



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/JCPP/38/ 445 /2018

May 18, 2018

Ref.: Environmental Clearance letter No.- J-11015/203/2011-IA.II(M) dated- 3rd March 2014.

SUB: Half Yearly Compliance Status Report of Environment Clearance conditions issued by MoEFCC, New Delhi to Jamadoba Coal washery, 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-11015/203/2011-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, CPCB, 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

Jharia Collieries Jamadoba 828 112 Dhanbad India

Tel 91 326 2320263/2320265/2320267 Fax 91 326 2320268

Regd. Office Bombay House 24 Homi Mody Street Fort Mumbai 400 001

Tel 91 22 66658282 Fax 91 22 66657724

Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com

HALF YEARLY COMPLIANCE REPORT
(PERIOD: OCTOBER'17 – MARCH'18)

JAMADOBA COAL WASHERY
(CAPACITY: EXPANSION FROM 1 TO 2 MTPA RAW COAL
THROUGHPUT)
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-11015/203/2011-
IA.II(M) DATED- 03.03.2014 ISSUED BY GOVT. OF INDIA, MINISTRY OF
ENVIRONMENT, FOREST AND CLIMATE CHANGE, NEW DELHI.**

Compliance status of Expansion of Jamadoba Coal washery (1 MTPA to 2 MTPA in 7 ha Area) of M/s Tata Steel Ltd. Tehsil Jharia, dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/203/2011-IA.II (M) dated March 3, 2014

S. No.	Condition	Compliance Status
Specific Condition		
(i)	Adequate green belt shall be provided around coal handling and other areas.	Greenery has been developed in many areas around the washery premises. Now a comprehensive green belt development plan to cover the entire washery campus area has being outlined. The expansion work is still in progress (approx. 90% job is completed) and is expected to be completed by Dec'2018. The plantation activities have been initiated from this monsoon. The greenbelt development plan has been shared with MoEFCC, office during its visit on 16.03.2018 as well as over mail at <i>ro.ranchi-mef@gov.in</i> .
(ii)	Action plan be developed and implemented for abandoned tailing ponds and for their restoration to the original land use.	All the existing tailing ponds are in operation since the washery expansion is yet to be completed. Once the Mechanized Tailing Dewatering System will be installed, the number of ponds will be reduced. However, action plan for restoration and reclamation of tailing pond has been prepared and implementation of the same has been initiated.
(iii)	Fly ash generated from the captive power plant of the washery be utilized for house construction, roads and such uses, strictly complying to the timeline in the EIA Notification, 2006 and maintaining proper records.	This is not applicable as we have ceased the operation of our captive Jamadoba power plant since April'15.
(iv)	No use of fly ash with sand will take place for stowing in underground mines.	This will be strictly followed for our captive underground mines.
(v)	Transportation of fly ash to be done properly by mechanically covered trucks.	This is not applicable as there is no fly ash being generated since April'15.
(vi)	The proponent shall connect all the villages in the leasehold area with water pipeline connection.	All the villages in the leasehold areas will be supplied safe drinking water through pipeline connection. A network of more than 22000 metres of pipeline connection has been established along with 33 water tanks (capacity of 4500 litres).

Compliance status of Expansion of Jamadoba Coal washery (1 MTPA to 2 MTPA in 7 ha Area) of M/s Tata Steel Ltd. Tehsil Jharia, dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/203/2011-IA.II (M) dated March 3, 2014

(vii)	The proponent shall expedite and implement the pilot plant to convert mine water into drinking/domestic water to supply the same to the population of Dhanbad and surrounding areas and shall continue to carry out this activity.	Mine water is already being converted into potable water by Tata Steel in our 4 nos. Water Treatments Plants (located at Jamadoba, Digwadih, Bhelatand and Malkera having cumulative capacity of around 8000 KL/D). The treated water is then supplied to our colonies and leasehold villages. This will continue in future too.
(viii)	Tanks/ponds shall be regularly cleaned and maintained. Plantation activities shall be intensified in the mine areas.	<p>Tanks/ ponds are regularly cleaned and maintained by TSRDS. Some of the glimpses of the activities are shown below. Plantation activities are undertaken every year in the barren mine leasehold areas. Further, TSRDS engages with the villagers for plantation in the village lands. In FY18, total 4 nos of ponds were renovated, 2 nos. of new ponds have been constructed in Jamadoba area.</p> 
(ix)	The proponent shall expedite the activities undertaken by TSRDS in over 30 villages in the leasehold area over 15000 households covering a population of about 1.4 lakh.	CSR activities of TSRDS are managed by a team of experts who are dedicatedly involved in providing benefits and improving standard of living in over 30 villages. The list of activities are developed in consultation with the village representatives and implemented in a time-bound manner.

