore Mining Project of M/s Tarini Minerals (P) Ltd is not in operation since 4th September, 2014 for want of Statutory Clearances. However, we are here with submitting the Six monthly EC compliance reports with comprehensive data analysis (both in hard and soft copies as well as by e-mail) for the period of October - 2014 to March - 2015 on the cited subject.

This is for your kind information, please.

Thanking you.

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

Mines Manager

Encl: As Above.

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.

Copy to:

The Director (S),
Regional Office (EZ),
Ministry of Environment, Forests & Climate Change,
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.

Six Monthly EC Compliance Reports

of

Deojhar Iron Ore Mines of

M/s Tarini Minerals Pvt. Ltd.

For the Period

October, 2014 to March, 2015

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.

SPECIFIC CONDITIONS

- i. **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.**

Status of compliance:-

Presently, the Project is not in working condition, however water sprinkling in the haul road is being in practice, with the help of water tankers (25 KL capacity) and dry fog system for screen plants.

Retaining walls 476 m along with garland drain (482 m) has been constructed all around the mines dump which is sub-grade in nature to prevent mines run-off water to the near by water bodies. Other necessary measures have also been implemented like gully plugs at regular intervals etc. copy of the Returning wall and Dump details given bellow **Table - 1 & 2**

Regular maintenance of HEMMs and other vehicles are being carried to ensure the maximum reduction in noise pollution and create an efficient environment for employees to work for.

There are no such OB dumps, there are 5 nos. of sub grade dumps which are stabilized at ear marked area with proper sloping and terracing, and coir matting for better stabilization.

The photos regarding the same has been shown as below in **Photo – 1, 2, 3 and 4.**



Photo – 1 – Mobile Water Tanker

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.



Photo – 2 & 3 – Showing Retaining Wall along with plantations at the toe of dump slopes



Photo 4A & 4B - Shows Green Coverage on Dumps with application of coir mat & grass seed applications

Table No. 1 - Retaining Walls Details

Sl. No.	Location	Length (in meter)	Width (in Meter)	Height (in meter)
1	Near pillar no.2 to 3	73	1.2	1.2
2	Pillar no. 3 to 7	250	1.2	1.5
3	Near Pillar no. 12 to 13	44	1.2	1.6
4	Near pillar no.30 to 31	66	1.2	1.5
5	Near pillar no.17	43	1.2	1.3

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.

Table No. 2 - Dump Details

Sl. No.	Name of the Dump	LOCATION	AREA IN HA.	Quantity (CUM)
1	Dump -1	Near ML pillar no.28 - 29	0.876	65700
2	Dump -2	Near ML pillar no.15 - 16	0.382	28650
3	SG-1	Near ML pillar no.29 to 30	0.075	208028
4	SG-2	Near ML pillar no.31	0.866	192582
5	SG-3	Near ML pillar no.3 to 9	1.483	20000

- ii. **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 1st June and 1st December of each calendar year.**

Status of compliance:-

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. all the financial details are provided **Table No-03. Socio-Economic Development Activities:**

INFRASTRUCTURE

- Repairing and black topping of Village Road connecting Road from Deojhar to Murgabeda being carried as & when required.
- Repairing of interior village roads.

EDUCATION

- The school at village Murgabeda got improved by providing the teaching facility with the appointment of teachers from 2009 onwards.
- We are providing teachers at Mahadevnasa, Kuldum Village primary school from 2010.
- We have appointed one teacher at Sialijoda primary school in 2013.
- Renovation of school building & Angnabadi compound wall, etc.
- Additional School Bus provided to adjoining villages.
- Additional teachers have been posted in the adjoining villages.
- Distribution of Uniforms, Books, slates, pencil, etc. to the school students
- Mid day meal is being provided at free of cost for class IX & X at Deojhar High School,
- Facilitating the Independence & Republic Day functions at adjoining schools by funding the entire celebration by extending various tournaments among school children.

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.

HEALTH

- Health-Check-up camp covering adjoining villages and free supply of medicines have been conducted.
- Extending the Dispensary along with the ambulance facility to local villages with the availability Doctor & Staff and free medicine.

DRINKING WATER FACILITY & SANITATION

- 2. No's of deep bore wells got provided at village Murgabeda and one deep bore well for Silijoda village
- Regular & periodical supply of drinking water to the adjoining villages with the water tankers.

