

SAIL BOKARO STEEL PLANT
ENVIRONMENT CONTROL DEPARTMENT

Compliance to the conditions laid down vide EC No.J-11011/99/2007-IA-II(I) dated 16th Oct'2008, issued to SAIL/ Bokaro Steel Plant for its 4MT Crude steel to 7MT Crude Steel expansion for the period from October'2019 to March'2020.

A. COMPLIANCE TO SPECIFIC CONDITIONS

i. On-line stack monitoring facilities for all the stacks and sufficient air pollution control devices shall be provided to keep the emission levels below 100 mg/Nm³. In cement Plant, limit of PM emission shall be controlled within 50 mg/Nm³ by installing adequate air pollution control system.

Status:

There are twenty eight Process stacks at SAIL/Bokaro Steel Plant On-line Continuous Stack emission monitoring System has been installed in twenty three Stacks. On-line Continuous Stack emission monitoring System in remaining five stacks will be installed along with the completion of Projects linked with them. The real time data of twenty one out of twenty three stacks have been uplinked to CPCB & JSPCB server. The remaining two stacks data will be uplinked after lock down period due to Covid-19 pandemic. Necessary emission control facilities have been installed in all stacks to maintain the emission level below stipulated standards. The emission level in all the stacks are within stipulated standards. SAIL/BSL does not own any cement plant.

ii. All the standards prescribed for the coke oven Plants shall be followed as per the latest guidelines. Proper and full utilization of coke oven gases in power plant using waste heat recovery steam generators should be ensured and no flue gases shall be discharged into the air.

Status:

- PLD, PLL and PLO in all batteries are maintained well below stipulated norms. The monitoring report has been attached.
- Emissions in all Coke oven stacks remain well below 50 mg/Nm³ of stipulated norm.
- Coke Oven gas is being utilized fully and judiciously as fuel in BSL.
- Excess gas is being utilized in Power Plant.
- All load based parameters prescribed as per March'2012 Notification for Coke ovens are also within stipulated standards.

iii. Gaseous emission levels including secondary fugitive emissions from blast furnace and sinter plant shall be controlled within the latest permissible limits issued by the Ministry and regularly monitored. Guidelines / code of practice issued by the CPCB should be followed.

Status:

Gaseous emission level including secondary fugitive emissions in Blast Furnace & Sinter Plant are within latest permissible limit. The fugitive emission level in different areas of the Plant, including BF & SP is being monitored regularly by ECD Lab and third party monitoring by MECON, reports are being submitted to CPCB on monthly basis.

iv. Efforts shall be made to reduce impact of the transport of the raw materials and end products on the surrounding environment including agricultural land. All the raw materials including fly ash shall be transported in the closed containers only and shall not be overloaded. Vehicular emissions shall be regularly monitored.

Status:

All the raw materials and Products are transported in railway wagons. Water sprinklers have been installed in the tippler area and Raw material stock yard to control fugitive emission during operation. The granulated BF slag is transported through conveyer belt & trucks after properly covering it with tarpaulin/ plastic sheets. Water sprinkling is done on the roads inside the plant on regular basis to prevent Air Pollution. The vehicular emission is regularly monitored inside the plant.

- v. ***Prior “Permission” for the drawal of the additional water required (3600 m³/hr) and shall be sourced from Tenughat for which BSL has permission. The entire quantity of water will be treated and recycled.***

Status:

SAIL/ Bokaro Steel Plant have been granted permission from Ministry of Water Resources of Jharkhand government for drawl of 23000m³/hr. that also include the additional water required (3600 m³/hr.).The effluent treatment plant at OF-1 has been commissioned. Discharge from OF-1is being treated and recycled back in to the Industrial make up .The construction work of ETP at OF-2 has been completed. Around 3000 m³/hr. effluent is being treated and recycled back in the system out of total 3500 m³/hr. generated. Total ZLD system will be maintained in CRM-3 from June’2020.

- vi. ***The company shall re-assess the additional water required and submit a detailed plan to minimize water consumption. “Zero” effluent discharge shall be strictly followed and no wastewater shall be discharged outside the premises.***

Status: The effluent treatment plant at OF-1 has been commissioned. Discharge from OF-1is being treated and recycled back in to the Industrial make up .The construction work of ETP at OF-2 has been completed. Around 3000 m³/hr. effluent is being treated and recycled back in the system out of total 3500 m³/hr. generated. Total ZLD system will be maintained in CRM-3 from June’2020. Discharge from Coke oven & By-product plant is treated at ETP and recycled & reused in Coke quenching. All the new projects will be commissioned with Zero Liquid discharge facility.

- vii. ***Continuous monitoring of Total Organic Compounds (TOC) shall be done at the outlet of ETP (BOD Plant).***

Status:

Continuous TOC monitoring system has been installed in ETP (BOD Plant) outlet.

- viii. ***All the blast furnace (BF) slag shall be granulated and used to cement manufacture. Flue dust from pellet plant sinter plant and SMS and sludge from BF shall be reused in sinter Plant. Coke breeze from coke oven plant shall be used in sinter and pellet plant. SMS slag shall be given for metal recovery or properly utilized. All the other solid waste including broken refractory mass shall be properly disposed off in environment-friendly manner.***

Status:

Total BF granulated slag is being used in Cement manufacturing. Total Flue dust, Mill Scale, Lime dust & Coke breeze are being utilized in Sinter Plant for sinter making. SMS slag is being processed for metal recovery in Slag processing plant being operated round the clock, the metal and slag are recycled back into the process through SP ,BF and SMS. Broken refractory mass is sold in secondary market through our Marketing department.

ix. *A time bound action plan shall be submitted to reduce solid waste, its proper utilization and disposal.*

Status:

Time bound action plan to reduce solid waste, its proper utilization and disposal has been Given below:

Action Taken to Reduce Solid Waste Generation

Sl. No.	Action Taken	Objective	Ultimate Impact
1.	Increase of Imported coal in coal blend, charged in Coke oven Batteries for Coke Production	To Reduce ash content in Coke Produced	Reduction of BF Slag generation
2.	Hydraulic Washing of Iron ore	To increase the concentration of Iron ore	Reduction of BF Slag generation
3.	Use of Jaisalmer Lime Stone	To Reduce the ash content in lime stone charged for sinter making	Reduction of BF Slag generation

Time bound action plan for eco-friendly disposal of LD slag & BF Slag

Area	Scheme / Project	Timeframe	Responsibility	Status as on date
LD slag in Sintering process.	To enhance the utilisation of 0-5mm fraction of LD slag in Sinter base mix @32Kg/Tonne of Gross Sinter. Expected utilisation will go up by 58701 Tons Per annum w.r.t. last year.	By December'19	CGM Sinter Plant, CGM RMHP &CGM Traffic	Presently 22 Kg/T of Gross sinter is being used in Sinter base mix
LD slag in Area development work	To enhance the LD slag consumption for area development work @ 12000/month	By January'20	GM/ECD Dy. Manager/ECD	Presently 9000T/Month is being consumed in area development.
Sale of Processed LD slag in secondary market	To increase the sale of LD slag in secondary market @ 60000T/Year	By March'20	GM/ECD &GM I/C Marketing	During 2018-19 20000T of LD Slag was sold in secondary market
	To increase the sale of LD slag in secondary market to 100000T/Year	2020-21	GM/ECD &GM I/C Marketing	During 2018-19 20000T of LD Slag was sold in secondary market
	To increase the sale of LD slag in secondary market @ 130000T/Year	2021-22	GM/ECD &GM I/C Marketing	During 2018-19 20000T of LD Slag was sold in secondary market
Granulation of BF Slag	To increase the granulation of BF slag to 85% after commissioning of CHSGP-4 of BF#2	2019-20	GM/ Blast furnace & GM Projects Iron Zone	During 2018-19 the BF slag granulation was 75%
	To increase the granulation of BF slag to 100% after commissioning of CHSGP-1& 2 of BF#1	2020-21	CGM/Blast furnace & CGM Projects Iron Zone	During 2018-19 the BF slag granulation was 75%
Secondary sale of Air Cooled BF Slag	1 Lakh Tonne	2019-20	GM I/C MRD & GM I/C Marketing	During 2018-19, 25000 T was sold. During 2019-20, around 85000 utilized for road making.
	2 Lakh Tonne	2020-21	GM I/C MRD & GM I/C Marketing	-
	3 Lakh Tonne	2021-22	GM I/C MRD & GM I/C Marketing	-

- x. *Efforts shall be made to use low grade lime, more fly ash and solid waste in the cement manufacturing.*

Status: Low grade lime and other solid wastes such as Flue dust, Mill Scale etc. are being used in Sinter Plant as M/s SAIL/Bokaro Steel Plant does not own any cement plant

- xi. *Proper utilization of fly ash shall be ensured as per Fly ash Notification, 1999 and subsequent amendment in 2003.*

Status:

Not applicable. (The condition is for power plant) ,

BSL is not generating power and hence no fly ash is being generated by M/s SAIL/BSL , a separate entity. Power is generated by a separate company M/s BPSCL (JV of SAIL and DVC) which is operating with its own consent to operate, issued by Jharkhand State Pollution control Board, and separate EC ,issued by MoEF&CC .However in compliance to decision taken by EAC in its meeting held at 23.8.2019 a joint action plan has been prepared and got approved by SAIL and BPSCL board . Copy of the approved Joined action plan for eco-friendly disposal of old fly ash dump has been submitted to MoEF&CC, New Delhi.

- xii. *As proposed, green belt should be developed in 33% area.*

Status:

Existing Percentage Green cover:-

- A. **Total area acquired by SAIL/ BSL for Plant purpose=6973.68**
Hectare (Including area earmarked for modernization purpose)
B. **Area earmarked for modernization=1199.99Ha**
C. **Total existing plant area=5773.69 Hectare**
D. **Existing Green cover =1923.99 Hectare**
E. **Existing percentage green cover=1923.99/5773.69x100=33.32%**

Percentage green cover after Modernization:-

- A. Total area of the plant=6973.68 Hectare
B. Total Green cover=1923.99 Ha (existing) +475Ha (Plantation made in Garga basin)=2398.99 Ha
C. % Green Cover=2398.99/6973.68x100=34.40%

NB: The area 500Ha earmarked for SMS-III project is fully covered with dense vegetation & shrubs.

- xiii. *All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Steel plants should be implemented.*

Status:

- a. Fugitive emission (PLD, PLL & PLO) from Coke Oven Batteries are within norm.
- b. Our all the batteries are either rebuilt or cold repaired, ahead of CREP schedule .Batt#7 has been recently commissioned after rebuilding. The rebuilding of Batt#8 is in progress. Battery#6 has been taken under shut down for rebuilding.
- c. Fugitive emission in Steel melting shops of BSL is within norm.
- d. LD slag utilization in the stipulated period was more than 94.57%
- e. BF slag utilization is around 100 %.
- f. CDI facility is available all Blast furnaces.
- g. Average specific water consumption for the period Oct'2019 to March'2020 was 3.42 m³/tcs which is well below CREP norm.
- h. Phenol & ammonia content in BOD Plant effluent is below stipulated norm.
- i. All pollution control equipment is being monitored closely and quarterly compliance reports are being sent to JSPCB & CPCB as per CREP guidelines. Third party monitoring is also being done by M/s MECON (MoEFCC recognized laboratory).

xiv. The commitments made during public hearing shall be complied with. An action plan in this respect shall be submitted to the Ministry's Regional Office at Bhubaneswar.