Compliance status of Expansion of Jamadoba Coal washery (1 MTPA to 2 MTPA in 7 ha Area) of M/s Tata Steel Ltd. Tehsil Jharia, dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/203/2011-IA.II (M) dated March 3, 2014

(x)	CSR activities of TSRDS are managed by a team of experts who are dedicatedly involved in providing benefits and improving standard of living in over 30 villages. The list of activities are developed in consultation with the village representatives and implemented in a time-bound manner.	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.
(xi)	Cost for additional environmental protection measures shall be not less than Rs. 503.00 lakhs. The status of implementation including costs incurred shall be regularly reported to this Ministry and its respective Regional Office in the region as part of the compliance report and also uploaded on the company website.	The status of implementation of environmental protection measures including costs will be regularly submitted once the expansion job for washery is completed. It will also be uploaded on company website as part of compliance report. The regular expenditure incurred for environment protection and management are mentioned in Point no. xii of General Condition.
(xii)	The slope of the embankment towards the river shall be at least 1:3 for stability and shall be stabilized with plantation using native species selected from the study area.	The washery is about 1.5 kms away from the Damodar River. Hence it is not applicable.
(xiii)	Top soil shall be stored in the earmarked area and used within a year of its generation for green belt development and for plantation/reclamation.	There are no top soil dumps hence it is not applicable.
(xiv)	No external OB dump shall be created for the expansion project. Monitoring and management of existing reclaimed dumpsites shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment & Forests and its respective Regional Office on yearly basis.	Not applicable as this is a washery project.
(xv)	Catch drains and siltation ponds of appropriate size shall be constructed to arrest silt and sediment flows from soil,	There are no soil or OB dumps in the washery premises. Only the by-products are stored in the stockyards located in the washery premises

Compliance status of Expansion of Jamadoba Coal washery (1 MTPA to 2 MTPA in 7 ha Area) of M/s Tata Steel Ltd. Tehsil Jharia, dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/203/2011-IA.II (M) dated March 3, 2014

	OB and mineral dumps. The water so collected shall be utilised for watering the mine area, roads, green belt development, etc. The drains shall be regularly desilted and maintained properly.	which are sold off within a week.
(xvi)	Garland drains (size, gradient and length) 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 site. 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 washery area to channelize the surface runoff. The runoff is diverted to the tailing ponds and clear water is utilized in the washery. It will be further strengthened under washery expansion jobs.
(xvii)	Dimension of the retaining wall at the toe of the dumps and OB benches within the mine to check run-off and siltation shall be based on the rainfall data.	Not applicable as we do not have any opencast mines.
(xviii)	Crushers at the CHP shall be operated with high efficiency bag filters/water sprinkling system shall be provided to check fugitive emissions from crushing operations, conveyor system which shall be closed, haulage roads, transfer points, etc.	The following measures have been implemented: i) Dry-fog system at all transfer points of CHP. ii) Enclosures around crushers. iii) Belts have been covered on top and both sides. These arrangements will protect the coal mass moving on belt from blowing wind. In this way, the dust getting air borne is being minimized. iv) Fixed water sprinklers on the haulage roads. v) In addition, movable water sprinklers are also being deployed on the roads for dust suppression.
(xix)	Drills shall be wet operated only.	Not applicable.
(xx)	Controlled blasting shall be practiced with use of delay detonators and only during daytime. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders shall be implemented.	Not applicable.

Compliance status of Expansion of Jamadoba Coal washery (1 MTPA to 2 MTPA in 7 ha Area) of M/s Tata Steel Ltd. Tehsil Jharia, dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/203/2011-IA.II (M) dated March 3, 2014

