



To
**The Additional Principal Chief Conservator of Forest,
Regional Office (Eastern Central Zone)
Ministry of Environment, Forests and Climate Change, Govt. of India
Bungalow No. A-2, Shyamali Colony,
Ranchi – 834002, Jharkhand.**

Ref No. - JMB/ENV/6&7/36/443 /2018

May 18, 2018

Ref.: Environmental Clearance letter No.- J-11015/373/2010-IA.II(M) dated- 3rd March 2014.

SUB: Half Yearly Compliance Status Report of Environment Clearance conditions issued by MoEFCC, New Delhi to 6 & 7 Pits Colliery, Tata Steel Limited, Dhanbad for the period October'17 to March'18.

Dear Sir,

We are enclosing herewith compliance report for the period **October'17 to March'18** for the EC granted vide letter no.- J-11015/373/2010-IA.II(M) dated- 3rd March 2014 issued by Ministry of Environment, Forest and Climate Change, New Delhi.

Copy of the compliance report is also being sent in soft format through email at ro.ranchi-mef@gov.in for your kind perusal. We trust the information furnished is in line with your requirement.

Thanking you,

Yours faithfully,

**Head (Planning)
Jharia Division, Tata Steel Ltd.**

Encl: As above.

Copy to: Member Secretary, Eastern Zonal Office, Southend Conclave, 502, 5th Floor 1582, Rajdanga Main Road, Kolkata-700107.

Copy to: Member Secretary, JSPCB, T.A. Division Building (Ground Floor), H.E.C, Dhurwa, Ranchi - 834004.

TATA STEEL LIMITED

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Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com

HALF YEARLY COMPLIANCE REPORT

(PERIOD: OCTOBER'17 – MARCH'18)

6&7 PITS COLLIERY

(CAPACITY: EXPANSION FROM 0.28 TO 0.6 MTPA RAW COAL)

TEHSIL: JHARIA, DIST: DHANBAD, JHARKHAND



TATA STEEL LIMITED, JHARIA DIVISION

**P.O.- JAMADOBA, DIST. - DHANBAD,
STATE- JHARKHAND, PIN CODE – 828112**

**ENVIRONMENTAL CLEARANCE GRANTED VIDE LETTER NO. - J-11015/373/2010-
IA.II(M) DATED- 03.03.2014 ISSUED BY GOVT. OF INDIA, MINISTRY OF
ENVIRONMENT, FOREST AND CLIMATE CHANGE, NEW DELHI.**

Compliance status of Environmental Clearance of Expansion of 6 and 7 Pits Colliery from 0.28 MTPA to 0.6 MTPA in an ML area 168.12 ha) of M/s Tata Steel Ltd., Village Jamadoba, Tehsil Jharia, dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/373/2010-IA.II (M) dated March 3, 2014

S. No.	Condition	Compliance Status
Specific Condition		
(i)	Adequate measures be taken so as to prevent and control of manifestation of health problems due to coal mining activities.	The control measures implemented are- i. Water spraying is carried out in underground workings ii. Water sprinkling arrangements are present at all coal transfer points in underground iii. Plantation within the mine lease area iv. Trucks carrying sand are properly covered as well as optimally loaded. v. Underground workings of the mine are well ventilated and meet the required standards prescribed by DGMS.
(ii)	Adequate green belt shall be provided around coal handling and other areas.	Green belt has been developed around the CHP of washery and mass plantation activities are taking place every year in the leasehold area. In the last two years, about 7500 trees have been planted.
(iii)	Transportation of coal shall be by mechanically covered trucks.	No coal transportation takes place by trucks. All coal is transported to the washery via underground conveyor belt system.
(iv)	No dumping of fly ash in low lying areas and in mine voids are permitted.	It is not applicable as there is no generation of fly-ash due to closure of our power plant.
(v)	Utmost care be taken to prevent spillage of sand during transportation of sand.	The trucks that are being used for the transportation of sand are properly covered using tarpaulin sheets. Larger trucks have been engaged for reducing no of cycles. Quality checks are done on trucks to ensure its health and punitive action is taken against defaulters by the management.
(vi)	No use of fly ash with sand will take place for stowing in underground mines.	It will be strictly followed.
(vii)	The maximum production from the mine at any given time shall not exceed the limit as prescribed in the EC.	It will be strictly followed. The EC capacity is for 0.6 MTPA raw coal while the raw coal production for 6&7 Pits Colliery is well below the limit. The production details are: <ul style="list-style-type: none"> • FY18 – 0.239 MTPA • FY17 – 0.238 MTPA • FY16 – 0.26 MTPA • FY15 – 0.25 MTPA

Compliance status of Environmental Clearance of Expansion of 6 and 7 Pits Colliery from 0.28 MTPA to 0.6 MTPA in an ML area 168.12 ha) of M/s Tata Steel Ltd., Village Jamadoba, Tehsil Jharia, dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/373/2010-IA.II (M) dated March 3, 2014

(viii)	Regular monitoring of subsidence movement on the surface over and around the working area and impact on natural drainage pattern, water bodies, vegetation, structure, roads, and surroundings shall be continued till movement ceases completely. In case of observation of any high rate of subsidence movement, appropriate effective corrective measures shall be taken to avoid loss of life and material. Cracks shall be effectively plugged with ballast and clayey soil/suitable material.	Regular monitoring of subsidence is done by Central Institute for Mining and Fuel Research, Dhanbad. According to the subsidence reports, the impact of subsidence is negligible since the underground mine workings are now at great depth and proper filling of voids through sand stowing is being done. The latest subsidence report has been submitted to MoEFCC, Regional Office, Ranchi in hard copy and soft copy vide mail dt. 19.04.2018.
(ix)	If subsidence is found exceeding the permitted limits, then the landowners shall be adequately compensated with mutual agreement of the landowners.	It will be strictly followed.
(x)	Mining shall be carried out as per statuette at a safe distance from the river/nallah flowing adjacent to the lease boundary.	The Damodar River flows at an approx. aerial distance of 2.5 kms from the lease boundary. Since this is an underground mine, no impact on the surface water bodies is expected.
(xi)	High root density tree species shall be selected and planted over areas likely to be affected by subsidence.	Impact on land by subsidence has been found to be negligible as per the subsidence monitoring reports prepared by CIMFR, Dhanbad. Though, high root density trees of native species are covered under annual plantation program.
(xii)	Coal Extraction shall also be optimised in areas where agricultural production is continuing. Some pillars shall be left below the agricultural land. No depillaring & coal extraction should be carried out below habitation, H.T. Lines & beneath road, water bodies.	It will be strictly followed.