Status:

All commitments made during public hearing are being complied with

- Two number of Continuous Ambient Air Quality Monitoring Station has been installed & commissioned. Its data have been uplinked to CPCB & JSPCB server.
- Seven ambient air quality monitoring stations have been installed. All twelve Parameters as per the Notification are being monitored. The frequency of monitoring is bi-weekly.
- Stack emission level in all shops is below stipulated norm.
- Noise level at different locations of all shops remains within norm.
- All the roads are regularly maintained including Plant to Tupakadih.
- Vehicular pollution monitoring of vehicles is done by authorized agency on regular basis as per requirement.
- In SP, ESP# 6 has been commissioned. The refurbishing of ESP#2 is in progress.
- Around 74500 new saplings have been planted during 2019-20.
- Around 4860 saplings have been planted in. Sijna. Uritabatu and Bansgora villages through CSR
- Many Civic amenities such as Community centers have been developed in all sectors. Toilets have been constructed in Sector IV city centre, Sector I , Sector IX and Sector XII market places.
- Around 1870 saplings have been planted in the BSL Schools & other public schools in Bokaro steel city, during last three years
- SAIL/ BSL has allotted separate land for construction of 'Kamdheni khatal'in sector VI area of BS. City. This khatal was constructed during 2009. Many khatalas have been shifted there from sector area.
- Treated drinking water is being supplied by BSL in all sectors, Chas & Railway colony. Hand pumps have been installed in the neighbouring villages of the Bokaro Steel plant.
- BSL Township has Lagoon based STP of total capacity of 31.972 MLD. 3rd party monitoring of the discharge quality is also being regularly done through MoEF&CC accredited laboratory of M/s MECON. The treatment facility is working effectively and the discharge quality is well within the applicable standards, as stipulated by the MoEF&CC.

xv. As proposed, Rs. 749.5 crores and Rs. 112.5 crores earmarked towards capital cost and recurring cost/annum for environment pollution control measures shall be judiciously utilized to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government. The funds so provided shall not be diverted for any other purpose.

Status:

All the Capital funds allocated are being utilized on pollution control measures only. The annual allocation of recurring cost is being utilized on Pollution control measures only. The details of recurring expenditure & Capital expenditure during last three financial years are given below.

Year	Recurring Expenditure (Crores)	Capital Expenditure (Crores)
2017-18	106.3363	196.631
2018-19	116.4375	61.645
2019-20	114.5321	42.628

- xvi. *Provision shall be made for the housing of construction labour within the site with all the necessary infrastructure and facilities such as fuel for cooking, mobile, toilets, mobile STP, Safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.*

Status:

The construction work at the project sites are carried out during the day time only. Construction workers do not stay inside the plant during night. Most of the construction workers are local/ displaced and belong to peripheral villages/localities and return to their residing places after performing their duties. Some of the construction workers, who are outsiders, have been given housing facility in camp-1 & camp-2 area of Bokaro Steel City. Permanent rest room, Drinking water facility, health care facility and toilets are available inside the plant. A crèche has been constructed for the children of female construction workers inside the plant.

B. COMPLIANCE OF GENERAL CONDITIONS.

- i. *The project authorities must strictly adhere to the stipulations made by the Jharkhand State Pollution Control Board (JSPCB) and the State Government.*

Status:

Stipulations made by Jharkhand State Pollution Control Board are being complied and Progress report is regularly being sent to JSPCB. Compliance to the CTO conditions, Hazardous waste return, e-Waste Return, Biomedical Waste Return, Quarterly compliance report of PC equipment and Environment Statement are submitted to JSPCB, Ranchi as per the schedule.

- ii. *No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.*

Status:

No expansion or modification will be carried out without ministry's 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 Jharkhand Pollution Control Board (JPCB)) 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.*

Status:

Gaseous emissions from various process units are conforming to the norm stipulated by Ministry, CPCB and JSPCB. All the parameters are monitored as per March'2012 Notification. All load/mass based standards such as CO in Kg/TDCP, Pushing Emission & Quenching emission in g/TDCP are being monitored on regular basis and report submitted to CPCB on regular basis. All the load/mass based data are within stipulated standards.

- iv. *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, SO₂ and NO_x are anticipated in consultation with the JPCB. Data on ambient air quality and stack emission shall be regularly submitted to this Ministry including its Regional Office at Bhubaneswar and the JPCB / CPCB once in six months.*

Status:

Seven Ambient Air Quality Monitoring Stations have been set up at different locations surrounding the Plant, which monitors PM₁₀, PM_{2.5}, SO₂, NO₂, O₃, NH₃, B(a)P, CO, Pb, As & Ni on bi-weekly basis. The data of Ambient Air Quality and stack emission are being regularly submitted to CPCB and JSPCB. Monitoring report of stipulated period has been enclosed. Two no. of Continuous Ambient Air Quality Monitoring Station have also been installed & uplinked to CPCB & JSPCB server.

- v. *In-plant control measures for checking fugitive emissions from all the vulnerable sources shall be provided. Further, specific measures like water sprinkling around the coal stockpiles and asphaltting or concreting of the roads shall be done to control fugitive emissions.*

Status:

Fugitive emissions from Coke Oven Batteries are being monitored on regular basis. PLD, PLL and PLO level in all Coke Oven Batteries are well within stipulated norm. The charging emission of all Coke oven batteries is also measured. The monitoring reports are being regularly sent to CPCB every month. Water is regularly sprinkled to suppress fugitive emission at different dusty areas including coal stock piles. One truck mounted water sprinkling system, dedicated to Coke oven area has been procured and being operated on regular basis. ESP based de-dusting system has been installed in cast house of BF#2. Permanent Water Sprinklers have been installed in Wagon Tippler area and Raw Material Handling Plant. All the roads inside the plant are asphalted.

- vi. *Industrial wastewater 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. The treated wastewater shall be utilized for plantation purpose.*

Status:

Industrial waste water from Coke Oven, By Product Plant and CRM-III is collected and treated in ETP. All the pollutant level after treatment is well within stipulated norm. This water is being used for quenching of coke and in other processes. The effluents from all other plants are being treated and recycled. ZLD will be maintained in CRM-III by June'2020.

- vii. *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 shall conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA(day time) and 70 dBA (night time).*

Status:

Noise levels in various areas are being monitored on regular basis. Noise level in all areas is below stipulated norm. The provision of snort valve in BF & acoustic enclosures in Oxygen plant are there to control the noise at source. Noise level is monitored regularly and reported to CPCB every month. Day and night time ambient noise level is also monitored at different locations. The same is also reported to CPCB on monthly basis.

- viii. *Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.*

Status:

Health status of all the workers including contract labourer is regularly monitored by a dedicated Occupational Health Service Centre, situated inside the Plant. The health status record is regularly maintained by them. Total health checkup during 2018-19 was 9363 and

during 2019-20 till Oct'2019 it was 5211. A copy of health checkup record has been attached , as a sample, as annexure-7.

- ix. ***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.***

Status:

SAIL/BSL has 12 Square Km area of water bodies with earthen base, due to which large amount water percolates to the ground, thus recharging the ground water table on continuous basis. The water table in neighbouring villages is very rich. A pond has also been constructed near Kundauri Basti with earthen base to retain rain water and to replenish the ground water table. Under Jal Shakti Avian, 9 (Nine) Water Bodies have been rejuvenated in Township Areas with total 1,530.0 Acres to recharge Ground Water through these earthen base water bodies. Roof Top Rain Water Harvesting Systems have been planned in 4 nos. of Township Buildings as well as four buildings inside the plant. All these are in tendering stage. A Roof Top Rain Water harvesting has been installed in Fire sub-station building opposite to Paryavaran Bhawan. The water storage pit has earthen base, hence this works as recharge Pit also. This water is also used in fire tenders.

- x. ***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. Suggestions made during the public hearing shall be implemented.***

Status:

All the Environmental protection measures and safe guards recommended in EIA/EMP report are being complied.

- Bokaro Steel has adopted seven villages in periphery of plant under CSR.
- All connecting roads have been constructed by BSL.
- School buildings have been constructed in each village.
- Health camps are arranged in each villages adopted by BSL, However there is Sarva Swasthya Kendra for free treatment of Non-entitled people and under privileged mass of society.
- Drinking water facility such as hand pumps has been installed.
- Community center building has been built by BSL. Sarva Swasthya kendra to take care the free medical facilities for under privileged class.
- Provision of kalayan vidyalaya with mid- day meals for poor children from in and around the town ship.
- Under Swachhh Bharat Abhiyan, Toilets have been constructed in these villages.
- Solar Street lighting systems are also being installed in the villages.
 - The Battery Cyclone#6 has already been replaced by ESP#6 to meet futurist emission norms. The Battery Cyclone#2 has been dismantled for installation of ESP#2. It was expected to be completed by April, 2020. It has been delayed owing to lock down imposed for Covid-19 pandemic. However, the Battery Cyclone#1,3,4&5 are working effectively, after systematic phase wise repair of battery cyclones, including changing of elements and casings and the PM emission through the stacks is meeting the emission standards.
 - The installation of facilities for use of converter gas has been completed. The operation of this facility is directly linked to human safety. HAZOP study was carried out by third party in order to figure out safety and protection measures for the facility. The recommendations of HAZOP study is in the process of compliance.

Subsequent to lifting of lock down due to Covid-19 pandemic the compliance job will be expedited and the facility will be in operation very soon.

- xi. The Regional Office of the Ministry at Bhubaneswar CPCB/JSPCB shall monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation shall be submitted to them regularly.*

Status:

Six monthly compliance reports are being sent to RO, MoEF&CC as per EIA/EMP Notification 2006, on regular basis.

- xii. 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 JPCB and may also be seen at Website of the Ministry of Environment and Forests at <http://envfor.nic.in>. 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 at Bhubaneswar.*

Status:

Project Department had informed the public by giving advertisement in two local daily newspapers, Prabhat Khabar & Hindustan on 20th Nov'2008 after getting the Environment Clearance from MoEF& CC.

- Xiii. 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.*

Status:

Regional office of Jharkhand State Pollution Control Board is being updated as and when required about the financial closure and final approval. The date of financial closure and Final approval of the projects under amended EC has been given below.

