



**Shubhanand Mukesh**  
Head Environment Management

EMD/C-38/149 /19  
May 25, 2019

**Additional Principal Chief Conservator of Forests**  
(Eastern-Central) Regional Office (ECZ)  
Ministry of Environment, Forests & Climate Change  
Bungalow No. A-2, Shyamali Colony  
**RANCHI – 834 002**

**Subject: Submission of Six Monthly (October 2018 to March 2019) EC Compliance and monitoring reports of Cold Rolling Mill Complex (CRMC) to produce Cold Rolled Coils (2,50,000 TPA) and Hot Rolled Pickled Coils (50,000 TPA) and Cold Rolling Mill Complex (CRMC) Capacity Expansion (0.3 MTPA to 0.8 MTPA) (Ph-II) Jamshedpur, District East Singhbhum, Jharkhand.**

Reference:

1. MoEF EC letter no. MoEF Letter no J-11011/199/2007-IA.II (I) dated August 7, 2007
2. MoEF EC letter no. MoEF&CC Letter no F.NO J-11011/22/2013-IA (II) I dated September 15, 2015

This has reference to the captioned subject and cited references. It is to inform that we are herewith submitting six monthly Compliance reports for the conditions stipulated in the Environment Clearance of Cold Rolling Mill Complex (CRMC) to produce Cold Rolled Coils (2,50,000 TPA) and Hot Rolled Pickled Coils (50,000 TPA) and Cold Rolling Mill Complex (CRMC) Capacity Expansion (0.3 MTPA to 0.8 MTPA) (Ph-II) Jamshedpur, District East Singhbhum, Jharkhand. the period from October 2018 to March 2019 along with monitoring data report for your kind consideration.

The copy of above compliance report is also being sent in soft format through email (ro.ranchi-mef@gov.in) for your kind perusal. Also the same

**TATA STEEL LIMITED**

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**Shubhanand Mukesh**  
Head Environment Management

EC Compliance has been uploaded on MoEFCC website on portal  
<http://environmentclearance.nic.in/>.

Hope the above are in line with the statutory requirements.

Thanking you

Yours Faithfully

**For Tata Steel Limited**

**Shubhanand Mukesh**  
**Head, Environment Management**

Encl:

1. Six Monthly Compliance Status report of Environmental Clearance of Cold Rolling Mill Complex (CRMC) to produce Cold Rolled Coils (2,50,000 TPA) and Hot Rolled Pickled Coils (50,000 TPA)
2. Six Monthly Compliance Status report of Environmental Clearance of Cold Rolling Mill Complex (CRMC) Capacity Expansion (0.3 MTPA to 0.8 MTPA) (Ph-II)
3. Monitoring and analysis reports for Oct 2018 to March 2019

Copy to:

1. Zonal Officer, Central Pollution Control Board, Southern Conclave, Block 502, 5<sup>th</sup> and 6<sup>th</sup> Floors, 1582 Rajdanga Main Road, Kolkata - 700 107
2. Member Secretary, Jharkhand State Pollution Control Board, T.A. Division Building, HEC Campus, Dhurwa, Ranchi - 834004
3. Regional Officer, Jharkhand State Pollution Control Board, Jamshedpur

**TATA STEEL LIMITED**

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# **ENVIRONMENTAL CLEARANCE COMPLIANCE STATUS REPORT**

October 2018 to March 2019

**CRM Bara, Tata Steel Limited, Jamshedpur**

**Six Monthly Compliance Status report of Environmental Clearance of Cold Rolling Mill Complex (CRMC) to produce Cold Rolled Coils (2,50,000 TPA) and Hot Rolled Pickled Coils (50,000 TPA)**

**ENVIRONMENTAL MANAGEMENT DEPARTMENT  
TATA STEEL LIMITED  
JAMSHEDPUR**

Compliance Status of Environmental Clearance of Cold Rolling Mill Complex (CRMC) to produce Cold Rolled Coils (2,50,000 TPA) and Hot Rolled Pickled Coils (50,000 TPA) at Bara, Jamshedpur, District East Singhbhum, Jharkhand vide MoEF Letter no J-11011/199/2007-IA.II (I) dated August 7, 2007

Sl No.	Compliance Conditions	Compliance Status
	<b>Specific Conditions:</b>	
i	Fume extraction system shall be provided to extract acid vapors or fumes from pickling line, Pickling bath shall be covered with tight granite covers. Ventilation chamber shall be provided in Cold Rolling Mill (CRM) plant to control LPG emissions.	It has been stated that Fume extraction system including scrubber, Fume extraction ductwork and fan has been installed in Pickling line. Ventilation system has also been installed.  This system is used to collect, scrub, clean and vent fumes and vapors from the wash tank, pickling tanks, rinse tank, storage and re-circulating tanks. Components of this system are basically the scrubber, fan, ductwork and controls.
ii	Total water requirement from M/s JUSCO is about 1712 m <sup>3</sup> /day as per the present available data. No ground water shall be used. Wastewater treatment plant for treatment of wastewater shall be provided using oil separation, acid neutralization and clarification. The treated effluent shall be used for green belt development. The plant as indicated shall adopt zero discharge concepts in disposing the wastewater. Domestic effluent shall be treated in Sewage Treatment Plant.	It has been stated that the plant has been designed to limit water requirements from JUSCO within 1,712 m <sup>3</sup> /day. Water consumption regularly monitored & is within the prescribed permission given in the EC. At present, average usage of water is 1141 m <sup>3</sup> /day (Industrial 888 m <sup>3</sup> /day and domestic 253 m <sup>3</sup> /day) for the period Oct 2018 to Mar 2019. Ground water is not being used for any purpose. Effluent treatment plant has been installed. Treated effluent is being used for greenbelt development. Sewage treatment plant has also been installed.
iii	Iron oxide from Acid Regeneration Plant (ARP) shall be sold to authorized vendors for further use. Non-hazardous solid waste from neutralization process in CRM shall also be properly disposed of. Oily sludge shall be sold to authorized recyclers / re-processors for proper disposal through incineration.	Iron Oxide Generated 1704.3 Tons from Oct 2018 to Mar 2019 and sold to Redichem and other authorized vendors. Oily sludge (oily Scum) about 370.21 Tons during Oct 2018 to Mar 2019 is recycled by authorized recyclers.
iv	Green belt shall be developed in 2.5 ha (33%) out of the total of 7.4 ha within and around the plant premises as per the CPCB guidelines in consultation with DFO.	CRM Complex Bara has started Green Belt development in and around the plant. So far 2.45 ha area has been planted with 4808 Nos of saplings (Trees and Shrubs) such as <i>Alistonia Scholaris</i> , <i>Lagestromia Flosregia</i> , <i>Silver Oak</i> , <i>Juniperous Chinensis</i> , <i>Ficus Benjamina</i> , <i>Jacaranda Mimosifolia</i> , <i>Azadirachta indica</i> , <i>Terminalia arjuna</i> , <i>Bauhinia variegata</i> , <i>Terminalia tomentosa</i> etc. with more than 85% survival rate out of proposed 6250 Nos of trees & shrubs.

Compliance Status of Environmental Clearance of Cold Rolling Mill Complex (CRMC) to produce Cold Rolled Coils (2,50,000 TPA) and Hot Rolled Pickled Coils (50,000 TPA) at Bara, Jamshedpur, District East Singhbhum, Jharkhand vide MoEF Letter no J-11011/199/2007-IA.II (I) dated August 7, 2007

v	Permission from the State Government shall be obtained regarding impact of the proposed project on the Dalma Reserve Forest.	It has been stated that the project has obtained necessary permission from the State Forest Department and approval received vide letter no. 1204 dated 17-04-2008 & letter no 2614 dated 02-09-2014.
vi	As mentioned in EIA / EMP, 10.20 Crores and 0.21 Crores earmarked towards the capital cost and recurring cost per annum respectively for Environmental & Pollution Control Measures shall be judicially utilized to implement the conditions stipulated by MoEF as well as the State Government. The funds shall not be diverted for any other purpose.	It has been stated that an amount of Rs 21.51 Crores has been Spent on environmental and pollution control measures that including utilities, Fume Extraction scrubber, Acid Regeneration Plant and Effluent Treatment Plant etc.  This year (from Oct 2018 to Mar 2019) around 1.32 Crore has been spent on environment protection.
<b>General Conditions:</b>		
i.	The project authorities shall strictly adhere to the stipulations made by Jharkhand State Pollution Control Board (Jharkhand SPCB) and the State Government.	It has been stated that all the conditions of the JSPCB are being complied with.
ii.	No further expansion or modifications in the plant shall be carried out without prior approval of MoEF.	No further expansion or modifications in the plant is being carried out without prior approval.
iii.	The gaseous emissions from various process units shall conform to the load / mass based standards notified by this Ministry on 19th May, 1993 and standards prescribed from time to time. The state board may specify more stringent standards for the relevant parameters keeping in view the nature of the industry and its size and location. At no time, the emission level shall go beyond the prescribed standards. Interlocking facilities shall be provided so that process can be automatically stopped in case emission level exceeds the limit.	Gaseous emission levels including fugitive emission monitoring is being carried out on regular basis and records are maintained and submitted to JSPCB and MoEF&CC.  Guidelines/ code of practice of CPCB are also being followed.  Fugitive emission monitoring is being carried out on regular basis on given below location. 1. Near mill stand 2. Pickling exit coil car towards BC Bay 3. Wet area rinse section, near pickling RC tank-5  Data for the period Oct 2018 to Mar 2019 showed that fugitive emission at the above places in the range from 0.23 to 1.96 mg/m <sup>3</sup> . We follow the latest guidelines/code of practice issued by CPCB for secondary fugitive emission monitoring.