OTHER PERIPHERAL ACTIVITIES

- Murga Mahadev Temple renovation work (Bathing area has been tiled & guard bars, Cloth changing room, Glazed tiled Bench, etc) already completed.
- Regular maintenance of temple housekeeping, etc.
- Conducting game and entertainment programmed for local villagers.

EMPLOYMENT OPPORTUNITIES

- Locals from adjoining villages are engaged in various activities of mines.
- Besides the above Temple maintenance staff comprises 3.No. of Lady Employees are from Local villages.
- Posting of additional teachers in schools from locality.
- Development of self-help groups for villagers is under planning.

Table No. 3 - Year wise expenses

Sl. No.	Description	Expenses in Lakhs			
		For the year 2011-12	For the year 2012-13	For the year 2013-14	For the year 2014-15
1	Infrastructure	51.8	2.0	0
2	Education	2.33	6.5	4.38	3.1
3	Health	1.85	8.3	6.15	4.8
4	Drinking Water Facility	1.96	4.5	2.94	2.0
5	Other Peripheral activities	1.60	1.7	2.98	1.8
6	Employment	99.80	31.5	117.94	58.5
7	Total	107.56	104.3	136.39	70.20

The detailed report of the same is being submitted to the SEIAA as per the calendar plan.

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iii. The applicant will comply with the points, concerns and issues raised by the people during public hearing on 4th February, 2009 in accordance with the commitments made by him thereon.

Status of compliance:-

We have full-filled the commitment regarding the demands raised during the public hearing and compliance are made as per the commitments *i.e.* Infrastructure development, Health, Sanitation, Education, etc. All the raised points are addressed and complied. The details have been attached here. **Table No. 04**

Table 4:- Public Hearing Compliance Status

Sl. No.	Public Hearing consents by the Project Proponent	Compliance Status
1	We assured with consultation with Govt. department and as per their advice they will adopt all the measures to keep the sound pollution under control especially during blasting.	As such there is no blasting due to availability of soft material and the excavation work is carried out by engaging excavators only. Anyhow noise is being monitored and the results are well within the prescribed norms.
2	To construct Check dam for Mahadev Nasa Nallah and for this the project proponent invited the village committee to come with a proposal for the same.	We ensure that natural watercourse of Mahadev Nasa nallah will not be obstructed due to our mining operations. As such necessary precautionary measures were well taken in consultation with village committee to avoid any sort of interference like providing guard wall & check weir at bank of Mahadev Nasa Nallah.
3	Suitable dump management system to minimize the pollution and all wastes are being dumped inside the lease area	Sub grade is being stacked in an identified area inside ML Area by maintaining proper terracing & slope. It has also developed with garland drain and retaining wall along with 2492 Sq. Meter Coir Geo-textiles towards the vegetation & stabilization for critical areas of dump.
4	We have formed an Environment cell and they are monitoring this on regular basis to keep this under control.	A separate environmental management cell is in operation under the control of Mines Manager, which is looking after all environmental activities including Environmental Monitoring.
5	We will give priority in employing skilled local people such as drivers, drillers, operators, etc. according to their qualification.	Local peoples are being given priority in employing skilled local people such as drivers, drillers, operators, etc. according to their qualification.

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6	We assured that they will re-open all the schools in Murgabeda Village those are not running at present and will appoint 4 teachers in those Schools on permanent basis.	The School is running effectively with engagement of teaching facilities with appointment of teachers. Study materials like books, slates, pencils etc are being provided. Mid day meal is provided at free of cost for class IX & X at Deojhar High School. Bus is provided for Deojhar high school and for Sarswati Sisu Mandir, Bileipada.
7	We are already supplying drinking water to Murgabeda villages through water tanker and will continue this facility.	2 no. of bore wells with drinking water facilities are provided for the villagers of the Muragbada, about a population of around 1000 no's.
8	We are ready to construct inter village connecting roads in Murgabeda village and they invited proposal from the village committee for the same.	Inter connecting village roads are made up of black top in length of 1.8 Km to suppress the dust. The photo of the same is enclosed as photo 11.
9	We have already opened a dispensary here for locals for availing medical facility free of cost where a doctor is available. One Ambulance is always available there at service.	Medical facilities like dispensary and ambulances are being provided. Medical health camp is being organized at regular intervals for the local villagers. Medical facilities are provided free of cost to the local villagers. The photo of the same is enclosed as photo-12A & 12 B.
10	Regarding electrification of villages, we have requested the concerned Village committee along with Sarpancha to come forward with the latest status and the proposal so that they can support and assist the village committee for electrification.	It is being carried out with the village committee members by providing materials for Street Light Connections to nearby villages.
11	It is being assured that we are following all the Govt. rules regarding employment and statutory payments.	It is being followed.
12	We have requested the Murgabeda Temple committee to come with a proposal so that they can consider for its renovation.	Temple renovation work is completed with the proposals of Temple Committee members. The bathing area has been developed with anti-slippery tiles and guard bars and a cloth changing room have provided. Two male and three female labours have deployed for proper up- keep of the temple. The photo of the same is attached as photo – 13 a & 13 B.