The Status of Financial closure & Final Approval of the Projects

Sl.No.	Name of the Projects	Date of Financial closure	Date of final approval of the Projects
1.	CRM-3 (New CRM)	07.12.2006	29.01.2008
2.	Revamping of Sinter M/C-1	07.12.2006	07.11.2011
3.	Sinter Plant-2	29.03.2011	11.04.2015
4.	Modernization of SMS-1	07.06.2013	30.05.2015
5.	Modernization of BF-2	03.08.2006	12.11.2007

ENCLOSURES:

Name of the Steel Plant: BOKARO STEEL PLANT
Production Capacity: 4.606 MT

STACK EMISSION

OCT'2019

Name of the Plant	Stack connected to (Name of the unit)	Height of the stack (m)	Diameter of the stack (m)	Pollution Control unit provided (Name)	Date & Time of the monitoring (duration)	Production fig. of the unit, during the period of monitoring	Flow rate of the flue gas (NM ³ /Hr)	Parameters (whichever are applicable)				
								1	2	3	4	5
Blast Furnace (Space dedusting) & Stoves								Particulate matter (PM) (mg/Nm ³)	SO₂ (mg/Nm ³)	NO_x (mg/Nm ³)	HC	CO Kg/TDCP Vol./vol.
BF-1	Chimney-1	50 mtr.	8.2mtrs.	Wet scrubber	Under Capital Repair							
BF-2	Chimney-2	50 mtr.	8.2mtrs.	Wet scrubber	08.10.19		280790	80.15	-	-	-	-
BF-3	Chimney-2	50 mtr.	8.2mtrs.	Wet scrubber					-	-	-	-
BF-4	Chimney-3	50 mtr.	8.2mtrs.	Wet scrubber	02.10.19		278712	76.82	-	-	-	-
BF-5	Chimney-3	50 mtr.	8.2mtrs.	Wet scrubber					-	-	-	-
BF Stoves-2	Chimney-2	70 mtr.	3.5mtrs.	-	16.10.19		110714	24.96	80.22	68.86	-	0.59%
BF Stoves-3	Chimney-3	70 mtr.	3.5mtrs.	-	29.10.19		113506	23.72	96.12	70.15	-	0.58%
Standards : Charging side chimney- PM - 100 (Units: mg/Nm³) BF Stoves – PM- 50 mg/Nm³, SO₂- 250 mg/Nm³, NO_x- 150 mg/Nm³ CO- 1% v/v (Max) • BF#1 is connected to chimney no-1 , BF#2&BF#3 are connected to chimney no-2 and BF#4&BF#5 are connected to chimney no-3 Each BF stove is connected to corresponding chimney No.												
Refractory Material plant												
Kiln-1	Stack – 1	80 mtr.	3.3mtrs	ESP	Under Shutdown							
Kiln-2	Stack – 1	80 mtr.	3.3mtrs	ESP	22.10.19	11.14 T/hr	149272	146.38	84.6			
Kiln-3	Stack - 2	80 mtr	3.3mtrs	ESP	09.10.19	10.71 T/hr	146325	55.1	75.1			
Kiln-4	Stack – 2	80 mtr.	3.3mtrs	ESP	Under Shutdown for refurbishing							
Kiln-5	Stack – 3	80 mtr.	3.3 mtrs	ESP	12.10.19	9.14 T/hr	149972	123.58	75.7			
Kiln-6	Stack – 3	80 mtr.	3.3 mtrs	ESP	18.10.19	10.74 T/hr	146305	42.14	88.9	-	-	-

Standards: PM - 150 , SO₂ - , NO_x - , CO - (Units: mg/Nm³)
 Monitoring values for corresponding Kiln duct. Two Kilns through individual Ducts are connected to a common stack.

SMS – 1 (Process unit)					Date		Flow rate (NM ³ /Hr)	PM (mg/Nm ³)	SO ₂ (mg/Nm ³)	NO _x (mg/Nm ³)	HC	CO	
Conv. – 1(NB)	Stack – 1	100 m	4.3mtrs	Wet scrubber	Under Capital Repair							-	-
Conv. – 2(NB)	Stack – 1	100 m	4.3mtrs	Wet scrubber	Under Shutdown								
Conv. – 2 (BL)	Stack – 1	100 m	4.3mtrs	Wet scrubber									
Conv. – 3(NB)	Stack – 1	100 m	4.3mtrs	Wet scrubber	24.10.19	-	107351	20.94	-	-	-	-	
Conv. – 3(BL)	Stack – 1	100m	4.3mtrs	Wet scrubber	24.10.19	-	253709	256.85	107.82	70.52	-	-	
Conv. – 4(NL)	Stack – 1	100 m	4.3mtrs	Wet scrubber	Under Shutdown								-
SMS-2/CCS	LF- 2	80m	1.25m	Bag filter	28.10.19	-	114754	23.64	-	-	-	-	

Standard : PM - 300, SO₂ - , NO_x - , CO - * Monitored in individual ducts(of dia 2.5 m each) from corresponding converters. SMS-2/CCS Stack -PM #50mg/Nm³
(Units: mg/Nm³) All ducts are connected to a common stack

Coke Oven													
Batt. # 1	Stack – 1	100 m.	3.5mtrs	-	04.10.19	-	149625	24.95	206.15	105.06	-	1.62	
Batt. # 2	Stack – 2	100 m.	3.5mtrs	-	21.10.19	-	146321	29.74	256.95	96.80	-	1.72	
Batt # 3	Stack - 3	100 m	3.5 mtrs	-	30.10.19	-	147724	31.92	214.76	81.95	-	1.88	
Batt. # 4	Stack – 4	100 m.	3.5 mtrs	-	15.10.19	-	148351	30.90	296.06	112.98	-	1.96	
Batt. # 5	Stack – 5	100 m.	3.5mtrs	-	07.10.19	-	159627	41.69	236.92	92.86	-	2.56	
Batt # 6	Stack - 6	100 m.	3.5 mts	Shut down for Rebuilding									
Batt. # 7	Stack – 7	100 m.	3.5mtrs	-	05.10.19	-	142372	23.68	282.16	78.54	-	1.48	
Batt. # 8	Stack – 8	100 m.	3.5mtrs	Under Rebuilding									

Standard: PM - 50, SO₂ - 800, NO_x - 500, CO – 3.00 Kg/TDCP, HC - (Units: mg/Nm³)

Sinter Plant												
SM-1	Duct-A	100 m.*	3.5mtrs	Batt. cyclone	14.10.19	-	394722	137.32	92.86	58.14	-	-
	Duct-B		3.5mtrs	Batt. cyclone	14.10.19	-	395724	146.94	-	-	-	-
SM-2	Duct-A		3.5mtrs	Batt. cyclone	03.10.19	-	397514	145.72	101.82	60.70	-	-
	Duct-B		3.5mtrs	Batt. cyclone	03.10.19	-	399735	147.07	-	-	-	-
SM-3	Duct-A		3.5mtrs	Batt. cyclone	26.10.19	-	380706	146.78	95.06	72.76	-	-
	Duct-B	100 m.*	3.5mtrs	Batt. cyclone	26.10.19	-	330667	66.94	-	-	-	-

Standard: PM - 150 , SO₂ - , NO_x - (Units: mg/Nm³) * All three Sinter M/c Exhaust are connected to a common single stack of 100m height

NOV'2019

Name of the Plant	Stack connected to (Name of the unit)	Height of the stack (m)	Diameter of the stack (m)	Pollution Control unit provided (Name)	Date & Time of the monitoring (duration)	Production fig. of the unit, during the period of monitoring	Flow rate of the flue gas (NM ³ /Hr)	Parameters (whichever are applicable)					
								Particulate matter (PM) (mg/Nm ³)	SO ₂ (mg/Nm ³)	NO _x (mg/Nm ³)	HC	CO (Kg/TDCP Vol./vol.)	
1	2	3	4	5	6	7	8	9					
Blast Furnace (Space De-dusting) & Stoves													
BF-1	Chimney-1	50 mtr.	8.2mtrs.	Wet scrubber	Under Capital Repair								
BF-2	Chimney-2	50 mtr.	8.2mtrs.	Wet scrubber	04.11.19	6506 T	282701	80.92	-	-	-	-	
BF-3	Chimney-2	50 mtr.	8.2mtrs.	Wet scrubber									
BF-4	Chimney-3	50 mtr.	8.2mtrs.	Wet scrubber									
BF-5	Chimney-3	50 mtr.	8.2mtrs.	Wet scrubber	12.11.19	3410 T	279624	78.81	-	-	-	-	
BF Stoves-2	Chimney-2	70 mtr.	3.5mtrs.	-	26.11.19	4226 T	109232	20.08	86.92	57.81	-	0.58%	
BF Stoves-5	Chimney-5	70 mtr.	3.5mtrs.	-	19.11.19	3500 T	106775	18.84	101.72	69.25	-	0.59%	
Standards : Charging side chimney- PM - 100 (Units: mg/Nm³) BF Stoves – PM- 50 mg/Nm³, SO₂- 250 mg/Nm³, NO_x- 150 mg/Nm³ CO- 1% v/v (Max)													
<ul style="list-style-type: none"> BF#1 is connected to chimney no-1 , BF#2&BF#3 are connected to chimney no-2 and BF#4&BF#5 are connected to chimney no-3 Each BF stove is connected to corresponding chimney No. 													
Refractory Material plant													
Kiln-1	Stack – 1	80 mtr.	3.3mtrs	ESP	18.11.19	11.19	140378	64.80	84.78				
Kiln-2	Stack – 1	80 mtr.	3.3mtrs	ESP	Under Shutdown								
Kiln-3	Stack - 2	80 mtr	3.3mtrs	ESP	25.11.19	11.25	149535	45.25	96.05				
Kiln-4	Stack – 2	80 mtr.	3.3mtrs	ESP	Under Shutdown								
Kiln-5	Stack – 3	80 mtr.	3.3 mtrs	ESP	06.11.19	11.25	152708	136.48	80.96				
Kiln-6	Stack – 3	80 mtr.	3.3 mtrs	ESP	02.11.19	11.08	145772	40.36	66.92	-	-	-	

Standards: PM - 150, SO₂ - , NO_x - , CO - (Units: mg/Nm³)

Monitoring values for corresponding Kiln duct. Two Kilns through individual Ducts are connected to a common stack.

SMS – 1 (Process unit)					Date		Flow rate (NM ³ /Hr)	PM (mg/Nm ³)	SO ₂ (mg/Nm ³)	NO _x (mg/Nm ³)	HC	CO	
Conv. – 1(NB)	Stack – 1	100 m	4.3mtrs	Wet scrubber	Under Capital Repair							-	-
Conv. – 2(NB)	Stack – 1	100 m	4.3mtrs	Wet scrubber	Under Shutdown								
Conv. – 2 (BL)	Stack – 1	100 m	4.3mtrs	Wet scrubber									
Conv. – 3(NB)	Stack – 1	100 m	4.3mtrs	Wet scrubber	11.11.19	-	108754	25.70	-	-	-	-	
Conv. – 3(BL)	Stack – 1	100m	4.3mtrs	Wet scrubber	11.11.19	-	260080	256.14	90.52	65.15	-	-	
Conv. – 4(NL)	Stack – 1	100 m	4.3mtrs	Wet scrubber	Under Shutdown								-
Conv. – 5 (NB)	Stack – 1	100 m	4.3mtrs	Wet scrubber	Under Modernization							-	-
Conv. – 5(BL)	Stack – 1	100m	4.3mtrs	Wet scrubber									
SMS-2/CCS	LF- 1	80m	1.25m	Bag filter	28.11.19	-	105672	20.25	-	-	-	-	

Standard : PM - 300, SO₂ - , NO_x - , CO - * Monitored in individual ducts(of dia 2.5 m each) from corresponding converters. SMS-2/CCS Stack -PM #50mg/Nm³
(Units: mg/Nm³) All ducts are connected to a common stack

Coke Oven														
Batt. # 1	Stack – 1	100 m.	3.5mtrs	-	23.11.19	-	146700	28.57	249.17	88.20	-	1.48		
Batt. # 2	Stack – 2	100 m.	3.5mtrs	-	01.11.19	-	144322	27.33	256.86	94.67	-	1.62		
Batt # 3	Stack - 3	100 m	3.5 mtrs	-	20.11.19	-	142556	36.11	210.95	80.46	-	1.70		
Batt. # 4	Stack – 4	100 m.	3.5 mtrs	-	08.11.19	-	149782	29.96	241.06	99.95	-	1.44		
Batt. # 5	Stack – 5	100 m.	3.5mtrs	-	29.11.19	-	150606	45.91	236.10	105.16	-	1.88		
Batt # 6	Stack - 6	100 m.	3.5 mts	Shutdown for Rebuilding										
Batt. # 7	Stack – 7	100 m.	3.5mtrs	-	15.11.19	-	145360	21.66	242.94	78.36	-	1.56		
Batt. # 8	Stack – 8	100 m.	3.5mtrs	Under Rebuilding										