Compliance Status of Environmental Clearance of Cold Rolling Mill Complex (CRMC) to produce Cold Rolled Coils (2,50,000 TPA) and Hot Rolled Pickled Coils (50,000 TPA) at Bara, Jamshedpur, District East Singhbhum, Jharkhand vide MoEF Letter no J-11011/199/2007-IA.II (I) dated August 7, 2007

iv.	<p>At least four ambient air quality monitoring stations shall be established in the downward direction as well as where maximum ground level concentration of SPM, SO<sub>2</sub> and NO<sub>x</sub> are anticipated in consultation with the SPCB. Data on ambient air quality and stack emission should be regularly submitted to this ministry including its Regional Office at Bhubaneswar, SPCB and CPCB once in six months.</p>	<p>Ambient air quality monitoring stations has been identified at four locations in the plant premises.</p> <ol style="list-style-type: none"> <li>1. Near Mill dispatch Shutter</li> <li>2. Near Pickling dispatch shutter</li> <li>3. Near Roll Shop shutter</li> <li>4. Near HR Receiving Shutter</li> </ol> <p>Online ambient air quality monitoring and continuous stack monitoring facilities will be provided and report will be submitted.</p> <p>Fume extraction system including scrubber, fume extraction ductwork and fan has been installed in pickling line. Ventilation system has also been installed.</p> <p>Monitoring data from Oct 2018 to Mar 2019 shows PM<sub>10</sub> ranges from 100 to 126 µg/m<sup>3</sup>, PM<sub>2.5</sub> ranges from 53 to 62 µg/m<sup>3</sup>, SO<sub>2</sub> ranges from 11 to 16 µg/m<sup>3</sup>, NO<sub>x</sub> ranges from 15 to 20 µg/m<sup>3</sup>.</p> <p>Water sprinkling and mechanized sweeping machine frequency has been increased to control duct emission.</p>
V & VI	<p>In-plant control measures for checking fugitive emissions from all the vulnerable sources shall be provided. Further, specific measures like water sprinkling shall be carried out and fugitive emissions shall be controlled, regularly monitored and records maintained.</p> <p>Secondary fugitive emissions shall be controlled within the latest permissible limits issued by the Ministry and regularly monitored. Guidelines / Code of Practice issued by the CPCB in this regard shall be followed.</p>	<p>Fugitive emission monitoring is being carried out on regular basis on given below location.</p> <ol style="list-style-type: none"> <li>1. Near Mill Stand</li> <li>2. Pickling Exist coil car towards BC Bay</li> <li>3. Wet area Rinse section, Near Pickling RC Tank No-5</li> </ol> <p>Data for the period Oct 2018 to Mar 2019 showed that fugitive emission at the above places in the range from 0.23 to 1.96mg/m<sup>3</sup>.</p>
vii.	<p>Industrial waste water shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19<sup>th</sup> May, 1993 and 31<sup>st</sup> December, 1993 or as amended from time to time. The treated waste water shall be utilized for plantation purpose.</p>	<p>Effluent treatment plants for the treatment of oily and acidic waste have been installed. The treated water is used for dust suppression and other low end uses.</p> <p>As per the data is being submitted for the period Oct 2018 to Mar 2018, pH, TSS, Oil &amp; Grease and Other parameters have been found within the prescribed limits.</p>

Compliance Status of Environmental Clearance of Cold Rolling Mill Complex (CRMC) to produce Cold Rolled Coils (2,50,000 TPA) and Hot Rolled Pickled Coils (50,000 TPA) at Bara, Jamshedpur, District East Singhbhum, Jharkhand vide MoEF Letter no J-11011/199/2007-IA.II (I) dated August 7, 2007

viii.	The Company shall develop surface as well as ground water harvesting structures to harvest the rainwater for utilization in the lean season besides recharging the ground water table.	Rain water harvesting structures have been made. Two numbers of collecting pits of total capacity 25 KL made and connected with down comers of plant shed. 59 m <sup>3</sup> Water has been used for toilet flushing and greenery development.
ix.	The overall noise levels in and around the plant area shall be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (daytime) and 70 dBA (night time).	High noise generating equipment has been provided with acoustic enclosures and silencer. Noise level is being monitored Near Pickling Line Exit, Near Mills Stand, Near Mills Stand Outside, Near Compressor Room, near Boiler House, near ARP Pump Room, Near Main office etc.
x	Recommendations made in the Corporate Responsibility for Environment Conservation (CREP) issued for the steel plant shall be implemented.	For the Cold rolling mill there is no specific recommendation has been made under CREP. However solid wastes such as iron oxide sold to authorized vendors and metallic scraps generated in the CRM Complex Bara have been re-utilised at Tata Steel works. Besides these, generated oily scum is being recycled by Bristol Pvt Ltd. (Authorized recyclers from West Bengal Pollution Control Board, Kolkata)
xi.	Occupational Health Surveillance of the workers shall be done on the regular basis and records maintained as per the Factories Act.	It has been stated that during the period Apr 2018 to Mar 2019, occupational health surveillance has been conducted for 188 Workers of the plant and 383 contract workers as per factory act and records are maintained. Necessary counselling has been also given by the Doctors to the concerned patients.
xii.	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA / EMP report.	It has been stated that Environment protection measures proposed in the EIA/EMP report are being implemented.

Compliance Status of Environmental Clearance of Cold Rolling Mill Complex (CRMC) to produce Cold Rolled Coils (2,50,000 TPA) and Hot Rolled Pickled Coils (50,000 TPA) at Bara, Jamshedpur, District East Singhbhum, Jharkhand vide MoEF Letter no J-11011/199/2007-IA.II (I) dated August 7, 2007

xiii.	The Company must undertake socio-economic development activities in the surrounding villages like community development programmes, educational programmes, drinking water supply and health care etc.	It has been stated that environment protection measures proposed in the EIA/ EMP report will be made according to the EIA/ EMP report. Community development programs in surrounding areas are being implemented by TSRDS/ Urban Services of Tata Steel. Major activities include education, health & sanitation, drinking water supply, sports and cultural promotion is being carried out. Health care program for Bagunhatu and Babudih, Gwala Basti conducted. Drinking Water facility has been provided at Bagunhatu.
xiv.	The Regional Office at Bhubaneswar / CPCB / SPCB will monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation shall be submitted to them regularly.	Six monthly compliance reports with monitored data are being sent regularly to the Regional Office at Bhubaneswar / CPCB / JSPCB.
xv.	The Project Proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB / Committee and may also be seen at website of the Ministry of Environment and Forests at <a href="http://envfor.nic.in">http://envfor.nic.in</a> . This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the Regional Office.	The Notice has been advertised in two local newspapers viz. Chamakta Aina (Hindi) and Avenue Mail (English) on August 11, 2007 and communication to this effect was also sent to the MoEF vide our letter no. EMD/C38/2119/07 dated August 18, 2007.
xvi.	Project authorities should inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	It has been stated that plant construction activities started during April 2008 and the plant has been commissioned and commercial production started in May 2011.



# **ENVIRONMENTAL CLEARANCE COMPLIANCE STATUS REPORT**

October 2018 to March 2019

**CRM Bara, Tata Steel Limited, Jamshedpur**

**Six Monthly Compliance Status report of Environmental  
Clearance of Cold Rolling Mill Complex (CRMC) Capacity  
Expansion (0.3 MTPA to 0.8 MTPA)**

**ENVIRONMENTAL MANAGEMENT DEPARTMENT  
TATA STEEL LIMITED  
JAMSHEDPUR**

Compliance Status of Environmental Clearance of Cold Rolling Mill Complex (CRMC) Capacity Expansion (0.3 MTPA to 0.8 MTPA) (Ph-II) Jamshedpur, District East Singhbhum, Jharkhand vide MoEF&CC Letter no F.NO J-11011/22/2013-IA (II) I Dated on 15<sup>th</sup> Sept 2015