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Photo - 12 A - 24 x 7 Ambulance facilities



Photo -12 B –Showing the provision of the medical facility for local



Photo -13A -Temple renovation work with Glazed Tile



Photo -13B -Renovation work with Bench Tile & Coloring of walls

- iv. **The applicant will take statutory clearance/approval/permissions from the concerned authorities in respect of his project as and when required.**

Status of compliance:-

Necessary statutory clearances / approval / permissions from the concerned authorities have been obtained such as; Consent to operate from SPCB, Ground Water permission from CGWA, Hazardous waste authorization, approved mining plan from IBM, Forest clearance from MoEF, etc.

Forest Clearance from MoEF, Consent to Operate from SPCB, Orissa vide Letter No. : - 7550/IND-I-CON-1373 dtd. 03.05.2011, Hazardous Wastes Authorization from SPCB, Orissa vide Letter No. : - IND-IV-HW-846-8499 dtd. 31.05.2014 valid up to 31.03.2016, Approved Mining Plan from IBM vide Letter No. : MP/FM/07-ORI/BHU/2014-15/3834 dated. 05.12.2014, ground water NOC from CGWB vide Letter No. 21-4 (94)/SER/CGWA/2008 – 859 dtd.31/05/2014.

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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 1st June and 1st December of each calendar year.**

Status of compliance:-

Half yearly compliance is being submitted as per the EC conditions on time to time basis. The half yearly compliance status reports are as follows; **Table no. 05**

Table 5 - Six Monthly Compliance Submission details

Table – 5 : EC Compliance Submission Details

Sl. No.	Compliance Time Period	Date of submission
1	Apr, 2014 to Sept 2014	22.11.2014
2	Oct, 2013 to March, 2014	25.05.2014
3	April, 2013 to Sept, 2013	25.11.2013
4	Oct, 2012 to March, 2013	25.05.2013
5	April, 2012 to Sept, 2012	25.11.2012
6	Oct, 2011 to March, 2012	25.05.2012
7	April, 2011 to Sept, 2011	25.11.2011
8	Oct, 2010 to March, 2011	25.05.2011
9	April, 2010 to Sept, 2010	29.11.2010

- 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 clearly indicated.**

Status of compliance:-

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 being carried out every month except during monsoon. The monitoring report are well within the norms as per NAAQs notifications made by the CPCB.

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- 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.**

Table 6 – Plantation Details

Status of compliance:-

The site specific Wildlife Conservation Plan has been prepared by Mr. P.K. Sarangi, Rtd. IFS Officer & got approved by PCCF (Wildlife), Chief Wildlife Warden, Odisha. The project has estimated cost of Rs. 54 Lakhs which includes cost for both buffer zone i.e. Rs. 41 Lakhs which is already deposited through RTGS No. BARBH4179631316 dated. 28.06.2014 in favor of CA Fund and core zone i.e. Rs. 13 Lakhs for the conservation and management of wildlife. Project proponent has appointed 4 nos. of watchers for protection of wild animals with the expenditure of Rs. 3.8 Lakhs/annum. Apart from that, the project proponent has constructed check dam & check weirs to restrict the mixing of undesired substances in nearby streams & also established guard wall along the sides of nallas.

- 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.**

Status of compliance:-

There is only mines pit i.e. Pit No.-1 which is still active, but not in operation since September, 2014 for want of statutory clearances. Previously, the project was operating according to the above mentioned condition and following as per the approved mining scheme/plan including PMCP.

