SAIL BOKARO STEEL PLANT
ENVIRONMENT CONTROL DEPARTMENT

Compliance to the conditions laid down by MoEF for issuing Environmental Clearance for the proposed Modernization / Expansion of Bokaro Steel Plant from 4.5 MT Hot metal to 7.5 MT hot metal. (4MT crude steel to 7.0 MT crude steel)

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:

Online Stack Monitoring system has been installed in all Coke Oven Batteries in operation. Battery No.1 &2 have been rebuilt. These are equipped with all pollution control facilities i.e. Charging emission control system, Pushing emission control system. Emission level in all working Coke oven Batteries are within stipulated norm of 50 mg/Nm3. In RMP Kiln 5 ,ESP has been revamped and working well and Online Stack Monitoring system has been installed. The refurbishing of all ESP's of remaining Kilns is in tendering process. Online Stack Monitoring system will be installed along with the revamping of the ESPs of RMP Kilns. Replacement of multi-cyclones in Sinter M/C by ESP's is under process. Battery cyclone # 6 has been successfully replaced by ESP # 6. The Stack emission level in joint venture Cement plant is well below 50 mg/nm3.

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 below stipulated norm.
- Emission in all stacks well below 50 mg/Nm3 stipulated norm.
- Fugitive Emission in all shops are within norm. .
- Coke Oven gas is being utilized fully and judiciously in BSL.
- Excess gas is being utilized in Power Plant. No quantity of gas is being flared.
- Rebuilding of Battery #7 has been started. Expected to be commissioned by Oct"2015.
- Battery #3& Battery #6 are under cold repair & hot repair respectively.
- Dry Fog dust suppression system have been installed in Coal Handling & Coke Sorting Plant of Coke ovens.

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:

Fugitive emission level in all shops of Bokaro Steel Plant is below standard norm. The fugitive emission level in different areas of the Plant is monitored regularly and its report is sent to CPCB every month, including BF & SP. Though the fugitive emission level at different sections of SMS is within norm, BSL is going for the installation of secondary

emission control system in SMS II for further reduction of dust level. The Work order is expected to be issued by Aug'2014.

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 are transported in railway wagons and products are also transported either by rails or by road. Even the granulated BF slag is transported by trucks after properly covering it with tarpaulin/ plastic sheets.

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:

The new shops that will coming up during modernization / expansion project are designed for zero discharge. The total quantity of effluent generated will be treated and recycled in the operation.

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:

Total quantity of waste water discharged through all three outfalls and sewage treatment plant will be treated and recycled for plant operation. SAIL/BSL is going for zero discharge of plant as well as Township sewage after treatment will be recycled. OF-1 & OF-2 plant effluent will be treated & recycled for plant operation. TS for the Treatment & Recycling of OF-1& OF-2 is expected by the end of June'2014. Technology for the treatment & Recycling of Township sewage has been freezed. However through in house efforts part recycling of Outfall-I,IIA &IIB is being done by Water Management Team of BSL. The Specific Water consumption for the period was 4.46 m^3/Tcs. Total treated BOD plant water is being used for coke quenching.

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

Status:

The initiative for procurement of TOC Analyser for the installation of continuous (TOC) monitoring equipment at (ETP) BOD Plant outlet has been started. Quotation from the reputed firms have been received. Procurement Action is in process.

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:

At present BSL is having facility of (CHSGP) on line cast house slag granulation in BF 4 and BF 5, CHSGP#3 of BF-2 & CHSGP #6 of BF-3. CHSGP #4 of BF-2 & CHSGP#5 of

BF-3 are expected to be commissioned by end of July'2014. CHSGP-1 & CHSGP-2 of BF#1 are expected to be commissioned along with the commissioning of BF#1 which is presently under capital repair. During October'2013 to March'2014 the BF Slag utilization including land filling was around 99.8%. After the commissioning of all CHSGP'S in BSL 100% BF Slag granulation would be achieved. A new joint venture Cement Plant of 2.1 MT capacity has been commissioned. Total BF slag granulated is being used for cement making in this plant As far as SMS slag is concerned its utilization in the period from October'2013 to March'2014 was 82.5 %. Total quantity of all other solid wastes such as, coke breeze, BF flue dust, lime dust, mill scales are being utilized in Sinter Plant for sinter making.