Compliance status of Environmental Clearance of Expansion of 6 and 7 Pits Colliery from 0.28 MTPA to 0.6 MTPA in an ML area 168.12 ha) of M/s Tata Steel Ltd., Village Jamadoba, Tehsil Jharia, dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/373/2010-IA.II (M) dated March 3, 2014

(xiii)	Subsidence shall be monitored closely and if subsidence is found exceeding the permitted limits, then the landowners shall be adequately compensated with mutual agreement with the landowners.	Regular monitoring of subsidence is being done by CIMFR, Dhanbad.
(xiv)	3-tier plantation should be developed 2 km stretch of road from the mine using native species.	Plantation along stretches of road has been done during previous monsoon periods.
(xv)	Garland drains (size, gradient and length) around the safety areas such as mine shaft and low lying areas and sump capacity shall be designed keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine sites. Sump capacity shall also provide adequate retention period to allow proper settling of silt material.	Garland drains of adequate size and gradient already exist around the colliery area to channelize the surface runoff. The details of size of garland drain mapped in surface plan has been submitted during MoEFCC official's visit on 10.04.2018.
(xvi)	Water sprinkling system shall be provided to check fugitive emissions from loading operations, conveyor system, haulage roads, transfer points, etc. Major approach roads shall be black topped and properly maintained.	Water spraying arrangement is present in the underground mines at all transfer points. Water spraying via tankers is done on sand transportation routes. Major approach roads have been black-topped and maintained regularly.
(xvii)	Coal transportation to washery shall be through a network of underground belt conveyor system and hence there is no surface transportation of coal. Transportation of men from surface to underground and back shall be via shaft. The material transport shall be through the shaft and by means of haulage in the underground.	It is already being followed and will continue in future too.

Compliance status of Environmental Clearance of Expansion of 6 and 7 Pits Colliery from 0.28 MTPA to 0.6 MTPA in an ML area 168.12 ha) of M/s Tata Steel Ltd., Village Jamadoba, Tehsil Jharia, dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/373/2010-IA.II (M) dated March 3, 2014

(xviii)	A progressive afforestation plan shall be prepared and implemented over the mine lease area acquired and shall include areas under green belt development, areas along roads, infrastructure, along ML boundary and township etc., by planting native species in consultation with the local DFO/Agriculture Department.	Tree plantation activities are carried out every year on the barren/ degraded areas, areas along road-side, infrastructure, etc of the colliery leasehold. Apart from these, fruit plants are distributed to employees and also to villagers, schools, institutions, etc. Species planted include Neem, Sisam, Karanj, Kadamb, Gamahar, Lagastromia, Alostromia, etc. The environment department is responsible for implementing the afforestation plan which is prepared along with the mine management. In the last two years, about 7500 trees have been planted in the leasehold areas.
(xix)	Regular monitoring of groundwater level and quality shall be carried out by establishing a network of existing wells and construction of new peizometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality in May. Data thus collected shall be submitted to the Ministry of Environment & Forests and to the Central Pollution Control Board quarterly within one month of monitoring.	The monitoring of groundwater level and quality is done four times a year. The groundwater quality report & groundwater level for the post-monsoon (November) and winter season (January) are provided in Annexure-I.
(xx)	Acid Water Treatment Plant, volume of water to be treated and disposal of brine should be provided.	Not applicable.

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(xxi)	<p>Mine discharge water outside the ML shall be monitored, particularly for TDS and treated to conform to prescribed levels before discharge into the natural environment.</p>	<p>There is one mine-water outlet point in the colliery which is regularly monitored by the Environmental Laboratory. The analysis results are given below:</p> <table border="1" data-bbox="738 443 1492 840"> <thead> <tr> <th>Month</th> <th>Temp</th> <th>pH</th> <th>TSS</th> <th>TDS</th> <th>BOD</th> <th>COD</th> <th>Oil & Grease</th> </tr> </thead> <tbody> <tr> <td>Limits</td> <td><40°C</td> <td>5.5-9.0</td> <td>100 mg/l</td> <td>2100 mg/l</td> <td>30mg/l</td> <td>250 mg/l</td> <td>10 mg/l</td> </tr> <tr> <td>Oct'17</td> <td>29</td> <td>7.2</td> <td>12</td> <td>828</td> <td>3.7</td> <td>16</td> <td>1.7</td> </tr> <tr> <td>Nov'17</td> <td colspan="7">No Discharge</td> </tr> <tr> <td>Dec'17</td> <td>30</td> <td>7.3</td> <td>12</td> <td>680</td> <td>3.6</td> <td>16</td> <td>0.8</td> </tr> <tr> <td>Jan'18</td> <td colspan="7">No Discharge</td> </tr> <tr> <td>Feb'18</td> <td colspan="7">No Discharge</td> </tr> <tr> <td>Mar'18</td> <td>30</td> <td>7.8</td> <td>14</td> <td>660</td> <td>4.2</td> <td>32</td> <td>1.6</td> </tr> <tr> <td>Min</td> <td>29</td> <td>7.2</td> <td>12</td> <td>660</td> <td>3.6</td> <td>16</td> <td>0.8</td> </tr> <tr> <td>Max</td> <td>30</td> <td>7.8</td> <td>14</td> <td>828</td> <td>4.2</td> <td>32</td> <td>1.7</td> </tr> <tr> <td>Average</td> <td>29</td> <td>7.4</td> <td>12</td> <td>722.7</td> <td>3.8</td> <td>21.3</td> <td>1.4</td> </tr> </tbody> </table>	Month	Temp	pH	TSS	TDS	BOD	COD	Oil & Grease	Limits	<40°C	5.5-9.0	100 mg/l	2100 mg/l	30mg/l	250 mg/l	10 mg/l	Oct'17	29	7.2	12	828	3.7	16	1.7	Nov'17	No Discharge							Dec'17	30	7.3	12	680	3.6	16	0.8	Jan'18	No Discharge							Feb'18	No Discharge							Mar'18	30	7.8	14	660	4.2	32	1.6	Min	29	7.2	12	660	3.6	16	0.8	Max	30	7.8	14	828	4.2	32	1.7	Average	29	7.4	12	722.7	3.8	21.3	1.4
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(xxii)	<p>The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource, in case water table shows a declining trend. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.</p>	<ul style="list-style-type: none"> • More than 50% of the water pumped out during underground mining activity is re-circulated back into the mine for the purpose of stowing. Backfilling of mine voids by stowing is done using sand which is having the porosity to hold the underground water thus helping aquifer to retain the underground water. • Further, there are a number of ponds existing on the surface of the mining lease which act as natural reservoirs for recharging ground water. These ponds/tanks are regularly cleaned and maintained by our CSR department. As per the hydro-geological report, the variation in the ground water level is only seasonal. • The water requirement of the nearby villages is being met by the company already. Now piped drinking water is being provided. 																																																																																								
(xxiii)	<p>Besides carrying out regular periodic health checkup of their workers, 10% of the workers identified from workforce engaged in active mining operations shall be subjected to health checkup for occupational diseases and hearing impairment, if any, through an agency such as NIOH, Ahmadabad within a period of one year and the results reported to this Ministry and to DGMS.</p>	<p>The periodic health checkup of the workers is done regularly by our Occupational Health Department, Tata Central Hospital, Jamadoba. We have a PME (Periodic Medical Examination) centre approved by DGMS where 20 % of the workers identified from workforce engaged in active mining operations are subjected to full medical checkup including hearing impairment checkup, etc. These results are regularly submitted to DGMS as per mines rules. Some sample reports and as well as past records have been submitted during MoEFCC official's visit on 10.04.2018.</p>																																																																																								