- ix. Adequate buffer zone shall be maintained between two consecutive mineral bearing deposits.**

Status of compliance

There is only mines pit and the project has maintained the safety zone of 7.5 m width around the ML boundary. In this regard, the project has covered the dumps with application of mixed grass seeds along the slopes to stabilize and also to reduce wash off in case of rains during monsoon.

The project has done 33610 numbers of saplings in and around the ML area. In the year 2014-15, the project has done plantations of 3560 No's sapling of different varieties of native species in the safety zone, & peripheral area of ML. The year wise plantation details area as follows; photo of the same is attached as **photo – 5**. Plantation details have been given in **table – 6**.

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Photo 5 – Safety Zone Plantation

Deojhar Iron Ore Mines of M/s Tarini Minerals (P) Ltd.		
Sl. No.	Year	No. of sapling
1	2004-05	1900
2	2005-06	1200
3	2006-07	2000
4	2007-08	2400
5	2008-09	3100
6	2009-10	3623
7	2010-11	2050
8	2011-12	1727
9	2012-13	6000
10	2013-14	6050
11	2014-15	3560
Total		33610

- x. **Zero waste mining concept shall be implemented either by putting up pelletisation plant or disposal of low grade ores/fines to prospective buyers.**

Status of compliance:-

Due to the incorporation of better & efficient machineries and latest technologies, we ensure that zero wastes will be coming out due to the mining activity. 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.**

Status of compliance:-

The project has taken the following steps

- a. Run off generated from Dump areas are being diverted to mines pit only and rest quantity is channelized through settling pits with proper checks before disposal to natural water bodies.
- b. We have implemented the roof top rain water harvesting structures and settling pits cum harvesting structures in the mines areas towards recharge of the ground water.
- c. Steps have been taken to achieve zero water balance like implementation of STP for treatment of domestic effluent and reuse of the treated water for mines dust suppression and nearby gardening purpose.

Details have been shown in **table – 7**. The photo of the same is enclosed as **photo – 6 to 10**.

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Table – 7: Details of Retaining wall & Garland Drains

Sl. No.	Measures taken	Location	Length Size
1	Retaining wall	Near pillar no.2-3 Pillar no. 3-7 Near Pillar no. 12-13 Near pillar no.30-31 Near pillar no.17	73 m 1.2mX1.2m 250 m 1.5m X1.2m 44 m 1.6m X 1.2m 66m 1.5m x 1.2m 43m 1.3m x 1.2m
2	Garland drains in the above location		482 m 1m X 1m
3	Check weir	Near Sub-grade dump Near SG dump -1 Near SG dump -1	3240 CUM 252 CUM 230 CUM
4	Check dam cum de-silting Pit cum percolation pit		3600 CUM
5	Guard Wall across the nallah		380 M 1.5m x 1.2m



Photo 6 & 7– Settling cum harvesting Pit



Photo 8– Check Weirs to check Run-off



Photo-9 : Showing the STP for treatment of domestic waste water

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Photo 10 – Shows roof top Rain Water harvesting structure & Recharge Pit

- xii. **Maintenance of roads through which transportation of ores are undertaken shall be carried by the project regularly at its own cost.**

Status of compliance:-

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. The project is also ensuring the tarpaulin covers over the loaded trucks so as to prevent the spillage of the materials.

The Project authority are regularly monitoring the emission of the vehicle to ascertain whether the vehicle meet the pollution norms.

We are regularly monitoring the emission of the vehicle to ascertain whether the vehicle meet the pollution norms. The tests are being conducted on regular basis by engaging Thriveni Emission Test Centre, Unchabali, Bamebari, Keonjhar - 758 086.

The average value of K – factor & HSU found to be 0.13 to 0.26 respectively for the vehicle no. OR-05-AD-5299. The vehicles which are carrying the loaded materials are being released with tarpaulins covers. Photo of same is attached here as **Photo – 11**.

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Photo 11 – Showing the black topped road for transportation of minerals

- 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.**

Status of compliance:-

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.

The monitoring of fugitive dust is being done in the mining lease area, there are 6 no. of monitoring station i.e. Mines Pit, Mines haul road, screening plant, Workshop, Mines Office and Crusher area. Monitoring of AAQ is being carried out in different locations of nearest human habitation in consultation with SPCB except during monsoon. The monitoring report reveals that the parameters are well within the norms made by the SPCB.

- 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.**

Status of compliance:-

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 is being carried out for the operators/drivers etc. towards the same.