Sl No.	Compliance Conditions	Compliance Status
<b>Specific Conditions:</b>		
i	The PP shall prepare a WL Conservation Plan in and around the project site drawn up in consultation with the PCCF (WL), Government of Jharkhand. Separate Funds shall be earmarked for the various activities identified and details of the expenditure made thereon shall be submitted as part of the Compliance Report to RO, Ranchi.	Wild life conservation survey & plan has been made. Report submitted to PCCF (WL) Government of Jharkhand vide letter no C41 EMD/C-41/128/16 dated August 22, 2016 and approved on dated 13 <sup>th</sup> Nov 2017.
ii	On-line ambient air quality monitoring and continuous stack monitoring facilities for all the stacks shall be provided and sufficient air pollution control devices viz. Electrostatic precipitator (ESP), and bag filters etc., shall be provided to keep the emission levels below 50 mg/Nm <sup>3</sup> by installing energy efficient technology.	<p>Ambient air quality monitoring stations has been identified at four locations in the plant premises.</p> <ol style="list-style-type: none"> <li>1. Near Mill dispatch shutter</li> <li>2. Near Pickling dispatch shutter</li> <li>3. Near Roll Shop shutter</li> <li>4. Near HR Receiving Shutter</li> </ol> <p>One Online ambient air quality monitoring has been provided inside CRM Complex Bara and Continuous stack monitoring facilities has been provided in boiler stack and SB Machine. Server connectivity with CPCB/JSCPB is in under progress.</p> <p>Fume extraction system including scrubber, fume extraction ductwork and fan has been installed in pickling line. Ventilation system has also been installed.</p> <p>Monitoring data from Oct 2018 to Mar 2019 shows PM<sub>10</sub> ranges from 100 to 126 µg/m<sup>3</sup>, PM<sub>2.5</sub> ranges from 53 to 62 µg/m<sup>3</sup>, SO<sub>2</sub> ranges from 11 to 16 µg/m<sup>3</sup>, NO<sub>x</sub> ranges from 15 to 20 µg/m<sup>3</sup>.</p> <p>Water sprinkling and mechanized sweeping machine frequency has been increased to control duct emission.</p>
iii	In-plant control measures like bag filters, de-dusting and dust suppression system shall be provided to control fugitive emissions from all the vulnerable sources. Water sprinkling system shall be provided to control secondary fugitive dust emissions generated during screening, loading, unloading, handling and storage of raw materials etc.	Fume extraction system including scrubber, Fume extraction ductwork and fan has been installed in Pickling line. Ventilation system has also been installed. Suitable means is provided depending upon secondary fugitive emission such as mechanized road cleaning, water sprinkling, etc.

Compliance Status of Environmental Clearance of Cold Rolling Mill Complex (CRMC) Capacity Expansion (0.3 MTPA to 0.8 MTPA) (Ph-II) Jamshedpur, District East Singhbhum, Jharkhand vide MoEF&CC Letter no F.NO J-11011/22/2013-IA (II) I Dated on 15<sup>th</sup> Sept 2015

iv	Gaseous emission levels including secondary fugitive emissions from all the sources shall be controlled within the latest permissible limits issued by the Ministry vide G.S.R. 414(E) dated 30 <sup>th</sup> May, 2008 and regularly monitored. Guidelines/Code of Practice issued by the CPCB shall be followed.	Gaseous emission levels including fugitive emission monitoring is being carried out on regular basis and records are maintained and submitted to JSPCB and MoEF&CC.  Guidelines/ code of practice of CPCB are also being followed. Fugitive emission monitoring is being carried out on regular basis on given below location. 1. Near mill stand 2. Pickling exit coil car towards BC Bay 3. Wet area rinse section, near pickling RC tank-5  Data for the period Oct 2018 to Mar 2019 showed that fugitive emission at the above places in the range from 0.23 to 1.96 mg/m <sup>3</sup> . We follow the latest guidelines/ code of practice issued by CPCB for secondary fugitive emission monitoring.
v	The water consumption shall not exceed as per the standard prescribed for the sponge iron plants and steel plants.	Water consumption regularly monitored & is within the prescribed permission given in the EC. At present, average usage of water is 1141 m <sup>3</sup> /day (Industrial 888 m <sup>3</sup> /day and domestic 253 m <sup>3</sup> /day) for the period Oct 2018 to Mar 2019.
vi	Efforts shall further be made to use maximum water from the rain water harvesting sources. If needed, capacity of the reservoir shall be enhanced to meet the maximum water requirement. Only balance water requirement shall be met from other sources. Use of air cooled condensers shall be explored and closed circuit cooling system shall be provided to reduce water consumption and water requirement shall be modified accordingly.	Rain water harvesting structures have been made. Two numbers of collecting pits of total capacity 25 KL made and connected with down comers of plant shed. 59 m <sup>3</sup> Water has been used for toilet flushing and greenery development during Apr 2018 to Mar 2019.  Closed circuit cooling system is deployed to reduce water consumption.
vii	All the effluents shall be treated and used for dust suppression and green belt development. No effluent shall be discharged and 'zero' discharge shall be adopted. Domestic wastewater will be treated in the Sewage Treatment Plant.	Effluent treatment plants for the treatment of oily and acidic waste have been installed. The treated water is being used for plantation/dust suppression and other low end uses.  STP has been installed for the treatment of domestic waste having capacity of 25 KLD.

Compliance Status of Environmental Clearance of Cold Rolling Mill Complex (CRMC) Capacity Expansion (0.3 MTPA to 0.8 MTPA) (Ph-II) Jamshedpur, District East Singhbhum, Jharkhand vide MoEF&CC Letter no F.NO J-11011/22/2013-IA (II) I Dated on 15<sup>th</sup> Sept 2015

viii	Regular monitoring of influent and effluent surface, sub-surface and ground water shall be ensured and treated wastewater shall be meet the norms prescribed by the State Pollution Control Board or described under the E (P) Act whichever are more stringent. Leachate study for the effluent generated and analysis shall also be regularly carried out and report submitted to the Ministry's Regional Office at Ranchi, SPCB and CPCB.	Effluent treatment plants have been installed. The treated water is used for plantation/dust suppression and other low end uses.  As per the data is being submitted for the period Oct 2018 to Mar 2019 pH, TSS, Oil & Grease and Other parameters have been found within the prescribed limits. Leachate study for the effluent generated and analysis will also be regularly carried out. Sub-surface and ground water monitoring will be carried out and report will also be submitted to the Ministry's Regional Office at Ranchi, SPCB and CPCB.
ix	Proper handling, storage, utilization and disposal of all the solid waste shall be ensured and regular report regarding toxic metal content in the waste material and its composition, end use of solid/hazardous waste shall be submitted to the Ministry's Regional Office at Ranchi, SPCB and CPCB.	Solid wastes such as iron oxide generated in the CRM Bara have been sold to paint industry and other recyclers. Besides this, generated oily scum is being recycled by Bristol Pvt Ltd. (Authorized recyclers from West Bengal Pollution Control Board, Kolkata). WWTP sludge is disposed by Adityapur Waste Management Pvt Ltd.  Details of solid waste and manifest of hazardous waste is being submitted to statutory bodies.
x	A time bound action plan shall be submitted to reduce solid waste, its proper utilization and disposal.	It has been stated that about 1704.3 Ton of Iron Oxide generated from Oct 2018 to Mar 2019 and sold to Redichem and other outside authorized vendors. Oily sludge (oily Scum) about 370.21 Tons during Oct 2018 to Mar 2019 is recycled by authorized recyclers.
xi	Proper utilization of fly ash shall be ensured as per Fly Ash Notification, 1999 and subsequent amendment in 2003 and 2009. All the fly ash shall be provided to cement and brick manufactures for further utilization and Memorandum of Understanding shall be submitted to the Ministry's Regional Office at Ranchi.	Not Applicable.
xii	Risk and Disaster Management Plan along with the mitigation measures shall be prepared and a copy submitted to the Ministry's Regional Office at Ranchi, SPCB and CPCB within 3 months of issue of environment clearance letter.	Onsite emergency plan has been made and regular mock drills are being carried out as per plan. This will be further studied and improved over a period of time.

Compliance Status of Environmental Clearance of Cold Rolling Mill Complex (CRMC) Capacity Expansion (0.3 MTPA to 0.8 MTPA) (Ph-II) Jamshedpur, District East Singhbhum, Jharkhand vide MoEF&CC Letter no F.NO J-11011/22/2013-IA (II) I Dated on 15<sup>th</sup> Sept 2015

xiii	A time bound action plan shall be submitted to reduce solid waste, its proper utilization and disposal.	Solid waste is handled as per solid waste management plan. For example, Iron oxide is being sold to paint manufacturing; generated scrap is reused in Tata Steel works.
xiv	As proposed, green belt shall be developed in 33% of plant area. Selection of plant species shall be as per the CPCB guidelines in consultation with the DFO.	CRM Complex Bara has started Green Belt development in and around the plant. So far 2.45 ha area has been planted with 4808 Nos of saplings (Trees and Shrubs) such as <i>Alistonia Scholaris</i> , <i>Lagestromia Flosregia</i> , <i>Silver Oak</i> , <i>Juniperous Chinensis</i> , <i>Ficus Benjamina</i> , <i>Jacaranda Mimosifolia</i> , <i>Azadirachta indica</i> , <i>Terminalia arjuna</i> , <i>Bauhinia variegata</i> , <i>Terminalia tomentosa</i> etc. with more than 85% survival rate out of proposed 6250 Nos of trees & shrubs.
xv	All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Steel Plants shall be implemented.	For the Cold rolling mill there is no specific recommendation has been made under CREP. However solid wastes such as iron oxide sold to authorized vendors and metallic scraps generated in the CRM Complex Bara have been re-utilised at Tata Steel works. Besides these, generated oily scum is being recycled by Bristol Pvt Ltd. (Authorized recyclers from West Bengal Pollution Control Board, Kolkata)
xvi	At least 5% of the total cost of the expansion project shall be earmarked towards the Enterprise Social Commitment (ESC) based on locals need and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office at Ranchi.	Action plan prepared in align with EIA report for 0.8 MTPA and progress report will be submitted accordingly on regular basis.
xvii	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, Safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	No person stays at the site. All facilities like food, medical health care, toilets, safe drinking water, etc. has been provided. All other facilities are being provided as and when required.
<b>B. General Condition</b>		
i	The project authorities must strictly adhere to the stipulations made by the Jharkhand Pollution Control Board and the State Government.	CRM Bara complex project is being strictly adhering to the stipulations made by the JSPCB and State Government.