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(xxiv)	<p>The mining in the existing mines should be phased out after expiry of the current mining lease and after reclamation of mined over area. The operating mines may be analysed and monitored for compliance of conditions, bearing with movement of wildlife and until such time they are closed/phased out.</p>	<p>It is not applicable in our case.</p>
(xxv)	<p>Project specific CSR for an amount of Rs5/Tonne of coal production, as adjusted as per the annual inflation, should be provided for the CSR activities undertaken and the progress made thereon shall be uploaded annually on the company website. Monitoring of the impacts of activities under CSR shall be carried out periodically.</p>	<p>The proposed CSR expenditure for the entire company is decided as per the new Company Rules. Once the CSR budget for company is fixed, a share of that amount is dedicated and utilized for implementing the CSR activities at our Jharia Division level. The CSR expenditure for FY18 is Rs.4.27 crores. The progress report is uploaded every year on the company website. Internal social audits are carried out regularly to assess the impact of CSR activities. The CSR report with photographs and Food Basket Survey report have been submitted during MoEFCC official's visit on 10.04.2018.</p>
(xxvi)	<p>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.</p>	<p>Mine Closure Plan as per new guidelines has been prepared and submitted to MOC for its approval.</p>
(xxvii)	<p>The commitment made by the Proponent to the issue raised during Public Hearing shall be implemented by the Proponent.</p>	<p>The commitment made by project proponent has been taken up and are being addressed gradually. Roads have been maintained in the colliery and along sand transportation routes. Subsidence studies are done every year. All the ash dumps have been reclaimed. Village ponds are cleaned as per requirement. Laying of drinking water pipeline network has been extended to more villages. A network of more than 22000 metres of pipeline connection has been established along with 33 water tanks (capacity of 4500 litres). Health camps are regularly organized by TSRDS. Training to SHEs, women, youth and children are provided in various fields.</p>

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(xxviii)	<p>Corporate Environment Responsibility:</p> <p>a) The Company shall have a well laid down Environment Policy approved by the Board of Directors.</p> <p>b) The Environment Policy shall prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.</p> <p>c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions shall be furnished.</p> <p>d) To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.</p>	<p>The Company already has an Environment Policy approved by the Managing Director and it addresses all the issues mentioned. Tata Steel Environmental Policy is attached as Annexure-IV.</p> <p>The status of adherence to the policy and compliance to Environmental laws and regulations is regularly discussed at higher levels. Any non-compliance noticed is corrected at divisional level. If any issue is beyond our control, it is brought to the notice of higher management.</p> <p>Moreover, 6&7 Pits Colliery is IMS (Integrated Management System: Quality Management System, Environment Management System and OHSAS) certified unit addressing all environment aspects, impacts and needs and expectation of interested parties with respect to environment protection.</p>
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Compliance status of Environmental Clearance of Expansion of 6 and 7 Pits Colliery from 0.28 MTPA to 0.6 MTPA in an ML area 168.12 ha) of M/s Tata Steel Ltd., Village Jamadoba, Tehsil Jharia, dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/373/2010-IA.II (M) dated March 3, 2014

General Conditions:		
(i)	No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment and Forests.	The points mentioned in the EC letter will be strictly followed. Bord and Pillar method is being used for mining.
(ii)	No change in the calendar plan of production for quantum of mineral coal shall be made.	It will be strictly followed.
(iii)	Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for PM10, PM2.5, SO2 and NOx monitoring. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc carried out at least once in six months.	<p>The Air quality monitoring stations are:</p> <ul style="list-style-type: none"> (i) Jamadoba Group Office (Core Zone) (ii) New Village Colony, Jamadoba (Buffer Zone) (iii) Digwadih 12 No. Colony (Buffer Zone) (iv) 6&7 Pits Kalimandir area (Buffer Zone) <p>Monitoring of heavy metals in ambient air is being performed by an independent laboratory (recognised by MoEFCC) once in six months. The results are enclosed as Annexure-II.</p>
(iv)	Data on ambient air quality (PM10, PM 2.5, SO2 and NOx) and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly submitted to the Ministry including its concerned Regional Office and to the State Pollution Control Board and the Central Pollution Control Board once in six months. Random verification of samples through analysis from independent laboratories recognized under the EPA rules, 1986 shall be furnished as part of compliance report.	<p>Ambient air quality report (PM10, PM 2.5, SO2 and NOx) for the period from October'17 to March'18 is attached as Annexure-I. Additionally, M/s S S Environics India Pvt Ltd (an MoEFCC recognised Laboratory) has done monitoring on ambient air quality (PM10, PM 2.5, SO2, NOx, CO, NH3, O3) and heavy metals (As, Ni, Cd and Cr) in the month of Nov'17. The results are enclosed as Annexure-II.</p>

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(v)	<p>Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.</p>	<p>Regular noise survey is being conducted in the underground work environment. Workers are provided with ear-plugs/ muffs in high noise areas. The noise levels monitored in the month of January'18 is given below:</p> <table border="1" data-bbox="727 485 1474 1121"> <thead> <tr> <th>S. No</th> <th>Unit/Place</th> <th>Equipment / Location</th> <th>Distance (meter)</th> <th>Leq (dB 'A')</th> <th>Exposure Hours</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>11 Seam</td> <td>Pit Bottom, 11 Seam</td> <td>-</td> <td>68.3</td> <td>8 hrs./Shift</td> </tr> <tr> <td>2</td> <td rowspan="6">9 Seam 1S</td> <td>Transformer Room, 9th L / 1st Drift to 2nd Drift</td> <td>-</td> <td>65.1</td> <td>2 hrs./Shift</td> </tr> <tr> <td>3</td> <td>Transformer Room, 9th L / 7th - 8th D</td> <td>3 m.</td> <td>66.7</td> <td>8 hrs./Shift</td> </tr> <tr> <td>4</td> <td>Conveyor 902 discharge to Conveyor 901</td> <td>3 m.</td> <td>72.4</td> <td>8 hrs./Shift</td> </tr> <tr> <td>5</td> <td>Conveyor 903 discharge to Conveyor 902</td> <td>10 m.</td> <td>77.3</td> <td>6 hrs./Shift</td> </tr> <tr> <td>6</td> <td>Auxiliary fan, 11/2 L / 10th D Junction at Operator's Seat</td> <td>15 m.</td> <td>69.9</td> <td>6 hrs./Shift</td> </tr> <tr> <td>7</td> <td rowspan="3">Surface</td> <td>Pit Top, 6 Pit</td> <td>-</td> <td>73.2</td> <td>8 hrs./Shift</td> </tr> <tr> <td>8</td> <td>Pit Top, 6 Pit, Lock Room</td> <td>-</td> <td>78.5</td> <td>8 hrs./Shift</td> </tr> <tr> <td>9</td> <td>MMV Fan at Operator's seat</td> <td>-</td> <td>75.6</td> <td>8 hrs./Shift</td> </tr> </tbody> </table>	S. No	Unit/Place	Equipment / Location	Distance (meter)	Leq (dB 'A')	Exposure Hours	1	11 Seam	Pit Bottom, 11 Seam	-	68.3	8 hrs./Shift	2	9 Seam 1S	Transformer Room, 9 th L / 1 st Drift to 2 nd Drift	-	65.1	2 hrs./Shift	3	Transformer Room, 9 th L / 7 th - 8 th D	3 m.	66.7	8 hrs./Shift	4	Conveyor 902 discharge to Conveyor 901	3 m.	72.4	8 hrs./Shift	5	Conveyor 903 discharge to Conveyor 902	10 m.	77.3	6 hrs./Shift	6	Auxiliary fan, 11/2 L / 10 th D Junction at Operator's Seat	15 m.	69.9	6 hrs./Shift	7	Surface	Pit Top, 6 Pit	-	73.2	8 hrs./Shift	8	Pit Top, 6 Pit, Lock Room	-	78.5	8 hrs./Shift	9	MMV Fan at Operator's seat	-	75.6	8 hrs./Shift
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9	MMV Fan at Operator's seat		-	75.6	8 hrs./Shift																																																			
(vi)	<p>Industrial wastewater (workshop and wastewater from the mine) shall 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 before discharge. Oil and grease trap shall be installed before discharge of workshop effluents.</p>	<p>No industrial wastewater is generated in 6&7 Pits Colliery premises. There is a central workshop and garage in Jamadoba where oil and grease trap has been provided.</p>																																																						
(vii)	<p>Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transporting the mineral shall be covered with tarpaulins and optimally loaded.</p>	<p>Only the vehicles having valid PUC certificates are being allowed to operate for sand transportation. Some of the vehicle fitness certificates and PUC certificates have been shared during MoEFCC official's visit on 10.04.2018. Coal transportation is done through underground belt network. Only sand transportation is done through trucks which are covered with tarpaulins as well as optimally loaded.</p>																																																						