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

Status:

Total solid waste utilization during current financial year 2013-14 was 96.06%. However, after completion of modernization /expansion project total solid waste utilization is expected to be around 100%.

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

Status:

Low grade lime and other solid wastes such as SMS slag, BF flue dust, ESP lime dust, and Mill scale are being used in Sinter Plant. BSL has developed a Fly ash + LD slag brick. Its strength is meeting IS code. BSL has planned to utilize these bricks first in its own projects.

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

Status:

Fly Ash management at Bokaro is being done by M/S BPSCL(A joint venture power company) is under MOU with BCCL for back filling of Dhori Abandoned mines by Fly Ash. A work shop was organized jointly by M/s BPSCL & JSPCB for proper utilization of Fly Ash. As a proactive measure the use of Fly Ash Brick has been made mandatory in the construction work in both projects as well as works.

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

Status:

The existing plantations are being strengthened to increase density. Till date BSL has planted around (4148952) Forty one lakh forty eight thousand nine hundred fifty two trees in and outside Bokaro Steel Plant. At present total green cover is around 33%.

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. Cold repair of Batt #4 & Hot repair of Batt#5 have been completed. Rebuilding of Batt #7 has been started. Hot repair of Batt#6 has also been started. Battery rebuilding at Bokaro is ahead of CREP schedule.
c. Fugitive emission in SMS are of BSL are within norm.

d. LD slag utilization in the stipulated period was more than 82.5%
e. BF slag utilization is around 99.8% (including land filling). It is expected to be 100% after CHSGP installation in BF1, BF 2 and BF 3.
f. CDI facility is available in BF-2, BF-3, BF- 4 and BF- 5.
CTI facility is available in BF 1
g. The average specific water consumption for the period is 4.46 m^3/tcs which is below CREP norm.
h. Phenol & ammonia content in BOD Plant effluent is below stipulated norm.
All pollution control equipment are being monitored closely and compliance quarterly reports sent to CPCB as per CREP guidelines.

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 on 18.3.2008 are being complied with

- Continuous Ambient Air Quality Monitoring Station has been installed & commissioned. Its data signal has been uplinked to CPCB & JSPCB server.
- Seven ambient air quality monitoring stations have been installed. All twelve parameters as per new Notification are being monitored since March'2014.
- Stack emission level in all shops is below stipulated norm.
- Noise level at different locations in almost all the shops below norm.
- All the roads are regularly maintained.
- Proposal for vehicular pollution monitoring system has already been initiated.
- In SP ESP# 6 has been commissioned.
- Around 33700 new saplings have been planted during 2013-14 .
- Dry fog dust suppression system has been installed in Coal Handling and coke sorting plant of Coke Oven Department.

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 funds allocated for pollution control equipment are being utilized judiciously.

- Dry fog dust suppression system has been installed in BF 1, BF 2 & the same has been installed in Coal Handling Plant and Coke Sorting Plant of Coke Oven department.
- All ESP of RMP Kilns are to be revamped. ESP of Kiln-5 has already been revamped.
- Multi-cyclones in Sinter Plant are being replaced by Electro Static Precipitator.
- CHSGP in BF1, BF-2 and BF-3 are to be installed by Dec'2014.
- Zero discharge of plant effluent as well as sewage effluent is to be maintained.
- New shops that will come up after modernization will have zero discharge facility. Construction of ETP in CRM# 3 has already been started by M/s Voltas. Expected to be commissioned by July'2014.

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:

All the facilities have been provided to the construction workers.
Housing, Drinking water, toilets medical and other basic amenities are being provided.
A Crèche has been commissioned for the children of female contract labourer.