Compliance Status of Environmental Clearance of Cold Rolling Mill Complex (CRMC) Capacity Expansion (0.3 MTPA to 0.8 MTPA) (Ph-II) Jamshedpur, District East Singhbhum, Jharkhand vide MoEF&CC Letter no F.NO J-11011/22/2013-IA (II) I Dated on 15<sup>th</sup> Sept 2015

ii	No further expansion or modifications in the plant shall be carried out without prior approval of the MoEF&CC.	No further expansion or modifications in the plant is being carried out without prior approval.
iii	At least four ambient air quality monitoring stations should be established in the downward directions well as where maximum ground level concentration of PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub> are anticipated in consultation with the SPCB. Data on ambient air quality and stack emission shall be regularly submitted to this Ministry including its Regional Office at Ranchi and the SPCB/CPCB once in six months.	<p>Ambient air quality monitoring stations has been identified at four locations in the plant premises.</p> <ol style="list-style-type: none"> <li>1. Near Mill dispatch Shutter</li> <li>2. Near Pickling dispatch shutter</li> <li>3. Near Roll Shop shutter</li> <li>4. Near HR Receiving Shutter</li> </ol> <p>One Online ambient air quality monitoring equipment has been provided in inside CRM Complex Bara and continuous stack monitoring facilities has been provided in Boiler stack and SB Machine. Server Connectivity is in progress.</p> <p>Fume extraction system including scrubber, fume extraction ductwork and fan has been installed in pickling line. Ventilation system has also been installed.</p> <p>Water sprinkling and mechanized sweeping machine frequency has been increase to control duct emission.</p> <p>Please refer Annexure-I for monitoring data report from Oct 2018 to Mar 2019.</p>
iv	Industrial Wastewater shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19 <sup>th</sup> May, 1993 and 31 <sup>st</sup> December, 1993 or as amended form time to time. The treated wastewater shall be utilized for plantation purpose.	Effluent treatment plants have been installed for the generated oily and acidic waste water. The treated water is used for plantation/dust suppression and other low end uses.
v	The overall noise levels in and around the plant area shall be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (daytime) and 70 dBA (night-time).	<p>High noise generating equipment has been provided with acoustic enclosures and silencer. Noise level is being monitored regularly near Pickling Line Exit, Near Mills Stand, Near Mills Stand Outside, Near Compressor Room, near Boiler House, near ARP Pump Room, Near Main office etc.</p> <p>Monitoring report attached (Oct 2018 to Mar 2019)</p>

Compliance Status of Environmental Clearance of Cold Rolling Mill Complex (CRMC) Capacity Expansion (0.3 MTPA to 0.8 MTPA) (Ph-II) Jamshedpur, District East Singhbhum, Jharkhand vide MoEF&CC Letter no F.NO J-11011/22/2013-IA (II) I Dated on 15<sup>th</sup> Sept 2015

vi	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	It has been stated that during the period Apr 2018 to Mar 2019, occupational health surveillance has been conducted for 188 Workers of the plant and 383 contract workers as per factory act and records are maintained. Necessary counselling has been also given by the Doctors to the concerned patients.
vii	The company shall develop rain water harvesting structures to harvest the rain water for utilization in the lean season besides recharging the ground water table.	Rain water harvesting structures have been made. Two numbers of collecting pits of total capacity 25 KL made and connected with down comers of plant shed. 59 m <sup>3</sup> Water has been used for toilet flushing and greenery development.
viii	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP report. Further, the company must undertake socio-economic development activities in the surrounding villages like community development programmes, educational programmes, drinking water supply and health care etc.	It has been stated that environment protection measures proposed in the EIA/EMP report will be made according to the EIA/EMP report. Community development programs in surrounding areas are being implemented by TSRDS/ Urban Services of Tata Steel. Major activities include education, health & sanitation, drinking water supply, sports and cultural promotion is being carried out. Health care program for Bagunhatu and Babudih, Gwala Basti conducted. Drinking Water facility has been provided at Bagunhatu.
ix	Requisite funds shall be earmarked towards capital cost and recurring cost/ annum for environment pollution control measures to implement the conditions stipulated by the MoEF&CC as well as the State Government. An implementation schedule for implementing all the conditions stipulated herein shall be submitted to the Regional Office of the Ministry at Ranchi. The funds so provided shall not be diverted for any other purpose.	It has been stated that an amount of Rs 21.51 Crores has been Spent on environmental and pollution control measures that including utilities, Fume Extraction scrubber, Acid Regeneration Plant and Effluent Treatment Plant etc.  This year (from Oct 2018 to Mar 2019) around 1.32 Crore has been spent on environment protection.
x	A copy of clearance letter shall be sent by the proponent to concerned Panchnyat, Zila Parishad /Municipal Corporation, Urban Local Body and the local NGO, if any, from whom suggestions / representations, if any, were received while processing the proposal. The clearance letter shall also be put on the web site of the company the proponent.	Complied.  Letter has been sent to all concerned as mentioned on dated 16 <sup>th</sup> Sept 2015.

Compliance Status of Environmental Clearance of Cold Rolling Mill Complex (CRMC) Capacity Expansion (0.3 MTPA to 0.8 MTPA) (Ph-II) Jamshedpur, District East Singhbhum, Jharkhand vide MoEF&CC Letter no F.NO J-11011/22/2013-IA (II) I Dated on 15<sup>th</sup> Sept 2015

xi	<p>The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the MoEF&amp;CC at Ranchi. The respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub> (ambient levels as well as stack emission) or critical sectoral parameters, indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.</p>	<p>Compliance Report of EC will be uploaded in our company website.</p> <p>Compliance report will be submitted in Zonal office CPCB Kolkata and SPCB Ranchi with monitoring result of prescribed parameters PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub> (ambient levels as well as stack emission) or critical sectoral parameters, indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.</p>
xii	<p>The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-main) to the Regional Office of MoEF&amp;CC, the respective Zonal Office of CPCB and the SPCB. The Regional Office of the Ministry at Ranchi / CPCB shall monitor the stipulated conditions.</p>	<p>Six monthly compliance reports with monitored data are being sent regularly to the Regional Office of MoEF&amp;CC, the respective zonal office of CPCB and SPCB.</p>
xiii	<p>The environmental statement for each financial year ending 31<sup>st</sup> March in Form-V as 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 put on the website of the company along with the status of compliance of environmental conditions and shall also be sent to the respective Regional office of the MoEF&amp;CC at Ranchi by e-mail.</p>	<p>The environment statement is being submitted every year to the JSPCB, and regional office of the MoEF&amp;CC at Ranchi.</p>



Compliance Status of Environmental Clearance of Cold Rolling Mill Complex (CRMC) Capacity Expansion (0.3 MTPA to 0.8 MTPA) (Ph-II) Jamshedpur, District East Singhbhum, Jharkhand vide MoEF&CC Letter no F.NO J-11011/22/2013-IA (II) I Dated on 15<sup>th</sup> Sept 2015

xiv	The Project Proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB and may also be seen at Website of the MoEF&CC at <a href="http://envor.nic.in">http://envor.nic.in</a> . This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the Regional Office at Ranchi.	Environment clearance information/ notice had been published in two local newspapers on dated 20 <sup>th</sup> Sept 2015 in English paper and Hind Paper <i>viz</i> The Telegraph and Prabhat Khabar.  A copy was also sent to the Regional Office at Ranchi vide our letter no. EMD/C38/136/15 dated September 16th, 2007.
xv	Project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	We will submit the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.
xvi	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	The above stated conditions have been noted & will be complied.
xvii	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.	The above stated conditions have been noted & will be complied. The progress report of above conditions will be submitted on regular basis.
xviii	The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008 and the Public (Insurance) Liability Act, 1991 along with their amendments and rules.	The stated stipulated conditions will be implemented.