Compliance status of Environmental Clearance of Expansion of 6 and 7 Pits Colliery from 0.28 MTPA to 0.6 MTPA in an ML area 168.12 ha) of M/s Tata Steel Ltd., Village Jamadoba, Tehsil Jharia, dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/373/2010-IA.II (M) dated March 3, 2014

(viii)	Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with SPCB and data got analysed through a laboratory recognised under EP Rules, 1986.	We have a fully equipped Environment Cell Laboratory with qualified personnel. Laboratory has been recognized and registered with the Jharkhand State Pollution Control Board vide letter ref no. B-3922, dated-30.08.2012. The monitoring and analysis is also done at regular intervals by M/s S S Environics India Pvt. Ltd., an MoEF recognised laboratory (vide its notification 07.12.2012). We have also installed a Continuous Ambient Air Quality Monitoring Station at Jamadoba for real time monitoring with data transfer to JSPCB, Ranchi.
(ix)	Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects.	Persons working in dusty area have been provided with dust masks & have been given awareness training on safety & health aspects. Regular PME (Periodic Medical Examinations) are being done. The details have been provided earlier. IME and PME records of last three years have been shared on 10.04.2018 in hard copies and on 19.04.2018 over mail at <i>ro.ranchi-mef@gov.in</i> .
(x)	Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed and records maintained thereof. The quality of environment due to outsourcing and the health and safety issues of the outsourced manpower should be addressed by the company while outsourcing.	The periodic health check-up of the workers is done regularly by our Occupational Health Department, Tata Central Hospital, Jamadoba. We have a PME (Periodic Medical Examination) centre approved by DGMS where 20 % of the workers identified from workforce engaged in active mining operations are subjected to full medical check-up including hearing impairment check-up, etc. These results are regularly submitted to DGMS as per mines rules. We are doing similar medical examination for our contractor workers in Tata central hospital. Health check-up records of last three years have been shared on 10.04.2018 in hard copies.
(xi)	A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the company.	We have a separate Environmental Management Cell with four qualified personnel (One Head and Two Senior Managers and One Manager). The reporting of Environmental Cell is directly to General Manager of the Division.

Compliance status of Environmental Clearance of Expansion of 6 and 7 Pits Colliery from 0.28 MTPA to 0.6 MTPA in an ML area 168.12 ha) of M/s Tata Steel Ltd., Village Jamadoba, Tehsil Jharia, dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/373/2010-IA.II (M) dated March 3, 2014

(xii)	<p>The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its Regional Office at Bhubaneswar.</p>	<p>The Environment Cell has a separate fund for Environmental protection measures and for complying with legal requirements. The annual environmental expenditure for the financial year 2017-18 is Rs. 769.91 Lakhs. The details are given below-</p> <table border="1" data-bbox="732 470 1471 1188"> <thead> <tr> <th>S. No.</th> <th>Environment Management Activity</th> <th>Expenditure in Lakhs</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Stowing activities i.e filling of U/G voids for surface protection and prevention of subsidence</td> <td>708.89</td> </tr> <tr> <td>2</td> <td>Fire Control measures (Fire/Isolation Stopping and Nitrogen plant)</td> <td>1.00</td> </tr> <tr> <td>3</td> <td>Goaf Filling activities, drain repairing and maintenance, settling tank maintenance jobs</td> <td>7.5</td> </tr> <tr> <td>4</td> <td>Water spraying costs in underground and surface</td> <td>10</td> </tr> <tr> <td>5</td> <td>Making potable water in Water Treatment Plant & Supply to colonies</td> <td>24.77</td> </tr> <tr> <td>6</td> <td>Horticultural activities including green belt development and regular lawn and garden maintenance</td> <td>16.71</td> </tr> <tr> <td>7</td> <td>Plantation of saplings and maintenance</td> <td>1.04</td> </tr> <tr> <td colspan="2">Total Cost incurred</td> <td>769.91</td> </tr> </tbody> </table>	S. No.	Environment Management Activity	Expenditure in Lakhs	1	Stowing activities i.e filling of U/G voids for surface protection and prevention of subsidence	708.89	2	Fire Control measures (Fire/Isolation Stopping and Nitrogen plant)	1.00	3	Goaf Filling activities, drain repairing and maintenance, settling tank maintenance jobs	7.5	4	Water spraying costs in underground and surface	10	5	Making potable water in Water Treatment Plant & Supply to colonies	24.77	6	Horticultural activities including green belt development and regular lawn and garden maintenance	16.71	7	Plantation of saplings and maintenance	1.04	Total Cost incurred		769.91
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(xiii)	<p>The Project authorities shall 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 seven days 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 may also be seen at the website of the ministry of Environment & Forests at http://envfor.nic.in.</p>	<p>It has been complied with.</p>																											

Compliance status of Environmental Clearance of Expansion of 6 and 7 Pits Colliery from 0.28 MTPA to 0.6 MTPA in an ML area 168.12 ha) of M/s Tata Steel Ltd., Village Jamadoba, Tehsil Jharia, dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/373/2010-IA.II (M) dated March 3, 2014