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.

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

Status:

BSL is committed to its expansion plan from 4 MT crude steel per annum to 7 MT crude steel per annum, for which Environmental Clearance has been obtained. This environmental compliance report is pertaining to that Environmental Clearance. 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 and JSPCB. It is monitored regularly and its report is sent regularly to CPCB & JSPCB.

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 NOx 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. It is monitored regularly for PM_{10}, $PM_{2.5}$, SO_2, NO_2, O_3, NH_3, B(a)P,CO, Pb , As &Ni since March'2014. This report is being sent to CPCB every month. Ambient Air Quality monitoring report of stipulated period has been enclosed. A Continuous Ambient Air Quality Station has 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 asphalting or concreting of the roads shall be done to control fugitive emissions.

Status:

Fugitive emissions from Coke Oven Batteries are monitored regularly. PLD, PLL and PLO level in all Coke Oven Batteries are well within stipulated norm. Its report is also regularly sent to CPCB every month. Water is regularly sprinkled to suppress fugitive emission at different dusty areas including coal stock piles. Work order is to be issued for installation of secondary dust emission control system at SMS-2. Dry fog dust suppression system has been commissioned in BF # 1, 2 and coke shorting plant, Coal Handling plant in coke ovens. ESP based de dusting system has been installed in cast house of BF#2.

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 is collected and treated in ETP (BOD) Plant. All the pollutant level after treatment are well within stipulated norm. This water is being used for quenching of coke. The effluents from all other plants are being treated prior to disposal.

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 level in various areas are being monitored regularly. Noise level in almost all areas are below stipulated norm. The provision of snort valve in BF & acoustic enclosures in Oxygen plant are there the 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. It 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 Occupational Health Service Centre inside the Plant. The health status record is regularly maintained by them.

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:

A project for Rain Water Harvesting has been taken up in CRM#2 complex. Consultancy job for this project has been completed by M/S IIT Kharagpur.FR/TS has been prepared by Design Bureau. The project is expected to be commissioned by December'2014. The project division has been instructed for the inclusion of Rain Water Harvesting facility in all new upcoming building & structures.

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 eight villages near its 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 village adopted by BSL, However there is a Sarva Swasthya Kendra for free treatment of Non-entitled people..
- Drinking water facility such as hand pumps have 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.

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:
BSL is committed to send six monthly compliance reports are regularly sent to CPCB/JSPC regularly monitors the compliance of EC.

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 Deptt. had informed the public by giving advertisement in two local daily within seven days of getting the Environment Clearance from MoEF.

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.

ENCLOSURES:

STACK EMISSION

OCT'2013

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	6	7	8	9				
Blast Furnace (Space dedusting) & Stoves								**Particulate matter (PM)** (mg/Nm^3)	**SO_2** (mg/Nm^3)	**NO_x** (mg/Nm^3)	**HC**	**CO** Kg/TDCP
BF-1	Chimney-1	50 mtr.	8.2mtrs.	Wet scruber	-	-	-	-				
BF-2	Chimney-2	50 mtr.	8.2mtrs.	Wet scruber	05.10.13	5817 T/DAY	248136	76.25				
BF-3	Chimney-2	50 mtr.	8.2mtrs.	Wet scruber					-	-	-	-
BF-4	Chimney-3	50 mtr.	8.2mtrs.	Wet scruber	18.10.13	5636 T/DAY	259207	80.14				
BF-5	Chimney-3	50 mtr.	8.2mtrs.	Wet scruber					-	-	-	-
BF Stoves	Chimney-5	70 mtr.	3.5mtrs.	-	25.10.13	3311 T/DAY	104236	29.78	34.75	30.43	-	-
Standards : Charging side chimney- PM - 100 (Units: mg/Nm^3) **BF Stoves – PM- 50 mg/Nm3, SO2- 250 mg/Nm3, NOX- 150 mg/Nm3**												
Refractory Material plant												
Kiln-1	Stack – 1	80 mtr.	3.3mtrs	ESP's	07.10.13	11.25 T/hr	158762	146.86	92.16	-	-	-
Kiln-2	Stack – 1	80 mtr.	3.3mtrs	ESP's								
Kiln-3	Stack – 2	80 mtr.	3.3mtrs	ESP's								
Kiln-4	Stack – 2	80 mtr.	3.3mtrs	ESP;s	03.10.13	10.70 T/hr	143256	140.62	71.52	-	-	-
Kiln-5	Stack – 3	80 mtr.	3.3mtrs	ESP's	30.10.13	9.17 T/hr	143625	128.14	88.37	-	-	-
Kiln-6	Stack – 3	80 mtr.	3.3mtrs	ESP's								