(xxi)	The Washery shall be a zero-discharge and no wastewater shall be discharged from the washery into the drains/natural watercourses. No groundwater shall be used for washery operations. Recycled water shall be used for development and maintenance of green belt and in the plant operations.	Washery is already operating on a zero-discharge principle. No waste-water is discharged into the drains/ natural water systems. Only mine water is utilized for the washery operations as make up water requirement. The recycled water is again used for plant operations and green-belt development.
(xxii)	The raw coal, washed coal and middling and coal wastes (rejects) shall be stacked properly at earmarked site(s) within sheds/stockyards fitted with wind breakers/shields. Adequate measures shall be taken to ensure that the stored minerals do not catch fire. The storage period shall be not more than 2-3 days.	The material is being stacked properly at stockyards located within the washery. We have a well-established system for disposal of rejects/ tailings to consumers so that storage period is not more than 2-3 days.
(xxiii)	The proponent shall maintain proper records of the ash content of raw (ROM) coal, clean coal, middling and coal rejects along with quantum of raw coal obtained and washed and dispatched every month and the same shall be uploaded on the company website every month.	Proper records are already maintained and being uploaded on the company website every month. The records are attached here as Annexure V.
(xxiv)	All internal roads shall be concreted or black topped and the approach roads used for the project shall be blacked topped. Facilities for parking of trucks carrying raw coal from the linked coalmines shall be created within the Unit.	All the internal roads have been concreted while the approach roads are black-topped. There is a facility for parking of trucks within the unit.
(xxv)	Roads used for coal transportation to the linked DRI/TPP shall be developed with 3-tier avenue plantation using a mix of native species. The trucks used for coal transportation shall be high capacity trucks. Drivers of trucks for coal transportation shall be engaged based on past records of road safety and compliance of safety regulations and shall be suitably sensitized about road safety	There is no linked DRI/TPP. - Raw coal is received via underground coal conveyor belt network and therefore no truck transportation of coal is involved. - Clean coal is dispatched via rail from the Rail-yard situated on the washery premises. The clean coal is kept in storage bins and directly transferred to the rail wagons through covered coal-conveying system.

Compliance status of Expansion of Jamadoba Coal washery (1 MTPA to 2 MTPA in 7 ha Area) of M/s Tata Steel Ltd. Tehsil Jharia, dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/203/2011-IA.II (M) dated March 3, 2014

	and maintenance of vehicles to keep vehicular emissions to be within prescribed limits.	- As for the trucks moving within the washery, utilized for shifting of tailings and rejects to storage yard, all the given provisions related to road safety and driver competence are being strictly complied with.
(xxvi)	The roads (internal/approach and roads used for the project) shall be regularly cleaned with mechanical sweepers and with water sprinklers. A 3-tier avenue plantation shall be developed along the major approach roads, internal roads and nearby roads used by the company.	Fixed Water sprinklers have already been installed in the washery premises. Plantation along the road-side is done wherever feasible. A three-tier green belt will be developed along the boundary of washery during the next monsoon period as construction activity job is still going on.
(xxvii)	Green belt shall be developed along the areas such as the washery unit, crushing unit, and stockyards and at transfer points and in between mine operations and habitations.	Greenery has been developed in many areas around the washery premises. Green belt will be developed along the boundary of washery during this monsoon period.
(xxviii)	Hoppers of the coal crushing unit at the crushing shed and washery unit shall be fitted with high efficiency bag filters/Dust extractors and mist spray water sprinkling system shall be installed and operated effectively at all times of operation to check fugitive emissions from crushing operations, transfer points of belt conveyor systems which shall be closed and from transportation roads.	Dry-fog system has been already installed to suppress the dust generated at CHP and transfer points of belt conveyor systems. Fixed-type water sprinklers are also installed on the internal roads of the washery. These are operated effectively at all times to check the fugitive emissions. Fugitive dust emission monitoring is done on half-yearly basis. The values are within the stipulated norms.
(xxix)	The proponent shall ensure that coal such as stones, shale and other wastes of an ash content of 77% or more only shall be dumped into the mine voids. Coal rejects with an ash content of 76% or less shall be fully utilized for power generation in linked TPP.	It is being followed.
(xxx)	Regular monitoring of groundwater level and quality including levels of heavy metals such as Hg, Cd, Cr, Se, etc shall be carried out by establishing a network of existing wells and construction of new peizometers. The monitoring for quantity and quality of ground water as per IS:	The monitoring of groundwater level and quality is done four times a year. The groundwater quality report & groundwater level for post-monsoon (November) and winter season (January) are provided in Annexure-I. The monitoring of heavy metals such as Hg, Cd,

Compliance status of Expansion of Jamadoba Coal washery (1 MTPA to 2 MTPA in 7 ha Area) of M/s Tata Steel Ltd. Tehsil Jharia, dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/203/2011-IA.II (M) dated March 3, 2014