(xiv)	<p>A copy of the environmental clearance letter shall be marked to concerned Panchayat/Zila Parishad, Municipal Corporation or Urban Local Body and local NGO, if any, from whom any suggestion/representation has been received while processing the proposal. A copy of the clearance letter shall also be displayed on the company's website.</p>	<p>It has been complied with.</p>
(xv)	<p>A copy of the clearance letter shall be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industry Centre and Collector's Office/Tehsildar's Office for 30 days.</p>	<p>It has been complied with.</p>
(xvi)	<p>The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated EC conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in the public domain. The monitoring data of environmental quality parameters (air, water, noise and soil) and critical pollutants such as PM10, PM2.5, SO2 and NOx (ambient and stack if any) and critical sectoral parameters shall also be displayed at the entrance of the project premises and mines office and in corporate office and on the company's website.</p>	<p>The clearance letter has been uploaded on the company's website. The compliance status (as Half-yearly compliance report) is being uploaded in company's website (Enclosed as Annexure-III). The display of information near the mine's office has been done.</p>

Compliance status of Environmental Clearance of Expansion of 6 and 7 Pits Colliery from 0.28 MTPA to 0.6 MTPA in an ML area 168.12 ha) of M/s Tata Steel Ltd., Village Jamadoba, Tehsil Jharia, dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/373/2010-IA.II (M) dated March 3, 2014

(xvii)	The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions (both in hard copy and in e-mail) to the respective Regional Office of the MOEF, the respective Zonal offices of CPCB and the SPCB.	It is being complied.
(xviii)	The Regional Office of this Ministry located at Bhopal shall monitor compliance of the stipulated conditions. The Project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/information/monitoring reports.	It will be complied with.
(xix)	The environmental statement for each financial year ending 31st March in Form-V 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 uploaded on the company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MOEF by E-mail.	The environmental statement for financial year 2016-17 has been submitted to JSPCB on 26 th September 2017 and it is also uploaded on the company website (Annexure-III). The soft copy of Environment Statement is also sent to MOEF by email at ro.ranchi-mef@gov.in.

AIR QUALITY REPORT

Core zone & Buffer zone

Period- October '17 to December '17

No. of sampling points: 4

Core zone (as per Air quality standards for coal mines in EPA Notification, 1988)									
Location	Latitude/ Longitude	Date	Weather Condition	SPM 24 Hourly Limit- 700 µg/m ³	RSPM 24 Hourly Limit- 300 µg/m ³	SO ₂ 24 Hourly Limit- 120 µg/m ³	NO _x 24 Hourly Limit- 120 µg/m ³		
Jamadoba Group Office	23°42'15.3" N/ 86°24'11" E	05.10.17	Clear	148.9	72.1	12.8	14.3		
		03.11.17	Clear	154.8	78.3	14.1	12.1		
		04.12.17	Clear	178.9	94.3	16.7	14.2		
Buffer zone (as per NAAQS 2009 for ambient air quality standards)									
Location	Latitude/ Longitude	Date	Weather Condition	PM10 24 Hourly Limit- 100µg/m ³	PM2.5 24 Hourly Limit- 60µg/m ³	SO ₂ 24 Hourly Limit- 80µg/m ³	NO ₂ 24 Hourly Limit- 80µg/m ³		
Digwadh 12 No. Colony	23°41'42" N/ 86°24'45.3" E	10.10.17	Rainy	94.4	51.1	8.7	9.9		
		07.11.17	Clear	84.1	44.0	7.0	8.2		
		06.12.17	Clear	94.3	57.2	10.2	9.0		
New Village Colony, Jamadoba	23°41'51" N/ 86°23'19" E	18.10.17	Clear	81.0	43.0	7.7	8.0		
		14.11.17	Clear	95.5	52.7	9.2	10.1		
		12.12.17	Clear	87.7	51.0	12.4	10.2		
6&7 Pits Kalimandir colony	23°43'15" N/ 86°24'12" E	24.10.17	Clear	78.4	45.5	9.9	10.1		
		23.11.17	Clear	88.8	53.8	9.0	11.3		
		18.12.17	Clear	93.2	54.2	11.1	9.4		

[Signature]
Sr. Manager (Environment)

AIR QUALITY REPORT

Core zone & Buffer zone

Period- January'18 to March'18

No. of sampling points: 4

Core zone (as per Air quality standards for coal mines in EPA Notification, 1988)									
Location	Latitude/ Longitude	Date	Weather Condition	SPM 24 Hourly Limit- 700 µg/m ³	RSPM 24 Hourly Limit- 300 µg/m ³	SO ₂ 24 Hourly Limit- 120 µg/m ³	NOx 24 Hourly Limit- 120 µg/m ³		
Jamadoba Group Office	23°42'15.3" N/ 86°24'11" E	02.01.18	Clear	189.5	92.5	15.8	16.4		
		19.02.18	Clear	187.5	90.5	15.5	16.0		
		05.03.18	Clear	168.7	85.4	12.3	14.4		
Buffer zone (as per NAAQS 2009 for ambient air quality standards)									
Location	Latitude/ Longitude	Date	Weather Condition	PM10 24 Hourly Limit- 100µg/m ³	PM2.5 24 Hourly Limit- 60µg/m ³	SO ₂ 24 Hourly Limit- 80µg/m ³	NO ₂ 24 Hourly Limit- 80µg/m ³		
Digwadih 12 No. Colony	23°41'42" N/ 86°24'45.3" E	08.01.18	Clear	89.5	51.4	9.8	9.9		
		14.02.18	Clear	87.5	49.5	9.5	10.5		
		12.03.18	Clear	82.2	43.3	8.8	9.2		
New Village Colony, Jamadoba	23°41'51" N/ 86°23'19" E	10.01.18	Clear	88.7	45.3	11.2	11.1		
		22.02.18	Clear	85.0	45.0	10.5	10.7		
		26.03.18	Clear	87.0	41.1	7.7	10.1		
6&7 Pits Kalimandir colony	23°43'15" N/ 86°24'12" E	15.01.18	Clear	96.6	49.7	10.0	8.2		
		26.02.18	Clear	94.5	47.5	9.5	8.0		
		19.03.18	Clear	97.2	46.5	10.1	8.4		



Sr. Manager (Environment)