# **MONITORING & ANALYSIS REPORT**

October 2018 to March 2019

**CRM Bara, Tata Steel Limited, Jamshedpur**

**ENVIRONMENTAL MANAGEMENT DEPARTMENT  
TATA STEEL LIMITED  
JAMSHEDPUR**

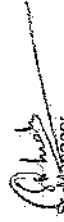
**TATA STEEL LIMITED**  
**ENVIRONMENTAL MONITORING REPORT OF CRM COMPLEX AT BARA, JAMSHEDPUR**  
**AMBIENT AIR QUALITY MONITORING REPORT FOR OCT 2018**

Dept	date	Location	Particulate Matter (PM <sub>10</sub> ) µg/m <sup>3</sup>	Particulate Matter (PM <sub>2.5</sub> ) µg/m <sup>3</sup>	Sulphur Dioxide (SO <sub>2</sub> ) µg/m <sup>3</sup>	Nitrogen Dioxide (NO <sub>2</sub> ) µg/m <sup>3</sup>	Carbon Monoxide (CO) mg/m <sup>3</sup>	Ammonia (NH <sub>3</sub> ) µg/m <sup>3</sup>	Ozone (O <sub>3</sub> ) µg/m <sup>3</sup>	Nickel (Ni) µg/m <sup>3</sup>	Arsenic (As) ng/m <sup>3</sup>	Lead (Pb) ng/m <sup>3</sup>	Benzene (C <sub>6</sub> H <sub>6</sub> ) µg/m <sup>3</sup>	Benzo alpha Pyrene (BaP) ng/m <sup>3</sup>
NAAQMS - 18 NOVEMBER 2009														
CRM BARA	25.10.2018	CRM BARA - NEAR MILL DISPATCH SHUTTER	100.94	51.76	11.13	16.90	0.46	32	22	0.32	0.04	0.33	<0.1	<0.1
	24.10.2018	CRM BARA - NEAR FIGHTING PUMP HOUSE	102.93	54.89	13.67	19.50	0.46	21	28	0.38	0.03	0.47	<0.1	<0.1
	25.10.2018	CRM BARA - NEAR PICKLING DISPATCH	105.88	53.35	16.27	21.77	0.54	23	23	0.36	0.04	0.43	<0.1	<0.1
	24.10.2018	CRM BARA NEAR ROLL SHUTTER	98.86	52.14	11.20	16.63	0.34	30	27	0.18	0.02	0.32	<0.1	<0.1

NOTE

Standards applicable as per National Ambient Air Quality Standards vide Notification No.: B-29016/20/90/PCL-I dated 18th November 2009.

\* The above locations were monitored by NABL/MoEF Certified Lab and hence the results given are same as mentioned in their respective reports.

  
 Sr-Manager  
 Environment Management

# TATA STEEL LIMITED

ENVIRONMENTAL MONITORING REPORT OF CRM COMPLEX AT BARA , JAMSHEDPUR

## STACK EMISSION MONITORING REPORT FOR OCT 2018

Date of Monitoring

22-10-2018

Location	Parameter	UoM	Result
Boiler	PM	mg/Nm <sup>3</sup>	3.2
	SOx	mg/Nm <sup>3</sup>	29.0
	NOx	mg/Nm <sup>3</sup>	45.0

### NOTE

Standards applicable as per Environment (Protection) (Third Amendment) Rules, 2012 issued in Gazette of India Notification vide No.: G. S. R. 277 (E) dated March 31, 2012.

\* NT = Not Tracable, NA = Not Available

  
Sr. Manager  
Environment Management

# TATA STEEL LIMITED

## ENVIRONMENTAL MONITORING REPORT OF CRM COMPLEX AT BARA , JAMSHEDPUR

### FUGITIVE EMISSION MONITORING REPORT FOR OCT 2018

**Date of Monitoring**

22.10.2018

Location	Parameter	UoM	Result
Near Roph Pump House	PM10	mg/m <sup>3</sup>	0.35
Near Pickling Line Exit			0.38
Near Mills Stand			0.56
Near Mill Stand outside			0.89
Coil Receiveng Area			0.38



Sr. Manager  
Environment Management

**TATA STEEL LIMITED**  
**ENVIRONMENT MANAGEMENT DEPARTMENT**  
**CRM BARA TREATED EFFLUENT QUALITY REPORT FOR OCTOBER 2018**

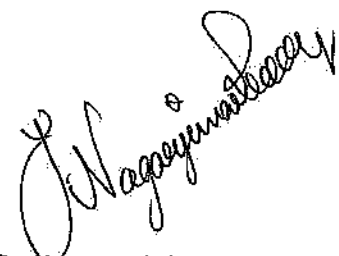
**Date of Sampling: 18-10-2018**

Location	Parameter	Unit	Method	Result
Drain at Gate No-1	pH	-	APHA 4500-H <sup>+</sup> B	7.86
	Total Suspended solids	mg/L	APHA 2540 D	10.5
	Oil & Grease	mg/L	APHA 5520 B	<1.0
	Hexavalent Chromium, Cr+6	mg/L	APHA 3500 B	< 0.05
	Biological Oxygen Demand, BOD	mg/L	APHA 5210 B, 4500 C	12
	Chemical Oxygen Demand, COD	mg/L	APHA 5220 D	32
Drain at Gate No-2	pH	-	APHA 4500-H <sup>+</sup> B	7.45
	Total Suspended solids	mg/L	APHA 2540 D	10.6
	Oil & Grease	mg/L		<1.0
	Hexavalent Chromium, Cr+6	mg/L	APHA 3500 B	< 0.05
	Biological Oxygen Demand, BOD	mg/L	APHA 5210 B, 4500 C	20
	Chemical Oxygen Demand, COD	mg/L	APHA 5220 D	52

**NOTE**

UoM - Unit of Measurement

APHA - American Public Health Association.

  
 Sr. Manager- Lab  
 Environment Management

# TATA STEEL LIMITED

## ENVIRONMENTAL MONITORING REPORT OF CRM COMPLEX AT BARA , JAMSHEDPUR

### AMBIENT NOISE MONITORING REPORT FOR OCT 2018

**Date of Monitoring** 23.10.2018

Location	UoM	Result
Entrance Main Gate	Day	72.6
	Night	56.4
Circle Near Main Gate	Day	65.9
	Night	50.5
Circle Near Gate No-1	Day	66.1
	Night	53.4
Gate No-1	Day	65.2
	Night	57.6
Gate No-2	Day	70.2
	Night	54.3

#### **NOTE**

Standards applicable as per Noise Pollution (Regulation and Control) (Amendment) Rules, 2000 notified vide S. O. 1046 (E), dated 22-11-2000

  
Sr. Manager  
Environment Management

# TATA STEEL LIMITED

## ENVIRONMENTAL MONITORING REPORT OF CRM COMPLEX AT BARA , JAMSHEDPUR

### INSTRUMENT NOISE MONITORING REPORT FOR OCT 2018

Date of Monitoring

22.10.2018

Sr. No	Location	UoM	Result
1	NEAR RCPH PUMP HOUSE	dB(A)	87.8
2	NEAR PICKLING LINE EXIT		80.0
3	NEAR MILLS STAND		89.5
4	NEAR MILLS STAND OUTSIDE		80.3
5	2 MTR. AWAY FROM COMPRESSOR # 1		99.6
6	2 MTR. AWAY FROM COMPRESSOR # 2		94.6
7	INSIDE COMPRESSOR ROOM		96.6
8	INSIDE BOILER HOUSE		91.4
9	RINCE TANK AREA		86.8
10	MAIN OFFICE		59.1
11	NEAR GATE #1		76.8
12	NEAR GATE #2		62.7
13	COIL RECEIVING AREA		85.6

  
Sr. Manager

Environment Management



**TATA STEEL LIMITED**  
**ENVIRONMENTAL MONITORING REPORT OF CRM COMPLEX AT BARA, JAMSHEDPUR**  
**AMBIENT AIR QUALITY MONITORING REPORT FOR NOV 2018**

Dept	date	Location	Particulate Matter (PM <sub>10</sub> ) µg/m <sup>3</sup>	Particulate Matter (PM <sub>2.5</sub> ) µg/m <sup>3</sup>	Sulphur Dioxide (SO <sub>2</sub> ) µg/m <sup>3</sup>	Nitrogen Dioxide (NO <sub>2</sub> ) µg/m <sup>3</sup>	Carbon Monoxide (CO) mg/m <sup>3</sup>	Ammonia (NH <sub>3</sub> ) µg/m <sup>3</sup>	Ozone (O <sub>3</sub> ) µg/m <sup>3</sup>	Nickel (Ni) µg/m <sup>3</sup>	Arsenic (As) ng/m <sup>3</sup>	Lead (Pb) ng/m <sup>3</sup>	Benzene (C <sub>6</sub> H <sub>6</sub> ) µg/m <sup>3</sup>	Benzo alpha Pyrene (BaP) ng/m <sup>3</sup>
<b>NAAQMS - 18 NOVEMBER 2009</b>														
CRM BARA	09.11.2018	CRM BARA - NEAR MILL DISPATCH SHUTTER	116	54	10	14	0.56	52	26	0.32	0.03	0.27	<0.1	<0.1
	08.11.2018	CRM BARA - NEAR FIGHTING PUMP HOUSE	128	58	11	16	0.47	46	32	0.42	0.02	0.28	<0.1	<0.1
	09.11.2018	CRM BARA - NEAR PICKLING DISPATCH	122	58	13	17	0.49	57	28	0.41	0.02	0.40	<0.1	<0.1
	08.11.2018	CRM BARA NEAR ROLL SHUTTER	112	55	13	16	0.58	52	33	0.34	0.04	0.28	<0.1	<0.1

**NOTE**

Standards applicable as per National Ambient Air Quality Standards vide Notification No.: B-29016/20/90/PCI-L dated 18th November 2009.

\* The above locations were monitored by NABL/MoEF Certified Lab and hence the results given are same as mentioned in their respective reports.