	<p>10500 shall be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons. Proper records of the data thus collected shall be maintained submitted to the Ministry of Environment & Forests and to the Central Pollution Control Board quarterly within one month of monitoring.</p>	<p>Cr, Se, etc in the groundwater was done during the hydro-geological study conducted by Indian School of Mines, Dhanbad. Data has been provided in previous compliance reports.</p>
(xxxii)	<p>As the entire mine water is proposed to be used for the mine-cum-washery operations, measures shall be taken for recharging ground water in and around the mine in the study area. A Plan for water conservation and recharge measures of ground water along with budgetary provisions be prepared and implemented in consultation with the Central/State Ground Water Board to mitigate the adverse impact of mining which may lead to depletion of ground water in the area. The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource in case monitoring of groundwater levels indicate decline of water table. Any additional water requirement for mining operation shall be met from rainwater use only. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.</p>	<p>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.</p> <p>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.</p> <p>The water requirement of the nearby villages is being met by the company already. Now piped drinking water is being provided.</p>
(xxxiii)	<p>ETP shall also be provided for treatment of effluents from workshop, CHP and an STP shall be provided in the colony and the treated effluents shall be used for green belt development. Outflow of rainfall, if any, from the mine shall meet prescribed norms and the water quality of such discharge including levels of heavy metals such as Hg, Cd, Cr., Se, etc shall be monitored at the exit points and records maintained thereof and also uploaded on the company website. Online</p>	<p>No effluent is discharged outside of the washery. There is no separate workshop in the washery premises. A central workshop exists in Jamadoba Colliery with adequate Oil and Grease Trap. A Sewage Treatment Plant (STP) has been installed in one of the colonies of Jharia Division and its treated water used for gardening and other purpose. Other colonies will also be covered with STPs in the near future.</p>

Compliance status of Expansion of Jamadoba Coal washery (1 MTPA to 2 MTPA in 7 ha Area) of M/s Tata Steel Ltd. Tehsil Jharia, dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/203/2011-IA.II (M) dated March 3, 2014

	monitoring equipment shall be installed by the proponent to ensure that the water quality parameters of mine water discharge are well within the General Discharge Standards under EP, Rules, 1986.	
(xxxiii)	Besides carrying out regular periodic health check-up of their workers, 10% of the workers identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any, through a recognised agency found in the district, and the results reported to this Ministry and to DGMS.	Not applicable. Though PME is done for washery workers periodically at our OH centre.
(xxxiv)	For monitoring land use pattern and for post mining land use, a time series of land use maps, based on satellite imagery (on a scale of 1: 5000) of the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series), and the report submitted to MOEF and its concerned Regional Office in the region.	Not applicable as there is no proposed changes in land use and land cover due to washery.
(xxxv)	Land oustees shall be compensated as per the norms laid out R&R Policy of CIL or the National R&R Policy or R&R Policy of the State Government whichever is higher.	Not applicable
(xxxvi)	A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests five year before mine closure for approval. Habitat Restoration Plan of the mine area shall be carried out using a mix of native species found in the original ecosystem, which were conserved in-situ and ex-situ in an identified area within	Not applicable.

Compliance status of Expansion of Jamadoba Coal washery (1 MTPA to 2 MTPA in 7 ha Area) of M/s Tata Steel Ltd. Tehsil Jharia, dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/203/2011-IA.II (M) dated March 3, 2014

	<p>the lease for reintroduction in the mine during mine reclamation and at the post mining stage for habitat restoration and for development of grasslands.</p>	
<p>(xxxvii)</p>	<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, Jamadoba Coal Washery 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>

Compliance status of Expansion of Jamadoba Coal washery (1 MTPA to 2 MTPA in 7 ha Area) of M/s Tata Steel Ltd. Tehsil Jharia, dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/203/2011-IA.II (M) dated March 3, 2014

B.	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.
(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.	The Air quality monitoring stations are: (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) 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.
(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.	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 November'17. The results are enclosed as Annexure-II.