**Ground Water Quality Analysis (Hand Pump & Dugwell)
Post-Monsoon Season- November 2017**

S.No	Date	Location	Time	Sample Parameter			
				Depth in meter (m)	pH	Electrical Conductivity, $\mu\text{S/m}$	Total Hardness (as CaCO_3), mg/l
1	10.11.2017	Purnadih (Jorapokhar)	09.30AM	2.48	7.7	560	414
2	10.11.2017	Bhowra 13 No	09.55AM	2.10	7.6	596	406
3	10.11.2017	Mohalbani Basti	10.15AM	2.84	7.6	632	528
4	10.11.2017	Digwadih 12 No	10.30AM	2.28	7.4	648	510
5	10.11.2017	Digwadih 10 No F & J	10.50AM	3.12	7.6	700	572
6	10.11.2017	Kalimela Shivmandir	01.10PM	0.58	7.6	560	360
7	10.11.2017	Kalimela Kalimandir	12.50PM	1.20	7.2	610	444
8	10.11.2017	Lower Dungari	12.35PM	1.05	7.3	1000	596
9	10.11.2017	Upper Dungari	12.10PM	1.10	7.1	570	420
10	16.11.2017	Pattia Basti	10.40AM	3.26	7.3	580	416
11	16.11.2017	Kenduadih Basti	11.00AM	1.30	7.6	620	508
12	10.11.2017	Jorapokhar Kushchand	01.35PM	2.26	7.6	640	488
13	10.11.2017	Jamadoba 3 No	11.50AM	1.48	7.5	710	536
14	10.11.2017	6&7 Pits (Ayodhya Nagri)	11.30AM	1.98	7.4	760	572


Sr. Manager (Environment)

**Ground Water Quality Analysis (Hand Pump & Dugwell)
Winter Season- January 2018**

S.No	Date	Location	Time	Sample Parameter			
				Depth in meter (m)	pH	Electrical Conductivity, $\mu\text{S/m}$	Total Hardness (as CaCO_3), mg/l
1	16.01.18	Purnadih (Jorapokhar)	09:40AM	5.18	8.0	612	384
2	16.01.18	Bhowra 13 No	10:00AM	3.24	7.9	588	404
3	16.01.18	Mohalbani Basti	10:35AM	5.17	7.5	612	532
4	16.01.18	Digwadih 12 No	10:50AM	5.18	7.5	652	448
5	16.01.18	Digwadih 10 No F & J	11:15AM	4.10	7.8	632	452
6	16.01.18	Kalimela Shivmandir	11:45AM	1.62	7.2	584	372
7	16.01.18	Kalimela Kalimandir	12:00PM	3.64	7.4	616	436
8	16.01.18	Lower Dungari	12:35PM	5.48	7.1	584	528
9	17.01.18	Upper Dungari	11:20AM	3.16	7.2	596	404
10	17.01.18	Pattia Basti	11:45AM	4.23	7.4	548	428
11	17.01.18	Kenduadih Basti	12:20PM	2.18	7.0	632	476
12	17.01.18	Jorapokhar Kushtand	10:05AM	2.87	7.4	612	464
13	17.01.18	Jamadoba 3 No	10:35AM	2.98	7.5	688	496
14	17.01.18	6&7 Pits (Ayodhya Nagri)	10:50AM	3.12	7.4	696	516



Sr. Manager (Environment)



S.S. Environics (India) Pvt. Ltd.

(An ISO 9001:2015, ISO 14001:2015 & OHSAS 18001:2007 Company)

Plot No-361/2314 "Sustenance Tower"

At: Patrapada, P.O: Dumuduma, Dist: Khurda, Bhubaneswar-751 019, Odisha
Tele Fax: 0674-2471574, E-mail : emails@ssenvironics.com

Ref. No: SSE/17/R-1282

Date: 15.12.2017


AMBIENT AIR QUALITY REPORTS

Name of Industry : M/s. Tata Steel Ltd, Jamadoba Group, Jharkhand
Month of Monitoring : 27.11. 2017

Sl. No.	Name of the Location	Time Weighted Average	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	NH ₃ (µg/m ³)	O ₃ (µg/m ³)	As (ng/m ³)	Ni (ng/m ³)	Cd (ng/m ³)	Cr (ng/m ³)
1.	Central Workshop Area Jamadoba	24hrly	87	46	17.1	12.0	0.27	32.1	5.2	BDL	1.6	BDL	BDL
2.	Officer's Colony 12 No. Digwadih	24hrly	77	42	11.0	11.0	0.24	30.0	5.7	BDL	BDL	BDL	BDL
3.	Near General Manager's Office Area	24hrly	92	39	10.2	9.4	0.18	35.0	5.8	BDL	BDL	BDL	BDL
4.	Jamadoba Colliery	24hrly	89	49	14.0	6.0	0.12	29.4	5.2	BDL	BDL	BDL	BDL
CPCB Standard		24hrly	100	60	80	80	4(1hr)	400	180 (1hr)	06 (Annual)	20 (Annual)	--	--
Method of Analysis & Code of Method			Gravimetric Method IS: 5182,Part-23	Gravimetric Method IS: 5182,Part-23	Improved West-Gaeke Method IS: 5182,Part-2	Modified Jacob & Hochheiser (Na. Arsenite) IS: 5182,Part-6	Non Dispersive Infrared Spectroscopy (NDIR) IS: 5182,Part-10	1.Chemiluminescence 2.Idophenol Blue Method APHA-401	1.Chemiluminescence 2.Chemical Method IS: 5182,Part-9	ICP Method After Sampling on EPM 2000 OR Equivalent Filter Paper.			

BDL Values: PM-10:-5µg/m³, PM-2.5:- 2.0µg/m³, SO₂:- 4µg/m³, NO_x:- 9µg/m³, CO:- 0.1mg/m³, Ozone:- 5µg/m³, Ni:- 0.05ng/m³, As:- 0.05ng/m³, NH₃:- 20µg/m³

For S.S. Environics (India) Pvt. Ltd.



A Group concerned with Environmental Pollution



S.S. Environics (India) Pvt. Ltd.

(An ISO 9001:2015, ISO 14001:2015 & OHSAS 18001:2007 Company)

Plot No-361/2314 "Sustenance Tower"

At: Patrapada, P.O: Dumuduma, Dist: Khurda, Bhubaneswar-751 019, Odisha

Tele Fax: 0674-2471574, E-mail : emails@ssevironics.com

Ref. No: SSE/17/R-1285

Date: 15.12.2017

WASTE WATER ANALYSIS REPORT

Name of Industry : M/s. Tata Steel Ltd, Jamadoba Group, Jharkhand

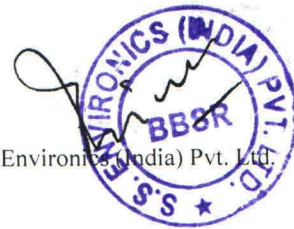
Name of Location : WW 3: 6 & 7 Pit Colliery

Date of Sampling : 28.11.2017

Date of analysis : 02.12.2017 to 08.12.2017

Sl. No.	PARAMETER	Method Of Testing	UNIT	Schedule-VI of E (P) Act (Discharge to Inland Surface Water)	WW 3
1.	pH	IS 3025 Part 11	--	6.5-9.0	7.36
2.	Total Suspended Solids	APHA 2540 D	mg/l	100	11.4
3.	BOD	IS 3025 Part 44	mg/l	30	5.0
4.	COD	IS 3025 Part 58	mg/l	250	14.0
5.	Oil & Grease	IS 3025 Part 39	mg/l	10	ND

N.B.: ND- Not Detectable



For S.S. Environics (India) Pvt. Ltd.



S.S. Environics (India) Pvt. Ltd.