Standard: PM - 50, SO₂ - 800, NO_x - 500, CO – 3.00 Kg/TDCP, HC - (Units: mg/Nm³)

Sinter Plant												
SM-1	Duct-A	100 m.*	3.5mtrs	Batt. cyclone	05.11.19	-	396712	141.70	80.72	60.81	-	-
	Duct-B		3.5mtrs	Batt. cyclone		-	Under Shutdown					-
SM-2	Duct-A		3.5mtrs	Batt. cyclone	09.11.19	-	394351	130.64			-	-
	Duct-B		3.5mtrs	Batt. cyclone	09.11.19	-	198706	142.12	-	-	-	-
SM-3	Duct-A		3.5mtrs	Batt. cyclone	13.11.19	-	405542	146.52	102.94	66.52	-	-
	Duct-B	100 m.*	3.5mtrs	Batt. cyclone	13.11.19	-	310664	65.14	-	-	-	-

Standard: PM - 150 , SO₂ - , NO_x - (Units: mg/Nm³) * All three Sinter M/c Exhaust are connected to a common single stack of 100m height

DEC'2019

Name of the Plant	Stack connected to (Name of the unit)	Height of the stack (m)	Diameter of the stack (m)	Pollution Control unit provided (Name)	Date & Time of the monitoring (duration)	Production fig. of the unit, during the period of monitoring	Flow rate of the flue gas (NM ³ /Hr)	Parameters (whichever are applicable)				
								1	2	3	4	5
Blast Furnace (Space dedusting) & Stoves								Particulate matter (PM)	SO₂	NO_x	HC	CO
								(mg/Nm ³)	(mg/Nm ³)	(mg/Nm ³)		Kg/TDCP Vol./vol.
BF-1	Chimney-1	50 mtr.	8.2mtrs.	Wet scrubber	Under Capital Repair							
BF-2	Chimney-2	50 mtr.	8.2mtrs.	Wet scrubber	19.12.19	4180 T	280102	76.76		-	-	-
BF-3	Chimney-2	50 mtr.	8.2mtrs.	Wet scrubber								
BF-4	Chimney-3	50 mtr.	8.2mtrs.	Wet scrubber	06.12.19	7077 T	282760	79.95				
BF-5	Chimney-3	50 mtr.	8.2mtrs.	Wet scrubber						-	-	-
BF Stoves-2	Chimney-2	70 mtr.	3.5mtrs.	-	12.12.19	4201 T	108323	21.14	90.16	59.05	-	0.57%
BF Stoves-5	Chimney-5	70 mtr.	3.5mtrs.	-	24.12.19	3016 T	105736	22.44	84.15	50.48	-	0.58%
Standards : Charging side chimney- PM - 100 (Units: mg/Nm³) BF Stoves – PM- 50 mg/Nm³, SO₂- 250 mg/Nm³, NO_x- 150 mg/Nm³ CO- 1% v/v (Max) • BF#1 is connected to chimney no-1 , BF#2&BF#3 are connected to chimney no-2 and BF#4&BF#5 are connected to chimney no-3 Each BF stove is connected to corresponding chimney No.												
Refractory Material plant												
Kiln-1	Stack – 1	80 mtr.	3.3mtrs	ESP	09.12.19	11.25 T/hr	138750	54.64	90.70			
Kiln-2	Stack – 1	80 mtr.	3.3mtrs	ESP	Under Shutdown							
Kiln-3	Stack - 2	80 mtr	3.3mtrs	ESP	13.12.19	11.25 T/hr	149608	56.07				
Kiln-4	Stack – 2	80 mtr.	3.3mtrs	ESP	Under Shutdown							
Kiln-5	Stack – 3	80 mtr.	3.3 mtrs	ESP	16.12.19	11.25 T/hr	148722	129.96	77.84			
Kiln-6	Stack – 3	80 mtr.	3.3 mtrs	ESP	Under Shutdown							

Standards: PM - 150 , SO₂ - , NO_x - , CO - (Units: mg/Nm³)

Monitoring values for corresponding Kiln duct. Two Kilns through individual Ducts are connected to a common stack.

SMS – 1 (Process unit)					Date		Flow rate (NM ³ /Hr)	PM (mg/Nm ³)	SO ₂ (mg/Nm ³)	NO _x (mg/Nm ³)	HC	CO	
Conv. – 1(NB)	Stack – 1	100 m	4.3mtrs	Wet scrubber	Under Capital Repair							-	-
Conv. – 2(NB)	Stack – 1	100 m	4.3mtrs	Wet scrubber	Under Shutdown for campaign repair								
Conv. – 2 (BL)	Stack – 1	100 m	4.3mtrs	Wet scrubber									
Conv. – 3(NB)	Stack – 1	100 m	4.3mtrs	Wet scrubber	11.12.19	-	109721	23.50	-	-	-	-	
Conv. – 3(BL)	Stack – 1	100m	4.3mtrs	Wet scrubber	11.12.19	-	252626	249.51	72.81	39.52	-	-	
Conv. – 4(NL)	Stack – 1	100 m	4.3mtrs	Wet scrubber	Under Shutdown								-
Conv. – 5 (NB)	Stack – 1	100 m	4.3mtrs	Wet scrubber	Under Modernization							-	-
Conv. – 5(BL)	Stack – 1	100m	4.3mtrs	Wet scrubber									
SMS-2/CCS	LF- 2	80m	1.25m	Bag filter	26.12.19	-	110735	21.97	-	-	-	-	

Standard : PM - 300, SO₂ - , NO_x - , CO - * Monitored in individual ducts(of dia 2.5 m each) from corresponding converters. SMS-2/CCS Stack -PM #50mg/Nm³
(Units: mg/Nm³) All ducts are connected to a common stack

Coke Oven														
Batt. # 1	Stack – 1	100 m.	3.5mtrs	-	27.12.19	-	148316	28.96	246.51	92.14	-	1.52		
Batt. # 2	Stack – 2	100 m.	3.5mtrs	-	18.12.19	-	145208	30.16	252.70	85.10	-	1.48		
Batt # 3	Stack - 3	100 m	3.5 mtrs	-	23.12.19	-	142116	32.64	237.15	65.79	-	1.39		
Batt. # 4	Stack – 4	100 m.	3.5 mtrs	-	10.12.19	-	140772	27.56	225.36	108.17	-	1.47		
Batt. # 5	Stack – 5	100 m.	3.5mtrs	-	07.12.19	-	150.734	45.96	226.80	95.90	-	1.68		
Batt # 6	Stack - 6	100 m.	3.5 mts	Shutdown for Rebuilding										
Batt. # 7	Stack – 7	100 m.	3.5mtrs	-	05.12.19	-	148356	22.96	252.11	69.30	-	1.44		
Batt. # 8	Stack – 8	100 m.	3.5mtrs	Under Rebuilding										

Standard: PM - 50, SO₂ - 800, NO_x - 500, CO – 3.00 Kg/TDCP, HC -
(Units: mg/Nm³)

Sinter Plant												
SM-1	Duct-A	100 m.*	3.5mtrs	Batt. cyclone	02.12.19	-	390725	136.72	90.12	51.06	-	-
	Duct-B		3.5mtrs	Batt. cyclone		-	Under Shutdown					-
SM-2	Duct-A		3.5mtrs	Batt. cyclone	31.12.19	-	389728	141.72	86.15	48.34	-	-
	Duct-B		3.5mtrs	Batt. cyclone	31.12.19	-	394125	146.06	-	-	-	-
SM-3	Duct-A		3.5mtrs	Batt. cyclone	04.12.19	-	394714	139.52	92.70	52.82	-	-
	Duct-B	100 m.*	3.5mtrs	Batt. cyclone	04.12.19	-	320704	58.81	-	-	-	-

Standard: PM - 150 , SO₂ - , NO_x - (Units: mg/Nm³) * All three Sinter M/c Exhaust are connected to a common single stack of 100m height

JAN'2020

Name of the Plant	Stack connected to (Name of the unit)	Height of the stack (m)	Diameter of the stack (m)	Pollution Control unit provided (Name)	Date & Time of the monitoring (duration)	Production fig. of the unit, during the period of monitoring	Flow rate of the flue gas (NM ³ /Hr)	Parameters (whichever are applicable)				
								1	2	3	4	5
Blast Furnace (Space dedusting) & Stoves								Particulate matter (PM) (mg/Nm ³)	SO₂ (mg/Nm ³)	NO_x (mg/Nm ³)	HC	CO Kg/TDCP Vol./vol.
BF-1	Chimney-1	50 mtr.	8.2mtrs.	Wet scrubber	Under Capital Repair							
BF-2	Chimney-2	50 mtr.	8.2mtrs.	Wet scrubber	09.01.2020	7070 T	288720	76.82	-	-	-	-
BF-3	Chimney-2	50 mtr.	8.2mtrs.	Wet scrubber								
BF-4	Chimney-3	50 mtr.	8.2mtrs.	Wet scrubber	Under Capital Repair							
BF-5	Chimney-3	50 mtr.	8.2mtrs.	Wet scrubber	29.01.2020	2750 T	270760	78.81	-	-	-	-
BF Stoves-5	Chimney-5	70 mtr.	3.5mtrs.	-	13.01.2020	3290 T	106301	25.36	89.35	66.15	-	0.30%
BF Stoves-3	Chimney-3	70 mtr.	3.5mtrs.	-	24.01.2020	3481 T	108390	23.08	72.10	58.70	-	0.28%
Standards : Charging side chimney- PM - 100 (Units: mg/Nm³) BF Stoves – PM- 50 mg/Nm³, SO₂- 250 mg/Nm³, NO_x- 150 mg/Nm³ CO- 1% v/v (Max) • BF#1 is connected to chimney no-1 , BF#2&BF#3 are connected to chimney no-2 and BF#4&BF#5 are connected to chimney no-3 Each BF stove is connected to corresponding chimney No.												
Refractory Material plant												
Kiln-1	Stack – 1	80 mtr.	3.3mtrs	ESP	15.01.2020	11.25 T/hr	140527	48.86	129.85			
Kiln-2	Stack – 1	80 mtr.	3.3mtrs	ESP	08.01.2020	11.25 T/hr	144562	124.62	107.91			
Kiln-3	Stack - 2	80 mtr	3.3mtrs	ESP	Under Shutdown							
Kiln-4	Stack – 2	80 mtr.	3.3mtrs	ESP	27.01.2020	11.25 T/hr	143520	59.89	108.06			
Kiln-5	Stack – 3	80 mtr.	3.3 mtrs	ESP	16.12.2020	10.91 T/hr	148722	134.32	135.66			
Kiln-6	Stack – 3	80 mtr.	3.3 mtrs	ESP	21.01.2020	10.83 T/hr	144226	41.62	90.86			

Standards: PM - 150, SO₂ - , NO_x - , CO - (Units: mg/Nm³)

Monitoring values for corresponding Kiln duct. Two Kilns through individual Ducts are connected to a common stack.