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xv. Rain water harvesting shall be undertaken to recharge the ground water source.

Status of compliance:-

In the entire area, where ever possibility of wash off, flow of sediments etc. is anticipated retaining wall, garland drain and check dam have been provided after recommendation of the KRG Rain Water Foundation, Chennai in their report on Rain Water harvesting cum surface water management plan.

The report of the same has been finalized in consultation of the CGWB, Bhubaneswar. The details of the retaining wall, garland drains and check weirs, catch drains, settling pits, check dams etc. are provided in the above conditions no. xi.

The roof top rain water harvesting structure got implemented towards augmentation of ground water in the camp area. Photo of the same has been attached as **Photo – 10**.

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.

Status of compliance:-

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 & Noamundi Village.

Monitoring of the surface water quality is also being carried out in 6 locations. The records are also maintained for this purpose & it's being monitored 4 times in a year i.e. pre-monsoon, monsoon, post monsoon and winter it is started from June 2009 onwards.

The monitoring of ground and surface water quality records submitted to SEIAA, Orissa bi-annually and Regional Office of MoEF, Bhubaneswar. The results reveals all the test results are very well within the norms prescribed by the SPCB/CPCB/MoEF/CGWA.

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.

Status of compliance:-

The project has provided necessary precautionary measures like siltation pit 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, a length of 380 M and check weirs at the strategic locations are provided.

It has also developed with garland drain and retaining wall along with 2492 Sq. Meter Coir Geo-textiles towards the vegetation & stabilization of the dumps during the said reporting period 2014-15, along with application of mixed grass seeds towards vegetation and dump slope stabilization.

The above measures have been taken up to reduce flow of sediments to the 1st order stream such as Muga mahadev nallah and 2nd order streams such as Baitarini River and also other water bodies present in the buffer area. It has been informed that all the measures based on the rain fall data of past 50 years from the

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IMD station i.e. Keonjhar and all the sump capacity have been designed by giving 50 % safety margin. The photos regarding the same have been attached as **Photo 2 to 7**.

- 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 nallah (if any) flowing through the ML area be arrested. De-silting at regular intervals shall be carried out.**

Status of compliance:-

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-silting is followed before each monsoon.

- xix. Provisions shall be made for the housing the labours 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.**

Status of compliance:-

The Project has commonly created the housing facility at all the labour force and also provided fire brackets for cooking, septic tank followed by soak pit for domestic effluents, drinking water, medical health care etc. However, the projects 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. The photograph of STP facility has been shown in **Photo – 9**.

- 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.**

Status of compliance:-

Initial Medical Examination & Periodical Medical Examination of the workers engaged in the project is being undertaken periodically for permanent and outsider employees along with the pre-medical examination of persons employed, who are engaged in the process of mining & are likely

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exposed to dust to observe any contractions due to exposure to dust. This is being carried as per in compliance to Mines Act 1952 & rules 1956 and amendments there to. The various tests include PFT, X-Ray, and lung spirometry etc.

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.

The last such examination i.e. IME/PME held for 53 nos. of employees of the Project during the year 2014-15. On the basis of the above tests there is none of the above mentioned employees was found 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 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.**

Status of compliance:-

There is no such human habitation/schools etc. within the ML area. However, the project has covered all the sub-grade dumps with application of mixed grass seeds along the slopes to stabilize and also to reduce wash off in case of rains during monsoon. The Project has done total Coir matting of 2492 M² in the sub-grade dumps and its 100 % biodegradable in the year 2014-15.

A safety zone of 7.5 m width around the ML boundary is being maintained. In this regard, the project has covered the dumps with application of mixed grass seeds along the slopes to stabilize and also to reduce wash off in case of rains during monsoon.

The project has done 33610 numbers of saplings in and around the ML area. In the year 2014-15, the project has done plantations of 3560 No's sapling of different varieties of native species in the safety zone, & peripheral area of ML in the year 2014-15.

- xxii. This environmental clearance is subjected to forest clearance under the Forest (Conservation) Act, 1980.**

Status of compliance:-

The forest clearance has been obtained over an area of 34.365 ha vide MoEF letter no: F No.8-216/1992-FC dated 31st march 1993. As per the present circular dated 01.04.2015 from MoEF, Govt. of India the forest clearance over 34.365 Ha will be extended up to the coterminous of the extended lease period.