(An ISO 9001:2015, ISO 14001:2015 & OHSAS 18001:2007 Company)

Plot No-361/2314 "Sustenance Tower"

At: Patrapada, P.O: Dumuduma, Dist: Khurda, Bhubaneswar-751 019, Odisha

Tele Fax: 0674-2471574, E-mail : emails@ssevenironics.com

Ref. No: SSE/17/R-1291

Date: 15.12.2017

SURFACE WATER QUALITY REPORT

Name of the Industry : M/s. Tata Steel Ltd, Jamadoba Group, Jharkhand
Location of Sampling : SW 1: Damodar River (Up Stream)
: SW 2: Damodar River (Down Stream)
Date of Sampling : 27.11.2017
Date of Analysis : 02.12.2017 to 09.12.2017

Sl. No.	Parameters	Method of Testing	Standards as Per IS:2296	Unit of measurement	Analysis Results	
					SW 1	SW 2
1	pH	IS 3025, Part 11/2002	6.5-8.5	--	7.42	7.53
2	Turbidity	IS 3025, Part 10	\$	NTU	1.0	1.0
3	Total Dissolved Solids	IS 3025, Part 15/2000	1500	mg/l	138	145
4	DO	IS: 3025, Part-38 (4.1)	4 (min)	mg/l	7.9	7.7
5	BOD (3) days at 27°C	IS: 3025, Part-44	3.0	mg/l	2.0	2.2
6	Chloride	IS 3025, Part 32/2003	600	mg/l	19.0	20.0
7	Fluoride as F	IS 3025, Part 60/2008	1.5	mg/l	0.32	0.35
8	Sulphates (SO ₄)	IS 3025, Part 24/2003	400	mg/l	5.2	3.8

For S.S. Environics (India) Pvt. Ltd.





S.S. Environics (India) Pvt. Ltd.

(An ISO 9001:2015, ISO 14001:2015 & OHSAS 18001:2007 Company)

Plot No-361/2314 "Sustenance Tower"

At: Patrapada, P.O: Dumuduma, Dist: Khurda, Bhubaneswar-751 019, Odisha

Tele Fax: 0674-2471574, E-mail : emails@ssevenironics.com

Ref. No: SSE/17/R-1292

Date: 15.12.2017

GROUND WATER QUALITY REPORT

Name of the Industry : M/s. Tata Steel Ltd, Jamadoba Group, Jharkhand
Location of Sampling : DW1: 6 & 7 Pit Canteen
Date of Sampling : 30.11.2017
Date of Analysis : 02.12.2017 to 11.12.2017

Sl. No	Parameter	Method of Testing	Unit of measurement	Standard as per IS: 10500	DW 1
1	Colour	IS 3025, Part 4/2002	Hazen	5	CL
2	Odour	IS 3025, Part 5/2002	-	U/O	U/O
3	Taste	IS 3025, Part 7 & 8/1984	-	Agreeable	AL
4	Turbidity	IS 3025, Part 10/2002	NTU	5	0.5
5	pH Value	IS 3025, Part 11/2002	\$	6.5-8.5	7.28
6	Total Hardness (as CaCO ₃)	IS 3025, Part 21/1996	mg/l	300	92.0
7	Iron (as Fe)	IS 3025, Part 53/2003	mg/l	0.3	0.12
8	Chloride (as Cl)	IS 3025, Part 32/2003	mg/l	250	20.49
9	Residual, free Chlorine	IS 3025, Part 26/2004	mg/l	0.2	ND
10	Dissolved Solids	IS 3025, Part 15/2000	mg/l	500	153.0
11	Calcium (as Ca)	IS 3025, Part 40/2004	mg/l	75	16.2
12	Copper (as Cu)	IS 3025, Part 42/1992	mg/l	0.05	0.008
13	Manganese (as Mn)	IS 3025, Part 59/2006	mg/l	0.1	0.025
14	Sulphate (as SO ₄)	IS 3025, Part 24/2003	mg/l	200	2.5
15	Nitrate (as NO ₃)	IS 3025, Part 34/2003	mg/l	45	0.28
16	Fluoride (as F)	IS 3025, Part 60/2008	mg/l	1.0	0.07
17	Phenolic Compounds (as C ₆ H ₅ OH)	IS 3025, Part 43/1992	mg/l	0.001	BDL
18	Mercury (as Hg)	IS 3025, Part 48/1994	mg/l	0.001	BDL
19	Cadmium (as Cd)	IS 3025, Part 41/1992	mg/l	0.01	BDL
20	Arsenic (as As)	IS 3025, Part 37/2003	mg/l	0.01	0.007
21	Cyanide (as CN)	IS 3025, Part 27/2003	mg/l	0.05	BDL
22	Lead (as Pb)	IS 3025, Part 47/2003	mg/l	0.05	BDL
23	Zinc (as Zn)	IS 3025, Part 49/2003	mg/l	5	0.32
24	Chromium (as Cr ⁺⁶)	IS 3025, Part 52/2003	mg/l	0.05	BDL
25	Total Coliform	9221B (APHA)	MPN/100ml	\$	NIL
26	Mineral Oil	GC Method	mg/l	0.01	ND
27	Alkalinity	IS 3025, Part 23/1986	mg/l	200	45.0
28	Aluminium as Al	IS 3025, Part 55/2003	mg/l	0.03	BDL
29	Boron	4500B (APHA)	mg/l	1.0	0.02

N.B.: BDL- Below detection limit, ND- Not Detectable, CL- Colour Less, \$- Not specified.

BDL Values :-Arsenic-0.001 mg/l, Lead-0.001 mg/l, Cadmium- 0.0001 mg/l, Cr⁺⁶- 0.002 mg/l, Copper- 0.001mg/l, Cyanide- 0.002 mg/l, Phenolic Compound-0.0007mg/l.

For S.S. Environics (India) Pvt. Ltd.



A Group concerned with Environmental Pollution



S.S. Environics (India) Pvt. Ltd.

(An ISO 9001:2015, ISO 14001:2015 & OHSAS 18001:2007 Company)

Plot No-361/2314 "Sustenance Tower"

At: Patrapada, P.O: Dumuduma, Dist: Khurda, Bhubaneswar-751 019, Odisha
Tele Fax: 0674-2471574, E-mail : emails@ssevenironics.com

Ref. No: SSE/17/R- 1293



Date: 15.12.2017

NOISE MONITORING REPORT

Name of the industry

: M/s. Tata Steel Ltd, Jamadoba Group, Jharkhand

Sl. No.	Noise Monitoring Locations	Date of Monitoring	Results in dB(A) Leq Day Time (6.00 am to 10.00 pm)	Results in dB(A) Leq Night Time (10.00 pm to 6.00 am)
1.	Central Workshop Area Jamadoba	27.11.2017	65.2	59.4
2.	Officer's Colony 12 No. Digwadih	27.11.2017	56.2	50.0
3.	Near General Manager's Office Area	27.11.2017	49.6	45.2
4.	Jamadoba Colliery	27.11.2017	61.2	55.8
Ambient Noise Standards (Industrial)			75.0	70.0


For S.S. Environics (India) Pvt. Ltd.