Standards : PM - 150 , SO2 - , NOx - , CO - (Units: mg/Nm^3)

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

- 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.

SMS – 1 (Process)												
Conv. – 1 (BL)	Stack – 1	100 m	4.3mtrs	Wet scruber								
Conv. – 1 (NB)	Stack – 1	100 m	4.3mtrs	Wet scruber								
Conv. – 3 (NB)	Stack – 1	100m	4.3mtrs	Wet scruber								
Conv. – 3 (BL)	Stack – 1	100 m	4.3mtrs	Wet scruber	10.10.13	-	240262	174.51	86.28	25.81		
Conv. – 4 (BL)	Stack – 1	100 m	4.3mtrs	Wet scruber	08.10.13	-	232625	165.78	79.16	30.15	-	-
Conv. – 4(NB)	Stack – 1	100m	4.3mtrs	Wet scruber	08.10.13	-	130156	33.0	-	-		
Conv. – 5(BL)	Stack – 1	100 m	4.3mtrs	Wet scruber	28.10.13	-	226717	168.11	90.86	40.11		
SMS-2/CCS	LF-1	80m	1.25m	Bag filter	17.10.13	-	105621	16.11	-	-	-	-

Standards : PM - 300, SO2 - , NOx - , CO - * Monitored in individual ducts(of dia 2.5 m each) from corresponding converters. SMS-2/CCS Stack -PM #50mg/Nm3 **(Units: mg/Nm^3)** All ducts are connected to a common stack

Coke Oven												
Batt. # 1	Stack – 1	100 m.	3.5mtrs	-	02.10.13	-	149627	33.64	152.35	23.70	-	2.11
Batt. # 2	Stack – 2	100 m.	3.5mtrs		12.10.13	-	148317	27.51	189.60	38.87	-	2.26
Batt. # 3	Stack – 3	100 m.	3.5mtrs	-	15.10.13	-	152716	38.79	206.76	36.45	-	2.78
Batt. # 4	Stack – 4	100 m.	TAKEN UNDER SHUTDOWN									
Batt. # 5	Stack – 5	100 m.	3.5mtrs	-	24.10.13	-	155674	43.73	256.72	40.86	-	2.46
Batt # 6	Stack - 6	100 m.	3.5 mts	-	31.10.13	-	140256	46.78	190.62	35.39	-	2.79
Batt. # 7	Stack – 7	100 m.	3.5mtrs	TAKEN UNDER SHUTDOWN								
Batt. # 8	Stack – 8	100 m.	3.5mtrs	-	21.10.13	-	149458	46.17	179.67	42.82	-	2.77

Standards : PM - 50, SO2 - 800, NOx - 500, CO – 3.00 Kg/TDCP, HC - (Units: mg/Nm^3)