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- xxiii. The mining operation shall be restricted to above ground water table and it should not intersect the groundwater table.**

Status of compliance:-

The Project proponent working at a depth is 588 aMSL which is far above the ground water level and ground water level exist 540 aMSL. The ultimate depth of the bottom of the approval Mining Scheme is at 548m RL. Therefore intersection of ground water table during the whole life of the ML area shall not be obstructed. However the Project has carried out a detailed study on hydrology and hydro-geological aspect of the area through an expert agency and base line data developed for future reference. 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.**

Status of compliance:-

There is no generation of the top soil during mining operations. In case of top soil generation generated in future, it should be stored in an earmarked area and necessary precaution may be taken to preserve its nutrient values so that it can be used for land reclamation and raising plantations. Besides, one M-Book is also being maintained to record generated quantity for its preservation and utilization of top soil including OB materials.

- 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 28⁰. Back filling shall be done as per approved mining plan; back filling to start from 3rd 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 6th 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 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.**

Status of compliance:-

There are 5 nos. of sub-grade dumps which has grade value more than 45 % of Fe i.e. marketable grade. The sub-grades are stacked in an identified area inside ML area by maintaining proper slope. All the Sub-grade dumps have been planted along the slope to stabilize and also to reduce

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wash off in case of rain cut during monsoon. Garland drains (482.0 m long and 1m X 1m Size), retaining walls (476m long & 1.5.m X 1.2m size) have been provided in all the dumps. Coir matting in the sub-grade dumps has been provided and their material is 100 % biodegradable, which has been supplied by Coir Board, Bangalore. The project stated that in the 3rd monsoon the coir matting will degrade completely and also stabilize the slope with good vegetative cover. During inspection growth of grass has been to be covered part of the coir matting area in one season.

Dump is also developed with garland drain and retaining wall at the base and along with 2492 Sq. meters Coir Geo-textiles towards the vegetation & stabilization for critical areas of dump.

The project has done 33610 numbers of saplings in and around the ML area. In the year 2014-15, the project has done plantations of 3560 No's sapling of different varieties of native species in the safety zone, & peripheral area of ML in the year 2014-15. 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 concerned, the project 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.

The other details are mentioned in the specific condition no. xi and in **table 8**.

Table 8 - Coir Matting on Dumps

Sl. No.	LOCATION	AREA (IN SQ M.)
1	Dump-1, Haul road side	432
2	Dump -2, Near pillar no.3	198
3	SG Dump-1, Near pillar no.3 dump slope	300
4	SG Dump-2, Near pillar no.29 dump slope	962
5	SG Dump-3, Middle of pillar no.16 to 28	600
Total		2492

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.

Status of compliance:-

The funds earmarked for environmental protection are being utilized for the same. The year wise environmental expenses are shown in **table No. 09**.

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Table 11 - Details of Environmental Expenses					
Environmental Expenditure of Deojhar Iron ore Mining Project of M/s. Tarini Minerals Pvt. Ltd, District: Keonjhar, Orissa.					
		Cost, Rs. in lakhs			
Sl. No.	Activity	2011-12	2012-13	2013-14	2014-15
1	Dry-fog system installed & maintenance	4.00	1.00	0.16	0.05
2	Arrangement of wetting provision at drilling machine	0.00	0.00	0.00	0.00
3	Water tankers two no's for water sprinkling	4.70	4.10	4.71	3.55
4	Plantation Program with maintenance cost	1.43	2.60	0.58	0.85
5	Purchasing & monitoring equipment's	0.89	0.00	0.00	0.00
6	Occupational Health & Hygiene	5.74	3.45	5.13	3.00
7	Rain water harvesting structures	4.45	0.20	0.25	0.23
8	Check dam, retaining wall maintenance work	2.10	1.80	5.91	1.55
9	Site specific sewage treatment plant with maintenance	1.20	0.50	0.55	0.45
10	Dump stabilization with Coir-Geo textiles and vegetation	3.22	12.50	3.66	2.00
11	Service centre cum ETP & its maintenance.	0.45	1.00	0.55	0.65
Total amount incurred		28.18	27.15	21.5	12.33
The Mines is not in operation since September, 2014 for want of the statutory clearances.					

- 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.**

Status of compliance:-

We are abiding by the said conditions. We are herewith submitting six monthly EC compliance reports once in a six month as per the schedule. The details have been given by **Table No. 5**.