Compliance status of Expansion of Jamadoba Coal washery (1 MTPA to 2 MTPA in 7 ha Area) of M/s Tata Steel Ltd. Tehsil Jharia, dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/203/2011-IA.II (M) dated March 3, 2014

(v)	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>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 March'18 is given below:</p> <table border="1" data-bbox="792 447 1484 1205"> <thead> <tr> <th>S. No.</th> <th>Unit / Place</th> <th>Equipment / Location</th> <th>Distance (meter away)</th> <th>Leq (dB 'A')</th> <th>Exposure Hours</th> </tr> </thead> <tbody> <tr> <td>1</td> <td rowspan="12">JCPP</td> <td>Screen floor, Stand – II vibrating Screen - 211# 1 to 211# 4</td> <td>4 m.</td> <td>81.7</td> <td>2 hrs/ Shift</td> </tr> <tr> <td>2</td> <td>Dense pump pit Stand- I floor</td> <td>2 m.</td> <td>80.2</td> <td>2 hrs/ Shift</td> </tr> <tr> <td>3</td> <td>Primary Magnetic Separator No- 1 & 2</td> <td>2 m.</td> <td>79.6</td> <td>4 hrs/ Shift</td> </tr> <tr> <td>4</td> <td>Mixer Box Floor (Near Control Room Side)</td> <td>2 m.</td> <td>80.1</td> <td>8 hrs /Shift</td> </tr> <tr> <td>5</td> <td>Discharge Shute (Screen 215# 1)</td> <td>2 m.</td> <td>79.9</td> <td>2 hrs/ Shift</td> </tr> <tr> <td>6</td> <td>Discharge Shute (Screen 215# 2)</td> <td>2 m.</td> <td>80.7</td> <td>2 hrs/ Shift</td> </tr> <tr> <td>7</td> <td>PTS (Control Room)</td> <td>-</td> <td>58.0</td> <td>8 hrs /Shift</td> </tr> <tr> <td>8</td> <td>CHP (Control Room)</td> <td>-</td> <td>72.5</td> <td>8 hrs/ Shift</td> </tr> <tr> <td>9</td> <td>In front of Diesel & Loco Shed</td> <td>-</td> <td>73.6</td> <td>4 hrs/ Shift</td> </tr> <tr> <td>10</td> <td>Discharge of Conveyor- 6 to Conveyor- 1</td> <td>2 m.</td> <td>80.6</td> <td>2 hrs/ Shift</td> </tr> <tr> <td>11</td> <td>Centrifuge Section Screen bowl</td> <td>-</td> <td>83.8</td> <td>8 hrs/ Shift</td> </tr> <tr> <td>12</td> <td>Stand #2 crossover Bridge</td> <td>4 m.</td> <td>83.7</td> <td>4 hrs/ Shift</td> </tr> </tbody> </table>	S. No.	Unit / Place	Equipment / Location	Distance (meter away)	Leq (dB 'A')	Exposure Hours	1	JCPP	Screen floor, Stand – II vibrating Screen - 211# 1 to 211# 4	4 m.	81.7	2 hrs/ Shift	2	Dense pump pit Stand- I floor	2 m.	80.2	2 hrs/ Shift	3	Primary Magnetic Separator No- 1 & 2	2 m.	79.6	4 hrs/ Shift	4	Mixer Box Floor (Near Control Room Side)	2 m.	80.1	8 hrs /Shift	5	Discharge Shute (Screen 215# 1)	2 m.	79.9	2 hrs/ Shift	6	Discharge Shute (Screen 215# 2)	2 m.	80.7	2 hrs/ Shift	7	PTS (Control Room)	-	58.0	8 hrs /Shift	8	CHP (Control Room)	-	72.5	8 hrs/ Shift	9	In front of Diesel & Loco Shed	-	73.6	4 hrs/ Shift	10	Discharge of Conveyor- 6 to Conveyor- 1	2 m.	80.6	2 hrs/ Shift	11	Centrifuge Section Screen bowl	-	83.8	8 hrs/ Shift	12	Stand #2 crossover Bridge	4 m.	83.7	4 hrs/ Shift
S. No.	Unit / Place	Equipment / Location	Distance (meter away)	Leq (dB 'A')	Exposure Hours																																																																
1	JCPP	Screen floor, Stand – II vibrating Screen - 211# 1 to 211# 4	4 m.	81.7	2 hrs/ Shift																																																																
2		Dense pump pit Stand- I floor	2 m.	80.2	2 hrs/ Shift																																																																
3		Primary Magnetic Separator No- 1 & 2	2 m.	79.6	4 hrs/ Shift																																																																
4		Mixer Box Floor (Near Control Room Side)	2 m.	80.1	8 hrs /Shift																																																																
5		Discharge Shute (Screen 215# 1)	2 m.	79.9	2 hrs/ Shift																																																																
6		Discharge Shute (Screen 215# 2)	2 m.	80.7	2 hrs/ Shift																																																																
7		PTS (Control Room)	-	58.0	8 hrs /Shift																																																																
8		CHP (Control Room)	-	72.5	8 hrs/ Shift																																																																
9		In front of Diesel & Loco Shed	-	73.6	4 hrs/ Shift																																																																
10		Discharge of Conveyor- 6 to Conveyor- 1	2 m.	80.6	2 hrs/ Shift																																																																
11		Centrifuge Section Screen bowl	-	83.8	8 hrs/ Shift																																																																
12		Stand #2 crossover Bridge	4 m.	83.7	4 hrs/ Shift																																																																
(vi)	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.	No waste-water is discharged outside the washery premises. 100% water is recirculated back for re-use in the washery. There is a central workshop and garage in Jamadoba where oil and grease trap has been provided.																																																																			
(vii)	Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transporting the mineral shall be covered with tarpaulins and optimally loaded.	Only the vehicles having valid PUC certificates are being allowed to operate. Coal transportation through trucks is done only from BCCL mines till washery and it is ensured that only optimally loaded trucks with proper tarpaulin cover are allowed into the washery premises.																																																																			