  
**Sr. Manager**  
 Environment Management

**TATA STEEL LIMITED**  
**ENVIRONMENTAL MONITORING REPORT OF CRM COMPLEX AT BARA , JAMSHEDPUR**  
**STACK EMISSION MONITORING REPORT FOR NOV 2018**

**Date of Monitoring**

19-11-2018

Location	Parameter	UoM	Result
Mills	PM	mg/Nm <sup>3</sup>	5.1
	SOx	mg/Nm <sup>3</sup>	-
	NOx	mg/Nm <sup>3</sup>	-
Boiler	PM	mg/Nm <sup>3</sup>	4.6
	SOx	mg/Nm <sup>3</sup>	24.0
	NOx	mg/Nm <sup>3</sup>	38.0

**NOTE**

Standards applicable as per Environment (Protection) (Third Amendment) Rules, 2012 issued in Gazette of India Notification vide No.: G. S. R. 277 (E) dated March 31, 2012.

\* NT = Not Tracable, NA = Not Available



Sr. Manager  
Environment Management

**TATA STEEL LIMITED**  
**ENVIRONMENT MANAGEMENT DEPARTMENT**  
**CRM BARA TREATED EFFLUENT QUALITY REPORT FOR NOVEMBER 2018**

**Date of Sampling: 14-11-2018**

Location	Parameter	Unit	Method	Result
Drain at Gate No-1	pH	-	APHA 4500-H <sup>+</sup> B	8.42
	Total Suspended solids	mg/L	APHA 2540 D	10.0
	Oil & Grease	mg/L	APHA 5520 B	<1.0
	Hexavalent Chromium, Cr+6	mg/L	APHA 3500 B	< 0.05
	Biological Oxygen Demand, BOD	mg/L	APHA 5210 B, 4500 C	3.8
	Chemical Oxygen Demand, COD	mg/L	APHA 5220 D	8
Drain at Gate No-2	pH	-	APHA 4500-H <sup>+</sup> B	7.49
	Total Suspended solids	mg/L	APHA 2540 D	10.2
	Oil & Grease	mg/L		<1.0
	Hexavalent Chromium, Cr+6	mg/L	APHA 3500 B	< 0.05
	Biological Oxygen Demand, BOD	mg/L	APHA 5210 B, 4500 C	12
	Chemical Oxygen Demand, COD	mg/L	APHA 5220 D	32

**NOTE**

UoM - Unit of Measurement

APHA - American Public Health Association

  
 Sr. Manager- Lab  
 Environment Management

# TATA STEEL LIMITED

## ENVIRONMENTAL MONITORING REPORT OF CRM COMPLEX AT BARA , JAMSHEDPUR FUGITIVE EMISSION MONITORING REPORT FOR NOV 2018

**Date of Monitoring**

19.11.2018

Location	Parameter	UoM	Result
Near Mill Stand	PM10	mg/m <sup>3</sup>	0.9
Near Pickling Line Exit			0.8
Coil Receiveng Area			0.8
Rince Tank Area			1.3



Sr. Manager

Environment Management

**TATA STEEL LIMITED**  
**ENVIRONMENTAL MONITORING REPORT OF CRM COMPLEX AT BARA , JAMSHEDPUR**  
**AMBIENT NOISE MONITORING REPORT FOR NOV 2018**

**Date of Monitoring**      09.11.2018

Location	UoM		Result
Entrance Main Gate	dB(A)	Day	70
		Night	53
Circle Near Main Gate		Day	62
		Night	51
Circle Near Gate No-1		Day	69
		Night	53
Gate No-1		Day	62
		Night	56
Gate No-2		Day	71
		Night	57

**NOTE**

Standards applicable as per Noise Pollution (Regulation and Control) (Amendment) Rules, 2000 notified vide S. O. 1046 (E), dated 22-11-2000

  
 Sr. Manager  
 Environment Management

# TATA STEEL LIMITED

## ENVIRONMENTAL MONITORING REPORT OF CRM COMPLEX AT BARA , JAMSHEDPUR

### INSTRUMENT NOISE MONITORING REPORT FOR NOV 2018

Date of Monitoring

19.11.2018

Location	UoM	Result
NEAR RCPH PUMP HOUSE	dB(A)	87.3
NEAR PICKLING LINE EXIT		80.6
NEAR MILLS STAND		92.3
NEAR MILLS STAND OUTSIDE		79.8
2 MTR. AWAY FROM COMPRESSOR # 1		92.1
2 MTR. AWAY FROM COMPRESSOR # 2		93.6
2 MTR. AWAY FROM COMPRESSOR # 3		95.1
2 MTR. AWAY FROM COMPRESSOR # 4		91.0
INSIDE COMPRESSOR ROOM		91.8
INSIDE BOILER HOUSE		88.6
ARP PUMP ROOM		79.8
STICHER AREA		91.4
RINCE TANK AREA		88.7
MAIN OFFICE		61.3
NEAR GATE #1		73.6
NEAR GATE #2		65.1
COIL RECEIVING AREA		88.1
Roll Shop Shoot Blasting Machine (Initial)		79.5
Roll Shop Shoot Blasting Machine (During Blasting)		76.7
Operator Room		92.6



Sr. Manager

Environment Management

**TATA STEEL LIMITED**  
**ENVIRONMENTAL MONITORING REPORT OF CRM COMPLEX AT BARA, JAMSHEDPUR**  
**AMBIENT AIR QUALITY MONITORING REPORT FOR DEC 2018**

Dept	date	Location	Particulate Matter (PM <sub>10</sub> ) µg/m <sup>3</sup>	Particulate Matter (PM <sub>2.5</sub> ) µg/m <sup>3</sup>	Sulphur Dioxide (SO <sub>2</sub> ) µg/m <sup>3</sup>	Nitrogen Dioxide (NO <sub>2</sub> ) µg/m <sup>3</sup>	Carbon Monoxide (CO) mg/m <sup>3</sup>	Ammonia (NH <sub>3</sub> ) µg/m <sup>3</sup>	Ozone (O <sub>3</sub> ) µg/m <sup>3</sup>	Nickel (Ni) µg/m <sup>3</sup>	Arsenic (As) ng/m <sup>3</sup>	Lead (Pb) ng/m <sup>3</sup>	Benzene (C <sub>6</sub> H <sub>6</sub> ) µg/m <sup>3</sup>	Benzo alpha Pyrene (BaP) ng/m <sup>3</sup>
	09.12.2018	CRM BARA-NEAR MILL DISPATCH SHUTTER	116	54	10	14	0.6	52	26	0.32	0.03	0.27	<0.1	<0.1
	06.12.2018	CRM BARA -FIRE FIGHTING STATION	94	51	17	21	0.7	44	28	0.27	0.02	0.33	<0.1	<0.1
CRM BARA	07.12.2018	CRM BARA - NEAR PICKLING DISPATCH	105	45	11	16	0.5	38	21	0.30	0.02	0.55	<0.1	<0.1
	06.12.2018	CRM BRA NEAR ROLL SHUTTER	94	45	15	22	0.6	32	23	0.27	0.02	0.36	<0.1	<0.1

**NOTE**

Standards applicable as per National Ambient Air Quality Standards vide Notification No.: B-29016/20/90/PCI-L dated 18th November 2009.

\* The above locations were monitored by NABL/MoEF Certified Lab and hence the results given are same as mentioned in their respective reports.

  
 Sr. Manager  
 Environment Management

**TATA STEEL LIMITED**  
**ENVIRONMENTAL MONITORING REPORT OF CRM COMPLEX AT BARA , JAMSHEDPUR**  
**STACK EMISSION MONITORING REPORT FOR DEC 2018**

Location	Date of Monitoring	Parameter	UoM	Result
Boiler	6-Dec-18	PM	mg/Nm <sup>3</sup>	3.0
		SOx	mg/Nm <sup>3</sup>	-
		NOx	mg/Nm <sup>3</sup>	-
MILLS	6-Dec-18	PM	mg/Nm <sup>3</sup>	10.3
		SOx	mg/Nm <sup>3</sup>	-
		NOx	mg/Nm <sup>3</sup>	-
ARP	10-Dec-18	PM	mg/Nm <sup>3</sup>	94.8
		SOx	mg/Nm <sup>3</sup>	-
		NOx	mg/Nm <sup>3</sup>	-

**NOTE**

Standards applicable as per Environment (Protection) (Third Amendment) Rules, 2012 issued in Gazette of India Notification vide No.: G. S. R. 277 (E) dated March 31, 2012.