SMS – 1 (Process unit)					Date		Flow rate (Nm ³ /Hr)	PM (mg/Nm ³)	SO ₂ (mg/Nm ³)	NO _x (mg/Nm ³)	HC	CO		
Conv. – 1(NB)	Stack – 1	100 m	4.3mtrs	Wet scrubber	Under Capital Repair							-	-	
Conv. – 2(NB)	Stack – 1	100 m	4.3mtrs	Wet scrubber	Under Shutdown for campaign repair									
Conv. – 2 (BL)	Stack – 1	100 m	4.3mtrs	Wet scrubber										
Conv. – 3(NB)	Stack – 1	100 m	4.3mtrs	Wet scrubber	19.01.2020	-	107520	22.40	-	-	-	-		
Conv. – 3(BL)	Stack – 1	100m	4.3mtrs	Wet scrubber	19.01.2020	-	258776	245.35	88.12	36.52	-	-		
Conv. – 4(NL)	Stack – 1	100 m	4.3mtrs	Wet scrubber	Under Shutdown								-	
Conv. – 5 (NB)	Stack – 1	100 m	4.3mtrs	Wet scrubber		Under Stabilization							-	-
Conv. – 5(BL)	Stack – 1	100m	4.3mtrs	Wet scrubber										
SMS-2/CCS	LF- 1	80m	1.25m	Bag filter	30.01.2020	-	110735	23.96	-	-	-	-		

Standard : PM - 300, SO₂ - , NO_x - , CO - * Monitored in individual ducts(of dia 2.5 m each) from corresponding converters. SMS-2/CCS Stack -PM #50mg/Nm³
(Units: mg/Nm³) All ducts are connected to a common stack

Coke Oven													
Batt. # 1	Stack – 1	100 m.	3.5mtrs	-	23.01.2020	-	142708	36.71	216.80	90.36	-	1.4	
Batt. # 2	Stack – 2	100 m.	3.5mtrs	-	18.01.2020	-	145360	32.86	236.30	90.34	-	1.3	
Batt # 3	Stack - 3	100 m	3.5 mtrs	-	06.01.2020	-	147083	31.09	201.17	80.73	-	1.1	
Batt. # 4	Stack – 4	100 m.	3.5 mtrs	-	01.01.2020	-	154362	28.80	228.10	105.86	-	1.3	
Batt. # 5	Stack – 5	100 m.	3.5mtrs	-	31.01.2020	-	156722	46.48	240.52	96.14	-	1.4	
Batt # 6	Stack - 6	100 m.	3.5 mts	Shutdown for Rebuilding									
Batt. # 7	Stack – 7	100 m.	3.5mtrs	-	20.01.2020	-	141006	22.14	180.72	80.35	-	1.2	
Batt. # 8	Stack – 8	100 m.	3.5mtrs	Under Rebuilding									

Standard: PM - 50, SO₂ - 800, NO_x - 500, CO – 3.00 Kg/TDCP, HC -

(Units: mg/Nm³)

Sinter Plant													
SM-1	Duct-A	100 m.*	3.5mtrs	Batt. cyclone	Under Shutdown							-	-
	Duct-B		3.5mtrs	Batt. cyclone	Under Shutdown for installation of ESP							-	-
SM-2	Duct-A		3.5mtrs	Batt. cyclone	28.01.20	-	396702	145.32	99.62	50.30	-	-	
	Duct-B		3.5mtrs	Batt. cyclone	28.01.20	-	398120	147.52	95.45	52.67	-	-	
SM-3	Duct-A		3.5mtrs	Batt. cyclone	16.01.20	-	398774	144.31	89.14	52.74	-	-	
	Duct-B	100 m.*	3.5mtrs	Batt. cyclone	16.01.20	-	325301	58.52	92.43	53.29	-	-	

Standard: PM - 150 , SO₂ - , NO_x - (Units: mg/Nm³)

* All three Sinter M/c Exhaust are connected to a common single stack of 100m height

Mill zone												
CRM	HDGL	60m	3.0mtrs	-	14.01.20	-		29.62	78.52	62.82	-	-

Standard: PM-150mg/Nm³

FEB'2020

Name of the Plant	Stack connected to (Name of the unit)	Height of the stack (m)	Diameter of the stack (m)	Pollution Control unit provided (Name)	Date & Time of the monitoring (duration)	Production fig. of the unit, during the period of monitoring	Flow rate of the flue gas (NM ³ /Hr)	Parameters (whichever are applicable)				
								1	2	3	4	5
Blast Furnace (Space dedusting) & Stoves								Particulate matter (PM)	SO₂	NO_x	HC	CO
								(mg/Nm ³)	(mg/Nm ³)	(mg/Nm ³)		Kg/TDCP Vol./vol.
BF-1	Chimney-1	50 mtr.	8.2mtrs.	Wet scrubber	01.02.2020	3008	281260	62.34	-	-	-	-
BF-2	Chimney-2	50 mtr.	8.2mtrs.	Wet scrubber	21.02.2020	4189	278865	74.30	-	-	-	-
BF-3	Chimney-2	50 mtr.	8.2mtrs.	Wet scrubber	-	-	-	-	-	-	-	-
BF-4	Chimney-3	50 mtr.	8.2mtrs.	Wet scrubber	Under Capital Repair							
BF-5	Chimney-3	50 mtr.	8.2mtrs.	Wet scrubber	07.02.2020	3090	272862	80.65	-	-	-	-
BF Stoves-1	Chimney-1	70 mtr.	3.5mtrs.	-	14.02.2020	3317	109562	21.08	72.18	51.08	-	0.26%
BF Stoves-2	Chimney-2	70 mtr.	3.5mtrs.	-	18.02.2020	4077	110008	23.64	80.64	48.34	-	0.25%

Standards : Charging side chimney- PM - 100 (Units: mg/Nm³)

BF Stoves – PM- 50 mg/Nm³, SO₂- 250 mg/Nm³, NO_x- 150 mg/Nm³ CO- 1% v/v (Max)

- BF#1 is connected to chimney no-1 , BF#2&BF#3 are connected to chimney no-2 and BF#4&BF#5 are connected to chimney no-3
Each BF stove is connected to corresponding chimney No.

Refractory Material plant

Kiln	Stack	Height	Diameter	Pollution Control unit	Under Shutdown								
					Date	Production	Flow rate	PM	SO ₂	NO _x	HC	CO	
Kiln-1	Stack – 1	80 mtr.	3.3mtrs	ESP									
Kiln-2	Stack – 1	80 mtr.	3.3mtrs	ESP	04.02.2020	11.25 T/hr	148770	133.09	105.32	-	-	-	
Kiln-3	Stack - 2	80 mtr	3.3mtrs	ESP	27.02.2020	11.25 T/hr	142796	77.26	118.70	-	-	-	
Kiln-4	Stack – 2	80 mtr.	3.3mtrs	ESP	22.02.2020	11.05 T/hr	141674	48.95	90.80	-	-	-	
Kiln-5	Stack – 3	80 mtr.	3.3 mtrs	ESP	16.02.2020	11.25 T/hr	148532	138.95	87.48	-	-	-	
Kiln-6	Stack – 3	80 mtr.	3.3 mtrs	ESP	20.02.2020	10.21 T/hr	177955	26.62	107.91	-	-	-	

Standards: PM - 150 , SO₂ - , NO_x - , CO - (Units: mg/Nm³)

Monitoring values for corresponding Kiln duct. Two Kilns through individual Ducts are connected to a common stack.

SMS – 1 (Process unit)					Date	Flow rate (NM ³ /Hr)	PM (mg/Nm ³)	SO ₂ (mg/Nm ³)	NO _x (mg/Nm ³)	HC	CO	
Conv. – 1 (NB)	Stack – 1	100 m	4.3mtrs	Wet scrubber	Under Capital Repair						-	-
Conv. – 2 (NB)	Stack – 1	100 m	4.3mtrs	Wet scrubber	Under Shutdown for campaign repair							
Conv. – 2 (BL)	Stack – 1	100 m	4.3mtrs	Wet scrubber								
Conv. – 3 (NB)	Stack – 1	100 m	4.3mtrs	Wet scrubber	19.02.2020	-	108720	24.96	-	-	-	-
Conv. – 3 (BL)	Stack – 1	100m	4.3mtrs	Wet scrubber	19.02.2020	-	254728	238.08	92.16	46.30	-	-
Conv. – 4 (NL)	Stack – 1	100 m	4.3mtrs	Wet scrubber	Under Shutdown							-
Conv. – 5 (NB)	Stack – 1	100 m	4.3mtrs	Wet scrubber	Under Stabilization						-	-
Conv. – 5 (BL)	Stack – 1	100m	4.3mtrs	Wet scrubber								
SMS-2/CCS	LF- 2	80m	1.25m	Bag filter	28.02.2020	-	106252	21.90	78.64	40.50	-	-

Standard : PM - 300, SO₂ - , NO_x - , CO -

* Monitored in individual ducts (of diameter 2.5 m each) from corresponding converters. SMS-2/CCS Stack -PM #50mg/Nm³

(Units: mg/Nm³)

All ducts are connected to a common stack

Coke Oven												
Batt. # 1	Stack – 1	100 m.	3.5mtrs	-	13.02.2020	-	145946	36.21	220.58	81.8	-	1.35
Batt. # 2	Stack – 2	100 m.	3.5mtrs	-	08.02.2020	-	147950	30.12	215.25	59.6	-	1.22
Batt # 3	Stack - 3	100 m	3.5 mtrs	-	06.02.2020	-	144008	28.62	205.62	70.6	-	1.52
Batt. # 4	Stack – 4	100 m.	3.5 mtrs	-	26.02.2020	-	148526	31.88	224.80	82.5	-	1.38
Batt. # 5	Stack – 5	100 m.	3.5mtrs	-	05.02.2020	-	157126	45.13	237.41	62.4	-	1.86
Batt # 6	Stack - 6	100 m.	3.5 mts	Shutdown for Rebuilding								
Batt. # 7	Stack – 7	100 m.	3.5mtrs	-	24.02.2020	-	146310	24.74	259.35	58.6	-	1.27
Batt. # 8	Stack – 8	100 m.	3.5mtrs	Under Rebuilding								

Standard: PM - 50, SO₂ - 800, NO_x - 500, CO – 3.00 Kg/TDCP, HC -

(Units: mg/Nm³)

Sinter Plant												
SM-1	Duct-A	100 m.*	3.5mtrs	Batt. cyclone	Under Shutdown						-	-
	Duct-B		3.5mtrs	Batt. cyclone	Under Shutdown for installation of ESP						-	-
SM-2	Duct-A		3.5mtrs	Batt. cyclone	17.02.2020	-	392524	138.06	80.24	44.30	-	-
	Duct-B		3.5mtrs	Batt. cyclone	17.02.2020	-	399620	144.82	78.10	40.55	-	-
SM-3	Duct-A		3.5mtrs	Batt. cyclone	03.02.2020	-	390715	144.80	92.72	36.5	-	-
	Duct-B	100 m.*	3.5mtrs	Batt. cyclone	03.02.2020	-	310505	38.96	80.72	42.08	-	-

Standard: PM - 150 , SO₂ - , NO_x - (Units: mg/Nm³)

* All three Sinter M/c Exhaust are connected to a common single stack of 100m height