Sinter Plant												
SM-1	Duct-A	100 m.*	3.5mtrs	Batt. cyclone	23.10.13	-	401463.5	165.65	96.16	36.45	-	-
	Duct-B		3.5mtrs	Batt. cyclone	23.10.13	-	409216.2	164.17	92.11	-	-	-
SM-2	Duct-A		3.5mtrs	Batt. cyclone	09.10.13	-	421623.7	179.88	88.62	46.81	-	-
	Duct-B		3.5mtrs	Batt. cyclone	09.10.13	-	415672.1	172.37	97.54	-	-	-
SM-3	Duct-A		3.5mtrs	Batt. cyclone	19.10.13	-	448176.5	160.74	78.15	29.11	-	-
	Duct-B		3.5mtrs	ESP-6	19.10.13	-	361265.4	30.88	72.26	-	-	-

Standards : PM - 150 , SO2 - , NOx - (Units: mg/Nm^3)

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

NOV'2013

STACK EMISSION

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**	**6**	**7**	**8**	**9**				
Blast Furnace (Space dedusting) & Stoves								**Particulate matter (PM)** (mg/Nm^3)	**SO_2** (mg/Nm^3)	**NO_x** (mg/Nm^3)	**HC**	**CO** Kg/TDCP
BF-1	Chimney-1	50 mtr.	8.2mtrs.	Wet scruber	-	-	-	-				
BF-2	Chimney-2	50 mtr.	8.2mtrs.	Wet scruber								
BF-3	Chimney-2	50 mtr.	8.2mtrs.	Wet scruber	20.11.13	6990 T/DAY	242242	76.42	-	-	-	-
BF-4	Chimney-3	50 mtr.	8.2mtrs.	Wet scruber								
BF-5	Chimney-3	50 mtr.	8.2mtrs.	Wet scruber	28.11.13	5477 T/DAY	256108	79.82	-	-	-	-
BF Stoves	Chimney-2	70 mtr.	3.5mtrs.	-	05.11.13	3360 T/DAY	102143	24.14	38.46	28.52	-	-

Refractory Material plant												
Kiln-1	Stack – 1	80 mtr.	3.3mtrs	ESP's						-	-	-
Kiln-2	Stack – 1	80 mtr.	3.3mtrs	ESP's	11.11.13	11.04 T/hr	146826	144.42	88.48			
Kiln-3	Stack – 2	80 mtr.	3.3mtrs	ESP's	26.11.13	11.36 T/hr	159343	142.63	92.16			
Kiln-4	Stack – 2	80 mtr.	3.3mtrs	ESP;s								
Kiln-5	Stack – 3	80 mtr.	3.3mtrs	ESP's	02.11.13	10.42 T/hr	148326	138.12	86.26	-	-	-
Kiln-6	Stack – 3	80 mtr.	3.3mtrs	ESP's								

SMS – 1 (Process)												
Conv. – 1 (BL)	Stack – 1	100 m	4.3mtrs	Wet scruber								
Conv. – 2 (NB)	Stack – 1	100 m	4.3mtrs	Wet scruber	13.11.13		128416	24.26				
Conv. – 2 (BL)	Stack – 1	100m	4.3mtrs	Wet scruber	13.11.13		226886	178.62	92.46	22.46		
Conv. – 3 (BL)	Stack – 1	100 m	4.3mtrs	Wet scruber	30.11.13	-	239019	182.46	86.26	15.60		
Conv. – 4 (BL)	Stack – 1	100 m	4.3mtrs	Wet scruber	25.11.13	-	240426	166.52	82.64	24.83	-	-
Conv. – 5(BL)	Stack – 1	100m	4.3mtrs	Wet scruber	18.11.13	-	226072	172.12	78.36	18.40		
SMS-2/CCS	LF-1	80m	1.25m	Bag filter	29.11.13	-	101826	18.26	-	-	-	-