\* NT = Not Tracable, NA = Not Available, ND= Not Done

  
 Sr. Manager  
 Environment Management



**TATA STEEL LIMITED**  
**ENVIRONMENT MANAGEMENT DEPARTMENT**  
**CRM BARA TREATED EFFLUENT QUALITY REPORT FOR DECEMBER 2018**

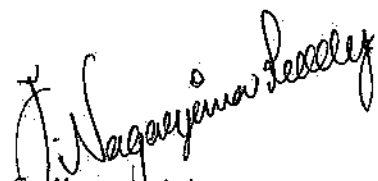
**Date of Sampling: 14-12-2018**

Location	Parameter	Unit	Method	Result
Drain at Gate No-1	pH	-	APHA 4500-H <sup>+</sup> B	7.78
	Total Suspended solids	mg/L	APHA 2540 D	10.60
	Oil & Grease	mg/L	APHA 5520 B	<1.0
	Hexavalent Chromium, Cr+6	mg/L	APHA 3500 B	< 0.05
	Biological Oxygen Demand, BOD	mg/L	APHA 5210 B, 4500 C	4
	Chemical Oxygen Demand, COD	mg/L	APHA 5220 D	10
Drain at Gate No-2	pH	-	APHA 4500-H <sup>+</sup> B	7.62
	Total Suspended solids	mg/L	APHA 2540 D	10.20
	Oil & Grease	mg/L		<1.0
	Hexavalent Chromium, Cr+6	mg/L	APHA 3500 B	< 0.05
	Biological Oxygen Demand, BOD	mg/L	APHA 5210 B, 4500 C	15
	Chemical Oxygen Demand, COD	mg/L	APHA 5220 D	38

**NOTE:**

UoM - Unit of Measurement

APHA - American Public Health Association

  
 Sr. Manager - Lab  
 Environment Management

**TATA STEEL LIMITED**

**ENVIRONMENTAL MONITORING REPORT OF CRM COMPLEX AT BARA , JAMSHEDPUR**

**FUGITIVE EMISSION MONITORING REPORT FOR DEC 2018**

**Date of Monitoring**

06.12.2018

<b>Location</b>	<b>Parameter</b>	<b>UoM</b>	<b>Result</b>
Near Mill Stand			0.60
Near Pickling Line Exit	PM	mg/m <sup>3</sup>	0.60
Arp Pump Room			0.50



Sr. Manager  
Environment Management

**TATA STEEL LIMITED**  
**ENVIRONMENTAL MONITORING REPORT OF CRM COMPLEX AT BARA , JAMSHEDPUR**  
**AMBIENT NOISE MONITORING REPORT FOR DEC 2018**

**Date of Monitoring**                      17.12.2018

Location	UoM	Result
Entrance Main Gate	Day	73
	Night	55
Circle Near Main Gate	Day	67
	Night	51
Circle Near Gate No-1	Day	63
	Night	50
Gate No-1	Day	60
	Night	59
Gate No-2	Day	73
	Night	49

**NOTE**

Standards applicable as per Noise Pollution (Regulation and Control) (Amendment) Rules, 2000 notified vide S.O. 1046 (E), dated 22-11-2000

  
Sr. Manager  
Environment Management

**TATA STEEL LIMITED**  
**ENVIRONMENTAL MONITORING REPORT OF CRM COMPLEX AT BARA, JAMSHEDPUR**  
**AMBIENT AIR QUALITY MONITORING REPORT FOR JAN 2019**

Dept	date	Location	Particulate Matter (PM <sub>10</sub> ) µg/m <sup>3</sup>	Particulate Matter (PM <sub>2.5</sub> ) µg/m <sup>3</sup>	Sulphur Dioxide (SO <sub>2</sub> ) µg/m <sup>3</sup>	Nitrogen Dioxide (NO <sub>2</sub> ) µg/m <sup>3</sup>	Carbon Monoxide (CO) mg/m <sup>3</sup>	Ammonia (NH <sub>3</sub> ) µg/m <sup>3</sup>	Ozone (O <sub>3</sub> ) µg/m <sup>3</sup>	Nickel (Ni) µg/m <sup>3</sup>	Arsenic (As) ng/m <sup>3</sup>	Lead (Pb) ng/m <sup>3</sup>	Benzene (C <sub>6</sub> H <sub>6</sub> ) µg/m <sup>3</sup>	Benzo alpha Pyrene (BaP) ng/m <sup>3</sup>
CRM BARA	03.01.2019	CRM BARA NEAR DISPATCH SHUTTER	97	52	11	14	0.6	52	22	0.24	0.02	0.45	<0.1	<0.1
	16.01.2019	CRM BARA - FIRE FIGHTING STATION	98	57	11	15	0.5	34	22	0.28	0.01	0.36	<0.1	<0.1
	16.01.2019	CRM BARA - NEAR PICKLING DISPATCH	102	55	10	14	0.5	26	26	0.34	0.02	0.27	<0.1	<0.1
	18.01.2019	CRM BARA NEAR ROLL SHUTTER	98	58	13	16	0.5	34	24	0.34	0.02	0.34	<0.1	<0.1

**NOTE**

Standards applicable as per National Ambient Air Quality Standards vide Notification No.: B-29016/20/90/PCI-L dated 18th November 2009.

\* The above locations were monitored by NABL/MoEF Certified Lab and hence the results given are same as mentioned in their respective reports.

*Sudhakar Kumar*  
 Sr. Manager  
 Environment Management

*Anup Sinha*  
 Sr. Manager  
 Environment Management

# TATA STEEL LIMITED

## ENVIRONMENTAL MONITORING REPORT OF CRM COMPLEX AT BARA, JAMSHEDPUR

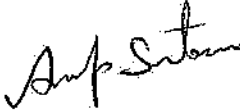
STACK EMISSION MONITORING REPORT FOR JAN 2019				
Location	Date of Monitoring	Parameter	UoM	Result
Boiler	22-Jan-19	PM	mg/Nm <sup>3</sup>	3.6
		SOx	mg/Nm <sup>3</sup>	ND
		NOx	mg/Nm <sup>3</sup>	ND
ARP	22-Jan-19	PM	mg/Nm <sup>3</sup>	123.1
		SOx	mg/Nm <sup>3</sup>	ND
		NOx	mg/Nm <sup>3</sup>	ND

### NOTE

Standards applicable as per Environment (Protection) (Third Amendment) Rules, 2012 issued in Gazette of India Notification vide No.: G. S. R. 277 (E) dated March 31, 2012.

\* NT = Not Tracable, NA = Not Available, ND= Not Done

  
Manager  
Environment Management

  
Sr. Manager  
Environment Management

**TATA STEEL LIMITED**  
**ENVIRONMENT MANAGEMENT DEPARTMENT**  
**CRM BARA TREATED EFFLUENT QUALITY REPORT FOR JANUARY 2019**

**Date of Sampling: 03-01-2019**

Location	Parameter	Unit	Method	Result
Drain at Gate No-1	pH	-	APHA 4500-H <sup>+</sup> B	7.98
	Total Suspended solids	mg/L	APHA 2540 D	10.5
	Oil & Grease	mg/L	APHA 5520 B	<1.0
	Hexavalent Chromium, Cr+6	mg/L	APHA 3500 B	< 0.05
	Biological Oxygen Demand, BOD	mg/L	IS 3025 Part (44): 1993, Reaf 2014	8.6
	Chemical Oxygen Demand, COD	mg/L	APHA 5220 D	24
Drain at Gate No-2	pH	-	APHA 4500-H <sup>+</sup> B	8.28
	Total Suspended solids	mg/L	APHA 2540 D	10.4
	Oil & Grease	mg/L	APHA 5520 B	<1.0
	Hexavalent Chromium, Cr+6	mg/L	APHA 3500 B	< 0.05
	Biological Oxygen Demand, BOD	mg/L	IS 3025 Part (44): 1993, Reaf 2014	<2.0
	Chemical Oxygen Demand, COD	mg/L	APHA 5220 D	4

**NOTE**

UoM - Unit of Measurement

APHA - American Public Health Association

*J. Nagayama*  
 Sr. Manager- Monitoring & Analysis  
 Environment Management

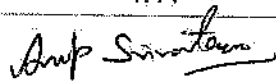
**TATA STEEL LIMITED**  
**ENVIRONMENTAL MONITORING REPORT OF CRM COMPLEX AT BARA ,**  
**JAMSHEDPUR**  
**FUGITIVE EMISSION MONITORING REPORT FOR JAN 2019**

**Date of Monitoring**

1/22/2019

Location	UoM	Result
Near Rcph Pump House	mg/m <sup>3</sup>	1.18
Near Pickling Line Exit		1.30
Near Mills Stand		1.70
Near Mill Stand outside		1.28
1 Mtr. Away From Compressor # 1		1.15
1 Mtr. Away From Compressor # 2		1.18
1 Mtr. Away From Compressor # 3		1.20
1 Mtr. Away From Compressor # 4		1.23
Inside Room Compressor		1.25
Inside Boiler House		1.16
Arp Pump Room		1.58
Sticher Area		1.51
Rince Tank Area		1.96
Main Office		1.18
Near Gate # 1		1.35
Near Gate # 2		1.20
Coil Receiveng Area		1.11

  
 Manager  
 Environment Management

  
 Sr. Manager  
 Environment Management

**TATA STEEL LIMITED**  
**ENVIRONMENTAL MONITORING REPORT OF CRM COMPLEX AT BARA , JAMSHEDPUR**  
**AMBIENT NOISE MONITORING REPORT FOR JAN 2019**

**Date of Monitoring**      **22.01.2019**

Location	UoM	Result
Entrance Main Gate	Day	70.1
	Night	53.5
Circle Near Main Gate	Day	68.6
	Night	53.4
Circle Near Gate No-1	Day	65.1
	Night	50.3
Gate No-1	Day	63.2
	Night	54.7
Gate No-2	Day	69.1
	Night	51.5