Compliance status of Expansion of Jamadoba Coal washery (1 MTPA to 2 MTPA in 7 ha Area) of M/s Tata Steel Ltd. Tehsil Jharia, dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/203/2011-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 recognized 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 Enviroincs 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.
(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.
(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 occupational health surveillance programme 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 annually 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. Contractual workers health examination is also done by PME centre.
(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 Expansion of Jamadoba Coal washery (1 MTPA to 2 MTPA in 7 ha Area) of M/s Tata Steel Ltd. Tehsil Jharia, dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/203/2011-IA.II (M) dated March 3, 2014

(xii)	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>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. 106.28 lakhs. The details are given below-</p> <table border="1" data-bbox="787 472 1399 1045"> <thead> <tr> <th>S. No.</th> <th>Environment Management Activity</th> <th>Expenditure in Lakhs</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Tailings Management System</td> <td>7.5</td> </tr> <tr> <td>2.</td> <td>Dust suppression system</td> <td>7</td> </tr> <tr> <td>3.</td> <td>Housekeeping measures includes removing spillage, improvement of roads</td> <td>24.5</td> </tr> <tr> <td>4.</td> <td>Spillage control measures</td> <td>3</td> </tr> <tr> <td>5.</td> <td>Mechanical dewatering system</td> <td>25</td> </tr> <tr> <td>6.</td> <td>Water spraying on roads for dust control</td> <td>4</td> </tr> <tr> <td>7.</td> <td>Chemical Dewatering</td> <td>14.4</td> </tr> <tr> <td>8.</td> <td>Horticultural activities including green belt development and regular lawn and garden maintenance</td> <td>16.71</td> </tr> <tr> <td>9.</td> <td>Plantation of saplings and maintenance</td> <td>4.17</td> </tr> <tr> <td colspan="2">Total Cost incurred</td> <td>106.28</td> </tr> </tbody> </table>	S. No.	Environment Management Activity	Expenditure in Lakhs	1.	Tailings Management System	7.5	2.	Dust suppression system	7	3.	Housekeeping measures includes removing spillage, improvement of roads	24.5	4.	Spillage control measures	3	5.	Mechanical dewatering system	25	6.	Water spraying on roads for dust control	4	7.	Chemical Dewatering	14.4	8.	Horticultural activities including green belt development and regular lawn and garden maintenance	16.71	9.	Plantation of saplings and maintenance	4.17	Total Cost incurred		106.28
S. No.	Environment Management Activity	Expenditure in Lakhs																																	
1.	Tailings Management System	7.5																																	
2.	Dust suppression system	7																																	
3.	Housekeeping measures includes removing spillage, improvement of roads	24.5																																	
4.	Spillage control measures	3																																	
5.	Mechanical dewatering system	25																																	
6.	Water spraying on roads for dust control	4																																	
7.	Chemical Dewatering	14.4																																	
8.	Horticultural activities including green belt development and regular lawn and garden maintenance	16.71																																	
9.	Plantation of saplings and maintenance	4.17																																	
Total Cost incurred		106.28																																	
(xiii)	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 .	It has been complied with.																																	
(xiv)	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,	It has been complied with.																																	