Upload of compliance report on company's website

Environment Compliance: X

www.tatasteel.com/sustainability/environment-compliance-reports/

2017

TATA STEEL MENU

Environmental Compliance Report - March 2017 to September 2017, Tata Steel HMC

Sustainability » Environment Compliance Reports

- Half Yearly EC Compliance Report of Prensingdhidh Sand Lease Apr 2017 to Sep 2017
- Half Yearly EC Compliance Report of Mahal Saharjuri Bagula Sand Lease Apr 2017 to Sep 2017
- Half Yearly EC Compliance Report of Lagla Mahal Sand Lease Apr 2017 to Sep 2017
- Half Yearly EC Compliance Report of Kalimela Open Cast Project Apr 2017 to Sep 2017
- Half Yearly EC Compliance Report of 6 and 7 Pits Colliery Apr 2017 to Sep 2017**
- Half Yearly EC Compliance Report of Bhelatand A. Colliery and Bhelatand Coal Washery Apr 2017 to Sep 2017

Environment Compliance: X

www.tatasteel.com/sustainability/environment-compliance-reports/

TATA STEEL MENU

Environmental Statement for Jamadoba Colliery for 2016-17

Sustainability » Environment Compliance Reports

- Environmental Statement for Jamadoba Coal Washery for 2016-17
- Environmental Statement for Digwadidh Colliery for 2016-17
- Environmental Statement for Bhelatand Coal Washery for 2016-17
- Environmental Statement for Bhelatand A. Colliery for 2016-17
- Environmental Statement for 6 & 7 Pits Colliery for 2016-17**
- Annual Environmental Statement of Manmora Mn Mine for 2016-17
- Annual Environmental Statement of Khondbond Iron & Mn Mine for 2016-17

TATA STEEL

ENVIRONMENTAL POLICY

Tata Steel's environmental responsibilities are driven by our commitment to preserve the environment and are integral to the way we do business.

1. We are committed to deal proactively with Climate Change issue by efficient use of natural resources & energy; reducing and preventing pollution; promoting waste avoidance and recycling measures; and product stewardship.
 - We shall identify, assess and manage our environment impact.
 - We shall regularly monitor, review and report publicly our environmental performance.
 - We shall develop & rehabilitate abandoned sites through afforestation and landscaping and shall protect and preserve the biodiversity in the areas of our operations.
 - We shall enhance awareness, skill and competence of our employees and contractors so as to enable them to demonstrate their involvement, responsibility and accountability for sound environmental performance.
2. We are committed to continual improvement in our environmental performance.
 - We shall set objective-targets, develop, implement and maintain management standards and systems, and go beyond compliance of the relevant industry standards, legal and other requirements.
3. We will truly succeed when we sustain our environmental achievement and are valued by the communities in which we work.

Date : November 1, 2013

A handwritten signature in black ink, appearing to read 'T V Narendran', written over a horizontal line.

T V Narendran
Managing Director



FOOD BASKET SURVEY

Food basket survey was conducted for 181 respondents of the neighbouring villages of Jamadoba and Bhelatand Group. The survey was conducted across 24 hamlets and wards nearby our operations area with the following objectives:-

1. To know the living conditions of the people.
2. To know the minimum wage of the people.
3. Develop an action plan to improve the living conditions by identifying gaps.

The following hamlets and municipal wards (24 villages) were surveyed:-

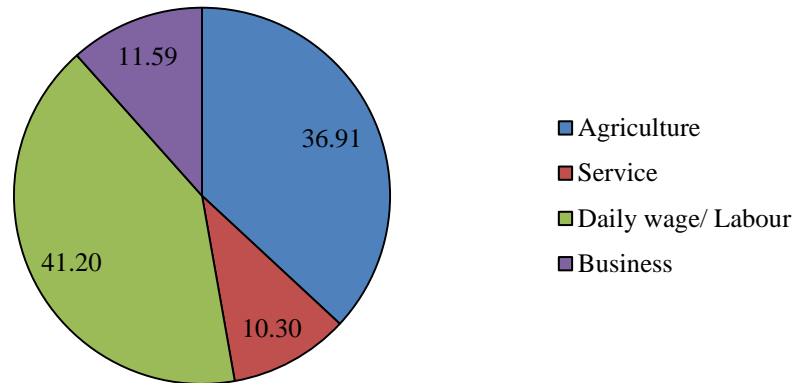
Baidnawadih, Banskapuria, Belubakhar, Bhelatand, Birajdih, Bustar, Chhatand, Debogram, Digwadih-10 no., Dukhidih, Dumri-4 no., Jahajtand, Jorapokhar, Kalimela, Kasiatand, Kushtand, Lalbunglow, Noonudih, Patia, Purnadih, Suyakanali, Tata Sijua-12 no, Tata Sijua 6 no., Upper Dungri.

Observations: -

- It was observed that there was a great skewedness in economic well among the population. The average income per Family is Rs. 8823.00 (181 beneficiaries).
- Out of 181 Households, 295 were earning members.
- The minimum earnings per day in unorganised sector and casual workers is approx. Rs208.00 (Total earning / total no. of earning members)
- No. of members per family is $991/181 = 5.47$
- Average Working persons per family is $295/181 = 1.63$
- The major demands that have come up is ameliorating unemployment and Drinking water and combating social evils like Alcoholism, Dowry and Domestic Violence. Unemployment is especially to the new generation who may not be having adequate number of jobs.
- The major livelihood is wage labour and also a substantial number of Population is engaged in Agriculture. Only a few are unemployed.

Livelihood	Numbers	Percentage (%)
Agriculture	86	36.90
Service	24	10.30
Daily wage/ Labour	96	41.20
Business	27	11.59
TOTAL	233	100%

LIVELIHOOD PATTERN %



Expenditure in (Rs) Per Family Per Month

S.No.	Expenditure Item	Expenditure in Rupees	Expenditure per family per month in Rupees
1	Transportation	49376	272
2	House	0	0
3	Electricity	24005	132.62
4	Water	3003	17.00
5	Education	65426	361.46
6	Medical	84259	465.37
7	Clothing	88034	486.37
8	Soc. Oblg.	25581.31	141.33
9	Food	3598.16	3598.16
10	Fuel	37851	209.12
	Total	381133.5	5683.43

- Total Expenditure per month- Rs 3,81,133.5
- Average expenditure per family per month- Rs 5683.58
- Average expenditure per member- (5683.58/5.4)= Rs 1052.4
- Income per family- Rs 8823
- Income per month per individual Earning member= Rs 208.00 x 26= Rs 5,408.00
- Expenditure Per person on food per month= Rs 3598.16/5.4= Rs 719.63
- % of Expenditure Spent on food by per person per month= 719.63/1052.40*100=68.37%

BASIC NEED WAGE:

Basic food expense per person X 100/% expense on food X 1/Avg working persons per family X Avg Family Size X 1.1

$$=719.63 \times 100/68.37 \times 1/1.63 \times 5.4 \times 1.1 = \text{Rs}3835.68$$

So, The Basic Need Wage is Rs 3835.68