Mill zone												
CRM	CAL	60m	3.0mtrs	-	29.02.2020	-		31.43	54.03	30.94	-	-

Standard: PM-150mg/Nm³

MAR'2020

Name of the Plant	Stack connected to (Name of the unit)	Height of the stack (m)	Diameter of the stack (m)	Pollution Control unit provided (Name)	Date & Time of the monitoring (duration)	Production fig. of the unit, during the period of monitoring g	Flow rate of the flue gas (NM ³ /Hr)	Parameters (whichever are applicable)				
								1	2	3	4	5
Blast Furnace (Space dedusting) & Stoves								Particulate matter (PM)	SO₂	NO_x	HC	CO
								(mg/Nm ³)	(mg/Nm ³)	(mg/Nm ³)		Kg/TDCP Vol./vol.
BF-1	Chimney-1	50 mtr.	8.2mtrs.	Wet scrubber	14.03.2020	3588 T	279621	66.39	-	-	-	-
BF-2	Chimney-2	50 mtr.	8.2mtrs.	Wet scrubber	06.03.2020	6632 T	270352	72.14	-	-	-	-
BF-3	Chimney-2	50 mtr.	8.2mtrs.	Wet scrubber	Under Capital Repair							
BF-4	Chimney-3	50 mtr.	8.2mtrs.	Wet scrubber								
BF-5	Chimney-3	50 mtr.	8.2mtrs.	Wet scrubber	20.03.2020	1016 T	257342	69.06	-	-	-	-
BF Stoves-2	Chimney-2	70 mtr.	3.5mtrs.	-	26.03.2020	3781 T	107305	24.35	80.14	50.72	-	0.28%
BF Stoves-5	Chimney-5	70 mtr.	3.5mtrs.	-	23.03.2020	2828 T	101442	21.96	72.64	44.14	-	0.26%
Standards : Charging side chimney- PM - 100 (Units: mg/Nm³)												
BF Stoves – PM- 50 mg/Nm³, SO₂- 250 mg/Nm³, NO_x- 150 mg/Nm³ CO- 1% v/v (Max)												
<ul style="list-style-type: none"> BF#1 is connected to chimney no-1 , BF#2&BF#3 are connected to chimney no-2 and BF#4&BF#5 are connected to chimney no-3 												
Each BF stove is connected to corresponding chimney No.												
Refractory Material plant												
Kiln-1	Stack – 1	80 mtr.	3.3mtrs	ESP	25.03.20	11.25T/hr	143605	34.64	129.67	-	-	-
Kiln-2	Stack – 1	80 mtr.	3.3mtrs	ESP	02.03.20	9.38T/hr	145332	143.42	89.06	-	-	--
Kiln-3	Stack - 2	80 mtr	3.3mtrs	ESP	19.03.20	11.25T/hr	148352	44.06	95.36	-	-	-
Kiln-4	Stack – 2	80 mtr.	3.3mtrs	ESP	06.03.20	11.25T/hr	147321	50.52	80.14	-	-	-
Kiln-5	Stack – 3	80 mtr.	3.3 mtrs	ESP	Under Shutdown for refurbishing							
Kiln-6	Stack – 3	80 mtr.	3.3 mtrs	ESP	28.03.20	11.25T/hr	144778	88.70	68.25	-	-	-

Standards: PM - 150 , SO₂ - , NO_x - , CO - (Units: mg/Nm³)

Monitoring values for corresponding Kiln duct. Two Kilns through individual Ducts are connected to a common stack.

SMS – 1 (Process unit)					Date		Flow rate (NM ³ /Hr)	PM (mg/Nm ³)	SO ₂ (mg/Nm ³)	NO _x (mg/Nm ³)	HC	CO	
Conv. – 1(NB)	Stack – 1	100 m	4.3mtrs	Wet scrubber	Under Capital Repair							-	-
Conv. – 2(NB)	Stack – 1	100 m	4.3mtrs	Wet scrubber	Under Shutdown for campaign repair								
Conv. – 2 (BL)	Stack – 1	100 m	4.3mtrs	Wet scrubber									
Conv. – 3(NB)	Stack – 1	100 m	4.3mtrs	Wet scrubber	17.03.20	-	102709	21.96	-	-	-	-	
Conv. – 3(BL)	Stack – 1	100m	4.3mtrs	Wet scrubber	17.03.20	-	249770	246.04	104.04	52.56	-	-	
Conv. – 4(NL)	Stack – 1	100 m	4.3mtrs	Wet scrubber	Under Shutdown								-
Conv. – 5 (NB)	Stack – 1	100 m	4.3mtrs	Wet scrubber	Under Stabilization							-	-
Conv. – 5(BL)	Stack – 1	100m	4.3mtrs	Wet scrubber									
SMS-2/CCS	LF- 1	80m	1.25m	Bag filter	24.03.20	-	105672	22.94	64.34	38.05	-	-	

Standard : PM - 300, SO₂ - , NO_x - , CO - * Monitored in individual ducts(of dia 2.5 m each) from corresponding converters. SMS-2/CCS Stack -PM #50mg/Nm³
(Units: mg/Nm³) All ducts are connected to a common stack

Coke Oven												
Batt. # 1	Stack – 1	100 m.	3.5mtrs	-	07.03.20	-	142414	32.61	239.5	59.8	-	1.31
Batt. # 2	Stack – 2	100 m.	3.5mtrs	-	09.03.20	-	144456	30.60	265.8	61.2	-	1.17
Batt # 3	Stack - 3	100 m	3.5 mtrs	-	27.03.20	-	143705	25.52	205.8	68.27	-	1.80
Batt. # 4	Stack – 4	100 m.	3.5 mtrs	-	04.03.20	-	147414	34.03	259.7	84.2	-	2.26
Batt. # 5	Stack – 5	100 m.	3.5mtrs	-	19.03.20	-	145460	46.0	259.6	72.4	-	1.34
Batt # 6	Stack - 6	100 m.	3.5 mts	Shutdown for Rebuilding								
Batt. # 7	Stack – 7	100 m.	3.5mtrs	-	21.03.20	-	143768	24.92	250.5	74.8	-	1.23
Batt. # 8	Stack – 8	100 m.	3.5mtrs	Under Rebuilding								

Standard: PM - 50, SO₂ - 800, NO_x - 500, CO – 3.00 Kg/TDCP, HC -
(Units: mg/Nm³)

Sinter Plant													
SM-1	Duct-A	100 m.*	3.5mtrs	Batt. cyclone	Under Shutdown							-	-
	Duct-B		3.5mtrs	Batt. cyclone	Under Shutdown for installation of ESP							-	-
SM-2	Duct-A		3.5mtrs	Batt. cyclone	18.03.20	-	3944342	140.90	84.20	58.12	-	-	
	Duct-B		3.5mtrs	Batt. cyclone	18.03.20	-	396704	139.14	96.15	60.64	-	-	
SM-3	Duct-A		3.5mtrs	Batt. cyclone	10.03.20	-	398372	142.66	102.34	48.30	-	-	
	Duct-B	100 m.*	3.5mtrs	Batt. cyclone	10.03.20	-	324351	62.74	78.54	50.14	-	-	

Standard: PM - 150 , SO₂ - , NO_x - (Units: mg/Nm³) * All three Sinter M/c Exhaust are connected to a common single stack of 100m height

Mill zone												
S. Mill	Soaking pit		3.0mtrs	-	11.03.20	-	105324	32.62	50.14	26.86	-	-

Standard: PM-150mg/Nm³

Status of compliances to the Fugitive emission standards of coke oven batteries in (Bokaro Steel plant)

OCT'2019

Plant/Bat. No.	Date of commissioning		Current age in year	PLD (%)	PLL (%)	PLO (%)	Charging emission (sec/charge.) (TC)	Stack emission (mg/Nm ³)			SPM emission charging (mg/-Nm ³)	SPM emission pushing (mg/Nm ³)	PM for quenchi ng gm/tonne	Status of compliance
	Initial	After rebuilding						PM	SO ₂	NO _x				
<i>EP (Act) Norm (at green field site)</i>				5	1	4	16	50	800	500	25	5	50	
<i>(Rebuild battery)</i>				10	1	4	50	50	800	500	25	5	50	
<i>(Existing battery)</i>				10	1	4	75	50	800	500	25	-	-	
Battery No. 1				3.25-3.62	0.48-0.60	1.08-2.53	40-47					1.62	26.54	
Battery No. 2				5.23-7.97	0.36-0.84	1.62-3.07	35-46					1.85	22.35	
Battery No. 3				3.43-7.06	0.48-0.84	1.26-2.71	41-46					2.05	33.57	
Battery No. 4				2.35-6.70	0.48-0.60	1.08-3.72	38-48					1.95	29.56	
Battery No. 5				7.79-9.81	0.60-0.96	2.87-3.92	42-49					2.98	38.28	
Battery No. 6				Under Shutdown for Rebuilding										
Battery No. 7				1.08-1.62	0.12-0.36	0.00-1.26	38-45					1.21	22.53	
Battery No. 8				Under Shutdown for Rebuilding										

Coke oven & Mixed gas used for heating:

* Data provided under Stack emission status at section : A of this format

SC – Stamp Charge
 NC – Non Compliance
 C – Compliance
 TC- Top charge

NB: Batt#7 & Batt#8 have been shut down for rebuilding

NOV '2019

Plant/Bat. No.	Date of commissioning		Current age in year	PLD (%)	PLL (%)	PLO (%)	Charging emission (sec/charge.) (TC)	Stack emission (mg/Nm ³)			SPM emission charging (mg/-Nm ³)	SPM emission pushing (mg/Nm ³)	PM for quenching gm/tonne	Status of compliance
	Initial	After rebuilding						PM	SO ₂	NO _x				
<i>EP (Act) Norm (at green field site)</i>				5	1	4	16	50	800	500	25	5	50	
<i>(Rebuild battery)</i>				10	1	4	50	50	800	500	25	5	50	
<i>(Existing battery)</i>				10	1	4	75	50	800	500	25	-	-	
Battery No. 1				1.98-3.25	0.36-0.48	0.54-1.80	36-48					2.68	26.34	
Battery No. 2				2.89-5.25	0.48-0.60	1.26-2.89	39-48					2.83	25.95	
Battery No. 3				2.71-5.61	0.36-0.84	1.26-3.24	30-47					3.05	32.51	
Battery No. 4				2.53-4.52	0.48-0.06	1.12-2.35	34-47					2.64	29.67	
Battery No. 5				7.14-9.54	0.60-0.98	2.62-3.76	41-49					3.69	35.24	
Battery No. 6				Under Shutdown for Rebuilding										
Battery No. 7				0.72-1.44	0.12-0.24	0-0.72	36-44					1.86	19.25	
Battery No. 8				Under Shutdown for Rebuilding										

Coke oven & Mixed gas used for heating:

* Data provided under Stack emission status at section: A of this format

- SC – Stamp Charge
- NC – Non Compliance
- C - Compliance
- TC- Top charge

NB: Batt # 7 & Batt # 8 have been shut down for rebuilding

DEC'2019

Plant/Bat. No.	Date of commissioning		Cur - rent age in year	PLD (%)	PLL (%)	PLO (%)	Charge- ing emission (sec/ charge.) (TC)	Stack emission (mg/Nm ³)			SPM emission charging (mg/-Nm ³)	SPM emissio n pushing (g/ TDCP)	PM for quenchi ng g/ TDCP	Status of compliance
	Initial	After rebuilding						PM	SO ₂	NO _x				
<i>EP (Act) Norm (at green field site)</i>				5	1	4	16	50	800	500	25	5	50	
<i>(Rebuild battery)</i>				10	1	4	50	50	800	500	25	5	50	
<i>(Existing battery)</i>				10	1	4	75	50	800	500	25	-	-	
Battery No. 1				1.44-2.72	6.12-0.48	1.08-1.54	32-48					1.85	27.82	
Battery No. 2				2.17-4.34	0.24-0.60	0.72-3.26	38-48					2.18	31.42	
Battery No. 3				2.96-3.80	0.48-0.84	1.98-3.26	43-47					1.98	36.28	
Battery No. 4				3.07-5.25	0.36-0.60	1.62-2.89	36-46					3.02	31.52	
Battery No. 5				7.15-9.30	0.60-0.96	2.86-3.84	42-49					4.52	40.38	
Battery No. 6				Under Shutdown for Rebuilding										
Battery No. 7				1.08-2.17	0.12-0.24	0.00-1.08	36-47					1.35	19.26	
Battery No. 8				Under Shutdown for Rebuilding										

Coke oven& Mixed gas used for heating:

* Data provided under Stack emission status at section: A of this format

SC – Stamp Charge
 NC –Non Compliance
 C - Compliance
 TC- Top charge

NB: Batt # 7 & Batt # 8 have been shut down for rebuilding

JAN'2020

Plant/Bat. No.	Date of commissioning		Current age in year	PLD (%)	PLL (%)	PLO (%)	Charging emission (sec/charge.) (TC)	Stack emission (mg/Nm ³)			SPM emission charging (mg/-Nm ³)	SPM emission pushing (g/TDCP)	PM for quenching g/TDCP	Status of compliance
	Initial	After rebuilding						PM	SO ₂	NO _x				
<i>EP (Act) Norm (at green field site)</i>				5	1	4	16	50	800	500	25	5	50	
<i>(Rebuild battery)</i>				10	1	4	50	50	800	500	25	5	50	
<i>(Existing battery)</i>				10	1	4	75	50	800	500	25	-	-	
Battery No. 1				1.08-3.61	0.36-0.60	0.90-1.99	32-40					1.85	27.82	
Battery No. 2				1.99-4.88	0.48-0.84	1.08-3.07	30-38					2.18	31.42	
Battery No. 3				3.07-7.24	0.36-0.84	1.26-2.88	29-39					1.98	36.28	
Battery No. 4				3.07-5.97	0.24-0.60	1.26-3.33	32-42					3.02	31.52	
Battery No. 5				7.78-9.25	0.60-0.96	3.12-3.87	32-48					4.52	40.38	
Battery No. 6				Under Shutdown for Rebuilding										
Battery No. 7				1.08-1.98	0.24-0.36	0.00-1.28	36-39					1.35	19.26	
Battery No. 8				Under Shutdown for Rebuilding										

Coke oven & Mixed gas used for heating:

* Data provided under Stack emission status at section: A of this format

- SC – Stamp Charge
- NC – Non Compliance
- C - Compliance
- TC- Top charge

NB: Batt # 6 & Batt # 8 have been shut down for rebuilding

FEB'2020

Plant/Bat. No.	Date of commissioning		Current age in year	PLD (%)	PLL (%)	PLO (%)	Charging emission (sec/charge.) (TC)	Stack emission (mg/Nm ³)			SPM emission charging (mg/-Nm ³)	SPM emission pushing (g/TDCP)	PM for quenching g/TDCP	Status of compliance
	Initial	After rebuilding						PM	SO ₂	NO _x				
<i>EP (Act) Norm (at green field site)</i>				5	1	4	16	50	800	500	25	5	50	
<i>(Rebuild battery)</i>				10	1	4	50	50	800	500	25	5	50	
<i>(Existing battery)</i>				10	1	4	75	50	800	500	25	-	-	
Battery No. 1				1.44-3.80	0.36-0.48	1.26-2.17	38-46					1.85	27.82	
Battery No. 2				3.80-6.69	0.48-0.72	1.44-2.89	40-45					2.18	31.42	
Battery No. 3				5.79-8.69	0.36-0.84	1.44-3.88	36-46					1.98	36.28	
Battery No. 4				2.93-7.06	0.48-0.60	1.65-3.42	30-44					3.02	31.52	
Battery No. 5				7.78-9.67	0.36-0.78	3.17-3.79	36-46					4.52	40.38	
Battery No. 6				Under Shutdown for Rebuilding										
Battery No. 7				2.16-3.20	0.00-0.36	0.00-1.48	30-42					1.35	19.26	
Battery No. 8				Under Shutdown for Rebuilding										

Coke oven& Mixed gas used for heating:

* Data provided under Stack emission status at section: A of this format

- SC – Stamp Charge
- NC –Non Compliance
- C - Compliance
- TC- Top charge

NB: Batt # 6 & Batt # 8 have been shut down for rebuilding

MAR'2020

Plant/Bat. No.	Date of commissioning		Cur - rent age in year	PLD (%)	PLL (%)	PLO (%)	Charge- ing emission (sec/ charge.) (TC)	Stack emission (mg/Nm ³)			SPM emission charging (mg/-Nm ³)	SPM emission pushing (g/ TDCP)	PM for quenchi ng g/ TDCP	Status of compliance
	Initial	After rebuilding						PM	SO ₂	NO _x				
<i>EP (Act) Norm (at green field site)</i>				5	1	4	16	50	800	500	25	5	50	
<i>(Rebuild battery)</i>				10	1	4	50	50	800	500	25	5	50	
<i>(Existing battery)</i>				10	1	4	75	50	800	500	25	-	-	
Battery No. 1				1.62-2.89	0.48-0.60	1.44-2.17	36-46					1.85	29.16	
Battery No. 2				3.80-8.14	0.60-0.72	2.16-2.35	38-46					1.95	30.52	
Battery No. 3				4.88-6.57	0.60-0.96	2.53-3.51	40-47					2.65	34.14	
Battery No. 4				2.89-4.22	0.24-0.73	1.98-2.96	30-44					2.15	28.72	
Battery No. 5				7.88-9.52	0.60-0.84	3.25-3.82	40-48					3.12	39.66	
Battery No. 6				Under Shutdown for Rebuilding										
Battery No. 7				0.54-1.80	0.00-0.75	0.00-0.90	32-42					1.54	20.68	
Battery No. 8				Under Shutdown for Rebuilding										

Coke oven & Mixed gas used for heating:

* Data provided under Stack emission status at section: A of this format

- SC – Stamp Charge
- NC – Non Compliance
- C - Compliance
- TC- Top charge

NB: Batt # 6 & Batt # 8 have been shut down for rebuilding

Ambient Air Quality

Ambient Air Quality (AAQ) (All Ambient Air Quality Monitoring Station)

Standards : PM₁₀ - 100, PM_{2.5} -60, SO₂ - 80, NO₂ – 80, NH₃ – 400 , O₃-100, Pb -1.0 , C₆H₆– 5.0 , (Units: micro gram/meter³), As - 6.0, B(a)P - 1.0 , Ni – 20.0 (units – Nano gram/meter³) , CO – 2.0 mg/m³

OCT'2019 Ambient air quality is monitored on bi-weekly basis. Average value of the month is reported

S. No	Location of the Station	Parameters (as applicable)											
		PM ₁₀	PM _{2.5}	SO ₂	NO ₂	NH ₃	O ₃	Pb	C ₆ H ₆	As	B(a)P	Ni	CO
1	B.S. City Rly. Stn	95	42	15	19	17	27.5	0.026	1.00	1.46	0.18	2.49	1.02
2	Garga Dam	78	34	26	26	19	26.1	0.017	0.62	1.26	0.09	1.30	0.92
3	Sector-12	74	30	14	21	14	25.8	0.074	0.90	1.30	0.10	1.21	1.44
4	Sector-9	69	31	16	25	18	28.8	0.030	0.82	1.20	0.08	1.40	0.91
5	Bokaro Nivas	76	26	23	29	15	25.2	0.015	0.72	0.98	0.11	1.31	0.46
6	CISF (SGP)	71	38	18	25	18	29.1	0.071	0.95	1.38	0.14	1.32	0.57
7	Air Strip	80	36	28	28	22	30.4	0.079	0.82	0.94	0.12	1.26	0.88
8	CAAQMS at Main gate	57.17	5.08	19.3	49.24	64.89	13.51	-	4.26	-	-	-	0.28
9	CAAQMS at TA building	97.56	27.23	16.29	16.83	17.79	18.62	-	1.97	-	-	-	1.9

NOV '2019

S. No	Location of the Station	Date	Parameters (as applicable)											
			PM ₁₀	PM _{2.5}	SO ₂	NO ₂	NH ₃	O ₃	Pb	C ₆ H ₆	As	B(a)P	Ni	CO
1	B.S. City Rly. Stn		94	48	28	39	25	27	0.031	1.02	1.54	0.18	11.34	1.41
2	Garga Dam		80	42	20	32	22	24	0.026	1.04	1.36	0.16	10.28	1.36
3	Sector-12		82	41	19	32	23	28	0.024	0.96	1.81	0.16	3.43	1.62
4	Sector-9		96	52	24	34	19	32	0.054	0.86	1.72	0.17	12.78	1.66
5	Bokaro Nivas		71	38	16	25	17	21	0.013	0.92	1.65	0.15	5.92	0.52
6	CISF (SGP)		87	45	18	29	21	22	0.031	0.98	1.52	0.20	6.16	0.59
7	Air Strip		82	46	26	34	18	25	0.022	0.91	1.22	0.22	5.46	1.46
8	CAAQMS at Main gate	27.11.19	83.96	29.69	14.84	37.64	33.73	14.56	-	3.56	-	-	-	0.300
9	CAAQMS at TA building	09.11.19	82.17	15.68	16.89	15.84	19.91	14.91	-	1.30	-	-	-	1.87

DEC'2019

S. No	Location of the Station	Date	Parameters (as applicable)											
			PM ₁₀	PM _{2.5}	SO ₂	NO ₂	NH ₃	O ₃	Pb	C ₆ H ₆	As	B(a)P	Ni	CO
1	B.S. City Rly. Stn		88	49	52	38	26	36	0.042	1.12	1.24	0.20	10.06	1.30
2	Garga Dam		76	42	38	40	20	30	0.036	0.96	1.14	0.14	9.62	0.96
3	Sector-12		87	46	40	42	26	34	0.036	0.86	1.08	0.08	4.96	0.88
4	Sector-9		90	48	34	43	25	35	0.026	0.78	1.24	0.10	10.81	0.72
5	Bokaro Nivas		80	36	29	36	24	28	0.036	0.80	1.20	0.11	9.96	0.95
6	CISF (SGP)		93	51	30	39	20	30	0.020	0.96	1.18	0.19	5.16	1.26
7	Air Strip		84	47	34	44	19	27	0.034	0.88	1.16	0.14	7.14	1.08
8	CAAQMS at Main gate	29.12.19	97.27	52.79	13.58	17.05	19.92	11.94	-	1.1	-	-	-	1.34
9	CAAQMS at TA building	06.12.19	56.50	29.48	14.12	39.19	53.24	22.25	-	4.21	-	-	-	0.15