Compliance status of Expansion of Jamadoba Coal washery (1 MTPA to 2 MTPA in 7 ha Area) of M/s Tata Steel Ltd. Tehsil Jharia, dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/203/2011-IA.II (M) dated March 3, 2014

	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.	
(xv)	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.	It has been complied with.
(xvi)	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.	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 washery's office has been provided.
(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 has been complied with.
(xviii)	The Regional Office of this Ministry	It will be complied with.

Compliance status of Expansion of Jamadoba Coal washery (1 MTPA to 2 MTPA in 7 ha Area) of M/s Tata Steel Ltd. Tehsil Jharia, dist. Dhanbad, Jharkhand vide MoEFCC Letter no J-11015/203/2011-IA.II (M) dated March 3, 2014

	<p>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.</p>	
--	--	--

<p>(xix)</p>	<p>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.</p>	<p>The environmental statement for financial year 2016-17 has been submitted to JSPCB on 26th 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.</p>
---------------------	--	--

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	NOx 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		
Digwadih 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		



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	NO _x 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		
Digwadth 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		

Anshu
Sr. Manager (Environment)

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

S.No	Date	Location	Time	Sample Parameter			Total Hardness (as CaCO ₃), mg/l
				Depth in meter (m)	pH	Electrical Conductivity, μ S/m	
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 Kushitand	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

Anshu
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@ssenvironics.com

Ref. No: SSE/17/R-1290

Date: 15.12.2017

WASTE WATER ANALYSIS REPORT

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

Name of Location : WW 8: JCPP (Final Settling Pond)

Date of Sampling : 29.11.2017

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 8
1.	pH	IS 3025 Part 11	--	6.5-9.0	7.31
2.	Total Suspended Solids	APHA 2540 D	mg/l	100	8.0
3.	BOD	IS 3025 Part 44	mg/l	30	7.0
4.	COD	IS 3025 Part 58	mg/l	250	20.0
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