**NOTE**

Standards applicable as per Noise Pollution (Regulation and Control) (Amendment) Rules, 2000 notified vide S. O. 1046 (E), dated 22-11-2000

  
 Manager  
 Environment Management

  
 Sr. Manager  
 Environment Management



# TATA STEEL LIMITED

## ENVIRONMENTAL MONITORING REPORT OF CRM COMPLEX AT BARA , JAMSHEDPUR

### INSTRUMENT NOISE MONITORING REPORT FOR JAN 2019

**Date of Monitoring**                      22.1.2019

Location	UoM	Result
NEAR RCPH PUMP HOUSE	dB(A)	86.3
NEAR PICKLING LINE EXIT		77.3
NEAR MILLS STAND		72.0
NEAR MILLS STAND OUTSIDE		68.2
2 MTR. AWAY FROM COMPRESSOR # 1		N/O
2 MTR. AWAY FROM COMPRESSOR # 2		N/O
2 MTR. AWAY FROM COMPRESSOR # 3		77.8
2 MTR. AWAY FROM COMPRESSOR # 4		80.4
INSIDE COMPRESSOR ROOM		79.4
INSIDE BOILER HOUSE		85.5
ARP PUMP ROOM		76.3
STICHER AREA		91.4
RINCE TANK AREA		88.2
MAIN OFFICE		56.4
NEAR GATE #1		66.3
NEAR GATE #2		59.1
COIL RECEIVING AREA		87.8
DG Set Door Closed condition		72.5
DG Set Door Open condition		66.8
Roll Shop Shoot Blasting Machine (Initial)		N/O
Roll Shop Shoot Blasting Machine (During Blasting)		N/O
Firefighting Pump # 1 Diesel Engine		104.3
Firefighting Pump # 2 Diesel Engine		105.1
Operator Room	88.3	

  
 Manager  
 Environment Management

  
 Sr. Manager  
 Environment Management

**TATA STEEL LIMITED**  
**ENVIRONMENTAL MONITORING REPORT OF CRM COMPLEX AT BARA, JAMSHEDPUR**  
**AMBIENT AIR QUALITY MONITORING REPORT FOR MAR 2019**

Dept	Date	Location	Particulate Matter (PM <sub>10</sub> ) µg/m <sup>3</sup>	Particulate Matter (PM <sub>2.5</sub> ) µg/m <sup>3</sup>	Sulphur Dioxide (SO <sub>2</sub> ) µg/m <sup>3</sup>	Nitrogen Dioxide (NO <sub>x</sub> ) µg/m <sup>3</sup>	Carbon Monoxide (CO) mg/m <sup>3</sup>	Ammonia (NH <sub>3</sub> ) µg/m <sup>3</sup>	Ozone (O <sub>3</sub> ) µg/m <sup>3</sup>	Nickel (Ni) µg/m <sup>3</sup>	Arsenic (As) µg/m <sup>3</sup>	Lead (Pb) µg/m <sup>3</sup>	Benzene (C <sub>6</sub> H <sub>6</sub> ) µg/m <sup>3</sup>	Benzo alpha Pyrene (BaP) ng/m <sup>3</sup>
			Standard											
	05.03.2019	CRM BARA NEAR DISPATCH SHUTTER	100	60	80	80	2	400	180	1	6	20	5	1
			141	58	11	15	0.5	61	21	0.24	0.02	0.31	<0.1	<0.1
CRM BARA	04.03.2019	CRM BARA - FIRE FIGHTING STATION	136	62	11	15	0.6	67	23	0.21	0.01	0.28	<0.1	<0.1
	06.03.2019	CRM BARA - NEAR PICKLING DISPATCH	129	61	12	16	0.5	55	31	0.26	0.02	0.27	<0.1	<0.1
	23.03.2019	CRM BARA NEAR ROLL SHUTTER	120	61	14	18	0.5	36	27	0.35	0.03	0.36	<0.1	<0.1

**NOTE**

Standards applicable as per National Ambient Air Quality Standards vide Notification No.: B-25016/20/90/PCI-L dated 18th November 2009.

\* The above locations were monitored by NABL/MoEF Certified Lab and hence the results given are same as mentioned in their respective reports.



Sr. Manager  
Monitoring and Analysis

**TATA STEEL LIMITED**  
**ENVIRONMENTAL MONITORING REPORT OF CRM COMPLEX AT BARA , JAMSHEDPUR**  
**STACK EMISSION MONITORING REPORT FOR MAR 2019**

Sl. No	Location	Date of Monitoring	Parameter	UoM	Standard	Result
1	Boiler	21-Feb-19	PM	mg/Nm <sup>3</sup>	150 mg/Nm <sup>3</sup>	2.1
			SOx	mg/Nm <sup>3</sup>		ND
			NOx	mg/Nm <sup>3</sup>		ND
2	ARP	26-Mar-19	PM	mg/Nm <sup>3</sup>	150mg/Nm <sup>3</sup>	84.7
			SOx	mg/Nm <sup>3</sup>		ND
			NOx	mg/Nm <sup>3</sup>		ND

**NOTE**

Standards applicable as per Environment (Protection) (Third Amendment) Rules, 2012 issued in Gazette of India Notification vide No.: G. S. R. 277 (E) dated March 31, 2012.

\* NT = Not Tracable, NA = Not Available, ND= Not Done

  
 Sr. Manager  
 Monitoring and Analysis

  
 Sr. Manager  
 Environment (Statutory & Legal)

This test report is generated by NABL Accredited TATA STEEL LIMITED JSR EMD LAB having accreditation No.TC-8363 dated 21-02-2019 having validity till 20-02-2021

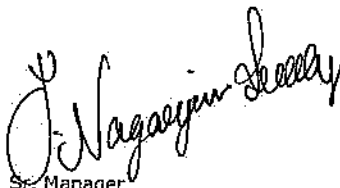
**TATA STEEL LIMITED**  
**ENVIRONMENT MANAGEMENT DEPARTMENT**  
**CRM BARA EFFLUENT QUALITY REPORT FOR MARCH 2019**

Date of Sampling: 13-03-2019

Location	Parameter	Method	Unit	Statutory Limit	Result
Drain at Gate No-1	pH	APHA 4500-H <sup>+</sup> B	-	6.0-8.5	7.90
	Total Suspended solids	APHA 2540 D	mg/L	100	11.2
	Oil & Grease	APHA 5520 B	mg/L	10	< 1.0
	Hexavalent Chromium, Cr+6	APHA 3500 B	mg/L	0	< 0.05
	Biological Oxygen Demand, BOD	IS 3025 Part (44): 1993, Reaf 2014	mg/L	30	11
	Chemical Oxygen Demand, COD	APHA 5220 D	mg/L	250	28
Drain at Gate No-2	pH	APHA 4500-H <sup>+</sup> B	-	6.0-8.5	7.95
	Total Suspended solids	APHA 2540 D	mg/L	100	15.0
	Oil & Grease	APHA 5520 B	mg/L	10	< 1.0
	Hexavalent Chromium, Cr+6	APHA 3500 B	mg/L	0	< 0.05
	Biological Oxygen Demand, BOD	IS 3025 Part (44): 1993, Reaf 2014	mg/L	30	28
	Chemical Oxygen Demand, COD	APHA 5220 D	mg/L	250	80

**NOTE**

UoM - Unit of Measurement  
 APHA - American Public Health Association

  
 Sr. Manager  
 Monitoring and Analysis

  
 Sr. Manager  
 Environment (Statutory & Legal)

This test report is generated by NABL Accredited TATA STEEL LIMITED JSR EMD LAB having accreditation No.TC-8363 dated 21-02-2019 having validity till 20-02-2021

**TATA STEEL LIMITED**  
**ENVIRONMENTAL MONITORING REPORT OF CRM COMPLEX AT BARA , JAMSHEDPUR**  
**AMBIENT NOISE MONITORING REPORT FOR MAR 2019**

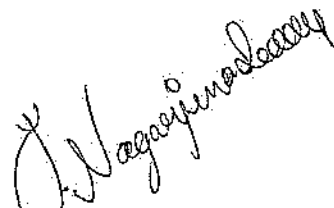
**Date of Monitoring**

28.03.2019

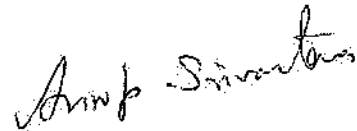
Sl.No.	Sampling Location		Day	dB(A) Leq	
	Location	Standard		50	40
1	Entrance Main Gate		62.91	50.43	
2	Circle Near Main Gate		59.58	49.35	
3	Circle Near Gate No-1		59.3	47.93	
4	Gate No-1		60.94	50.97	
5	Gate No-2		67.47	57.24	

**NOTE**

Standards applicable as per Noise Pollution (Regulation and Control) (Amendment) Rules, 2000 notified vide S. O. 1046 (E), dated 22-11-2000



Sr. Manager  
Monitoring and Analysis



Sr. Manager  
Environment (Statutory & Legal)

This test report is generated by NABL Accredited TATA STEEL LIMITED JSR EMD LAB having accreditation No.TC-8363 dated 21-02-2019 having validity till 20-02-2021