JAN'2020

S. No	Location of the Station	Date	Parameters (as applicable)											
			PM ₁₀	PM _{2.5}	SO ₂	NO ₂	NH ₃	O ₃	Pb	C ₆ H ₆	As	B(a)P	Ni	CO
1	B.S. City Rly. Stn		71	39	19	15	32	39	0.032	1.30	1.36	0.21	10.36	1.20
2	Garga Dam		74	40	32	30	36	30	0.026	0.96	1.12	0.16	8.88	0.90
3	Sector-12		82	45	34	40	41	36	0.034	0.87	1.08	0.15	5.95	0.85
4	Sector-9		81	41	30	36	45	35	0.036	0.90	0.98	0.14	4.80	0.90
5	Bokaro Nivas		79	39	33	40	38	34	0.028	0.72	1.06	0.09	4.81	0.74
6	CISF (SGP)		88	49	28	38	39	37	0.030	0.90	1.20	0.12	7.52	1.30
7	Air Strip		89	48	29	42	43	37	0.034	0.58	1.14	0.08	6.80	0.80
8	CAAQMS at Main gate	17.01.20	85.46	29.36	15.96	39.01	53.47	11.15	-	4.22	-	-	-	0.47
9	CAAQMS at TA building	14.01.20	96.39	53.35	12.63	17.07	19.82	10.08	-	1.77	-	-	-	1.10

FEB'2020

S. No	Location of the Station	Date	Parameters (as applicable)											
			PM ₁₀	PM _{2.5}	SO ₂	NO ₂	NH ₃	O ₃	Pb	C ₆ H ₆	As	B(a)P	Ni	CO
1	B.S. City Rly. Stn		95	43	19	28	18	31	0.005	0.92	1.80	0.18	1.39	1.47
2	Garga Dam		80	40	18	30	16	34	0.008	0.72	1.23	0.11	1.82	0.9
3	Sector-12		81	38	16	23	14	27	0.009	0.90	1.32	0.12	2.04	1.36
4	Sector-9		89	42	20	36	15	40	0.012	1.24	1.40	0.08	1.92	0.84
5	Bokaro Nivas		72	31	21	25	16	22	0.075	0.82	1.48	0.10	7.34	0.63
6	CISF (SGP)		78	35	14	27	22	25	0.060	1.02	1.60	0.17	5.75	0.78
7	Air Strip		84	36	19	32	23	32	0.015	1.06	1.38	0.10	1.88	0.99
8	CAAQMS at Main gate	04.02.2020	84.19	29.38	15.77	39.89	54.15	15.62	-	4.33	-	-	-	0.23
9	CAAQMS at TA building	28.02.2020	57.29	36.6	7.17	16.1	19.94	16.98	-	1.43	-	-	-	0.51

MAR'2020

S. No	Location of the Station	Date	Parameters (as applicable)											
			PM ₁₀	PM _{2.5}	SO ₂	NO ₂	NH ₃	O ₃	Pb	C ₆ H ₆	As	B(a)P	Ni	CO
1	B.S. City Rly. Stn		88	46	40	43	41	30	0.010	1.04	1.72	0.22	1.42	1.23
2	Garga Dam		79	40	36	40	36	28	0.020	0.68	1.24	0.10	1.70	0.89
3	Sector-12		84	38	34	42	33	26	0.012	0.70	1.43	0.08	1.06	0.94
4	Sector-9		83	39	38	41	30	32	0.008	0.72	1.23	0.09	1.24	0.78
5	Bokaro Nivas		76	40	30	36	28	28	0.009	0.66	1.40	0.11	1.36	0.84
6	CISF (SGP)		90	44	38	40	36	30	0.020	0.98	1.62	0.18	1.40	1.06
7	Air Strip		87	43	35	45	38	38	0.024	0.90	1.08	0.12	1.28	1.00
8	CAAQMS at Main gate	12.03.20	59.24	29.61	16.59	54.3	19.89	8.72	-	4.21	-	-	-	0.41
9	CAAQMS at TA building	19.03.20	90.06	46.87	20.52	16.45	19.98	24.72	-	1.92	-	-	-	0.59

Water Pollution Status

Water Consumption 3.86 m³/Tonne of Crude Steel produced

Effluent discharged to: (Name of the river / drain / land etc.): Damodar River

Quality of various effluent streams at the Boundary line of the plant

Standards : Temp.- Upto 40°C, pH -6.0-8.50, TSS- 100, Phenol- 1.0, Cyanide- 0.20, BOD- 30, COD- 250, Amm. Nitrogen- 50, O&G- 10.0

Note:- Outfall-1 (COBPP, Sinter Plant, TPP, BF, RMP), Outfall-2:(SMS-1, SMS-2 &CCS, Rolling Mills)Outfall-3; Due to huge excavation work in new CRM-3 area, this outfall cease to exist.

OCT'2019

Date of Monitoring	Name of the stream	Parameters (mg/l, except pH and temp.)									Flow rate m3/hr
		Temp. °C	pH	TSS	Phenol	Cyanide	BOD	COD	Amm. Nitrogen	O&G	
09.10.19	OF - 1	26.7	6.5	34	0.092	0.036	8.00	94	6.56	0.81	250
	OF - 2	26.1	7.4	32	0.044	0.014	6.82	85	1.82	0.72	350
	OF - 3	Abandoned									

NOV '2019

Date of Monitoring	Name of the stream	Parameters (mg/l, except pH and temp.)									Flow rate m3/hr
		Temp. °C	pH	TSS	Phenol	Cyanide	BOD	COD	Amm. Nitrogen	O&G	
13.11.19	OF - 1	22.0	7.0	20	0.089	0.017	7.62	60	4.12	0.48	250
	OF - 2	21.8	6.8	26	0.042	0.008	10.14	56	3.06	0.62	350
	OF - 3	Abandoned									

DEC'2019

Date of Monitoring	Name of the stream	Parameters (mg/l, except pH and temp.)									Flow rate m3/hr
		Temp. °C	pH	TSS	Phenol	Cyanide	BOD	COD	Amm. Nitrogen	O&G	
10.12.19	OF - 1	20.4	7.8	26	0.062	0.023	6.78	49	5.96	0.72	250
	OF - 2	21.8	6.7	30	0.015	0.009	6.92	58	1.86	0.44	350
	OF - 3	Abandoned									

JAN'2020

Date of Monitoring	Name of the stream	Parameters (mg/l, except pH and temp.)									Flow rate m3/hr
		Temp. °C	pH	TSS	Phenol	Cyanide	BOD	COD	Amm. Nitrogen	O&G	
07.01.2020	OF - 1	19.1	7.2	24	0.056	0.024	10.12	68	6.78	0.62	250
	OF - 2	18.8	7.4	26	0.042	0.008	8.86	38	3.96	0.48	350

FEB'2020

Date of Monitoring	Name of the stream	Parameters (mg/l, except pH and temp.)									Flow rate m3/hr
		Temp. °C	pH	TSS	Phenol	Cyanide	BOD	COD	Amm. Nitrogen	O&G	
15.02.2020	OF - 1	18.8	7.5	25	0.207	0.024	8.5	58	6.15	0.86	250
	OF - 2	19.2	7.44	24	0.026	0.016	6.5	42	2.23	0.54	350

MAR'2020

Date of Monitoring	Name of the stream	Parameters (mg/l, except pH and temp.)									Flow rate m3/hr
		Temp. °C	pH	TSS	Phenol	Cyanide	BOD	COD	Amm. Nitrogen	O&G	
11.03.2020	OF - 1	27.1	7.1	23	0.040	0.019	9.23	68	5.95	0.58	250
	OF - 2	26.8	6.6	20	0.032	0.012	7.30	45	0.98	0.48	350

Status of Sewage Treatment Plant (STP)

Standards : Temp.- Upto 40⁰C, pH -6.0-8.5, TSS- 100, Phenol- 1.0, Cyanide- 0.20, BOD- 30, COD- 250.

OCT'2019

Date	Time of Monitoring	Name of the STP	Quantity of the Effluent	Temp. ⁰ C	pH	TSS	BOD	COD	Fecal Coliform(FC),MPN /100ml	Remarks
19.10.19	12.20 pm	BGH	-	26.0	6.90	18	10.5	73	240	
	11.30 am	Dhandabra	-	24.8	7.70	16	12.6	90	290	
	11.00 am	Sector -6	-	25.7	7.68	16	10.5	96	350	
	10.35 am	Camp-2	-	26.3	7.56	19	19.7	156	380	
	10.15 am	Sector-12	-	25.2	7.32	15	13.2	100	310	

NOV '2019

Date	Time of Monitoring	Name of the STP	Quantity of the Effluent	Temp. ⁰ C	pH	TSS	BOD	COD	Fecal Coliform(FC),MPN /100ml	Remarks
21.11.19	12.20 pm	BGH	-	19.3	7.50	19	9.5	95	250	
	11.30 am	Dhandabra	-	19.6	7.50	22	12.4	63	280	
	11.00 am	Sector -6	-	19.7	7.30	35	10.6	54	300	
	10.35 am	Camp-2	-	20.7	7.63	38	11.4	43	270	
	10.15 am	Sector-12	-	21.1	7.54	47	10.0	40	310	

DEC'2019

Date	Time of Monitoring	Name of the STP	Quantity of the Effluent	Temp. ⁰ C	pH	TSS	BOD	COD	Fecal Coliform(FC),MPN /100ml	Remarks
17.12.19	12.20 pm	BGH	-	21.0	7.32	18	8.6	80	240	
	11.30 am	Dhandabra	-	20.8	7.12	16	10.2	78	270	
	11.00 am	Sector -6	-	21.6	7.86	24	11.4	75	310	
	10.35 am	Camp-2	-	21.8	7.52	23	14.52	60	240	
	10.15 am	Sector-12	-	20.8	7.14	27	10.5	56	290	

JAN'2020

Date	Time of Monitoring	Name of the STP	Quantity of the Effluent	Temp. °C	pH	TSS	BOD	COD	Fecal Coliform(FC),MPN /100ml	Remarks
24.01.2020	12.20 pm	BGH	-	18.1	6.41	19	11.5	70	250	
	11.30 am	Dhandabra	-	19.0	7.12	20	12.3	75	280	
	11.00 am	Sector -6	-	19.2	6.65	15	10.5	65	290	
	10.35 am	Camp-2	-	18.6	7.72	23	16.2	102	300	
	10.15 am	Sector-12	-	18.7	6.12	15	11.4	85	330	

FEB'2020

Date	Time of Monitoring	Name of the STP	Quantity of the Effluent	Temp. °C	pH	TSS	BOD	COD	Fecal Coliform(FC),MPN /100ml	Remarks
21.02.2020	12.20 pm	BGH	-	27.0	6.84	19	12.0	72	240	
	11.30 am	Dhandabra	-	27.1	7.00	17	13.8	82	310	
	11.00 am	Sector -6	-	27.2	6.96	20	10.6	61	300	
	10.35 am	Camp-2	-	27.3	7.22	21	15.9	115	280	
	10.15 am	Sector-12	-	26.6	7.30	16	11.5	82	270	

MAR'2020

Date	Time of Monitoring	Name of the STP	Quantity of the Effluent	Temp. °C	pH	TSS	BOD	COD	Fecal Coliform(FC),MPN /100ml	Remarks
12.03.20	12.20 pm	BGH	-	27.0	6.92	17	10.6	64	210	
	11.30 am	Dhandabra	-	26.8	7.06	20	12.1	51	290	
	11.00 am	Sector -6	-	27.5	7.11	18	11.6	60	280	
	10.35 am	Camp-2	-	27.3	7.29	15	14.2	90	260	
	10.15 am	Sector-12	-	27.4	6.90	16	13.5	86	320	