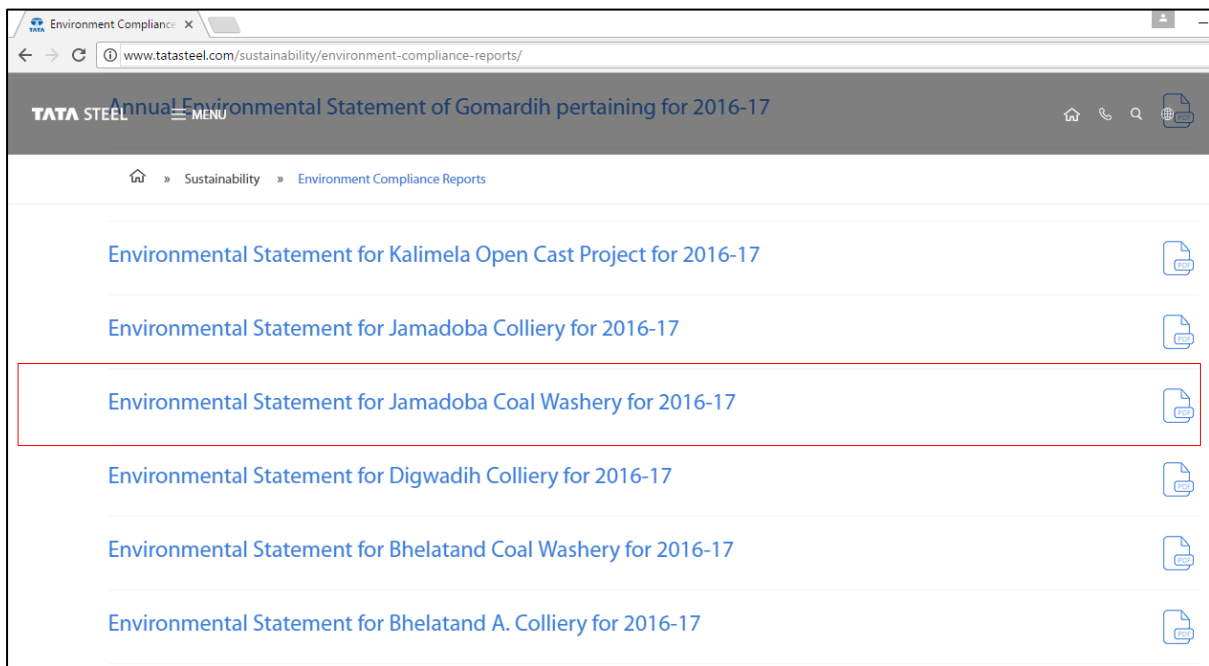
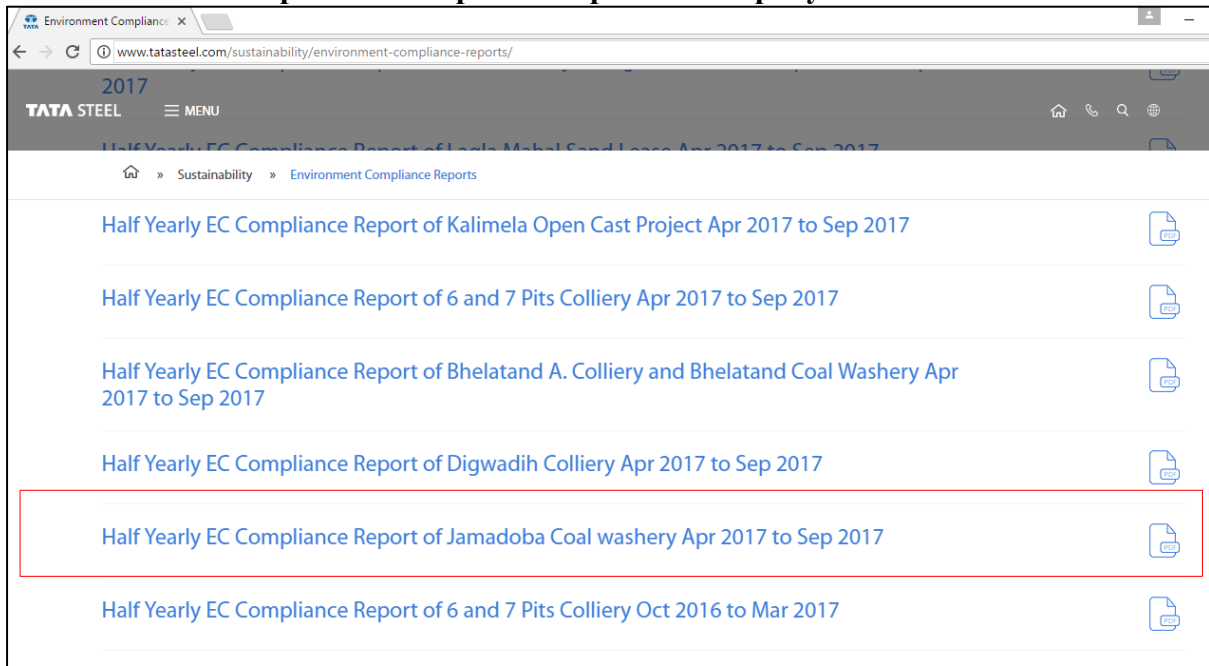
Name of the industry

: 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



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:-

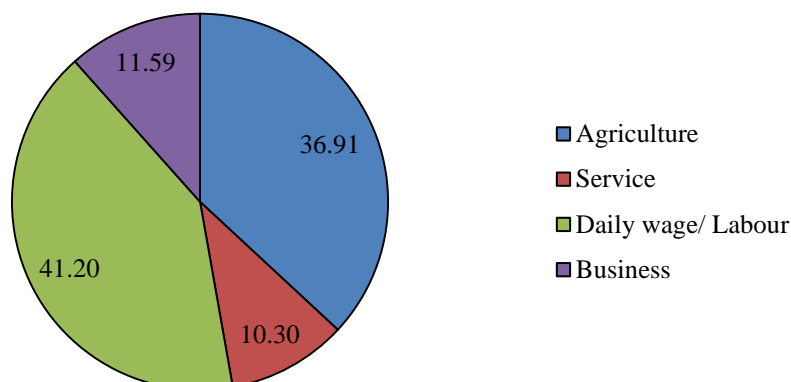
Baidnawadih, Banskapuria, Belubakhar, Bhelatand, Birajdih, Bustar, Chhatand, Debogram, Digwadih-10 no., Dukhidih, Dumri-4 no., Jahajtand, Jorapokhar, Kalimela, Kasiatand, Kushtand, Lalbungalow, Noonudih, Patia, Purnadih, Suyakanali, Tata Sijua-12 no, Tata Sijua 6 no., Upper Dungri.

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

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