Coke Oven												
Batt. # 1	Stack – 1	100 m.	3.5mtrs	-	12.11.13	-	148758	28.52	142.46	36.24	-	2.01
Batt. # 2	Stack – 2	100 m.	3.5mtrs		01.11.13	-	146843	22.44	130.29	39.47	-	2.12
Batt. # 3	Stack – 3	100 m.	3.5mtrs	-	19.11.13	-	156924	49.86	164.29	28.86	-	2.82
Batt. # 4	Stack – 4	100 m.	TAKEN UNDER SHUTDOWN									
Batt. # 5	Stack – 5	100 m.	3.5mtrs	-	08.11.13	-	164205	48.23	168.23	55.91	-	2.32
Batt # 6	Stack - 6	100 m.	3.5 mts	-	27.11.13	-	162774	47.86	172.55	48.52	-	2.84
Batt. # 7	Stack – 7	100 m.	3.5mtrs	TAKEN UNDER SHUTDOWN								
Batt. # 8	Stack – 8	100 m.	3.5mtrs	-	29.11.13	-	158146	38.48	176.20	40.48	-	2.68

Sinter Plant												
SM-1	Duct-A	100 m.*	3.5mtrs	Batt. cyclone	04.11.13	-	467393	169.46	102.46	58.20	-	-
	Duct-B		3.5mtrs	Batt. cyclone	04.11.13	-	459862	166.76	110.26	-	-	-
SM-2	Duct-A		3.5mtrs	Batt. cyclone	22.11.13	-	428468	171.62	96.88	38.26	-	-
	Duct-B		3.5mtrs	Batt. cyclone	22.11.13	-	419468	168.58	98.26	-	-	-
SM-3	Duct-A		3.5mtrs	Batt. cyclone	16.11.13	-	401768	159.26	82.26	22.46	-	-
	Duct-B		3.5mtrs	ESP-6	16.11.13	-	362463	34.46	79.26	-	-	-

EC'2013

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	6	7	8	9				
Blast Furnace (Space dedusting) & Stoves								**Particulate matter (PM)** (mg/Nm^3)	**SO_2** (mg/Nm^3)	**NO_x** (mg/Nm^3)	**HC**	**CO** Kg/TDCP
BF-1	Chimney-1	50 mtr.	8.2mtrs.	Wet scruber	-	-	-	-				
BF-2	Chimney-2	50 mtr.	8.2mtrs.	Wet scruber	19.12.13	6625 T/day	236711	79.19	-	-	-	-
BF-3	Chimney-2	50 mtr.	8.2mtrs.	Wet scruber					-	-	-	-
BF-4	Chimney-3	50 mtr.	8.2mtrs.	Wet scruber	14.12.13	5714 T/DAY	227626	74.09	-	-	-	-
BF-5	Chimney-3	50 mtr.	8.2mtrs.	Wet scruber					-	-	-	-
BF Stoves	Chimney-3	70 mtr.	3.5mtrs.	-	28.12.13	921 T/DAY	100579	20.76	-	-	-	-

Refractory Material plant												
Kiln-1	Stack – 1	80 mtr.	3.3mtrs	ESP's	03.12.13	10.43 T/hr	152652	136.78	69.15	-	-	-
Kiln-2	Stack – 1	80 mtr.	3.3mtrs	ESP's	27.12.13	11.05 T/hr	165134	142.6	63.86			
Kiln-3	Stack – 2	80 mtr.	3.3mtrs	ESP's								
Kiln-4	Stack – 2	80 mtr.	3.3mtrs	ESP;s	17.12.13	11.3 T/hr	162659	145.61	91.66			
Kiln-5	Stack – 3	80 mtr.	3.3mtrs	ESP's						-	-	-
Kiln-6	Stack – 3	80 mtr.	3.3mtrs	ESP's								

SMS – 1 (Process)												
Conv. – 1 (BL)	Stack – 1	100 m	4.3mtrs	Wet scruber								
Conv. – 4 (NB)	Stack – 1	100 m	4.3mtrs	Wet scruber	09.12.13		110625	26.81	-	-	-	-
Conv. – 2	Stack – 1	100m	4.3mtrs	Wet scruber								
Conv. – 3 (BL)	Stack – 1	100 m	4.3mtrs	Wet scruber	02.12.13	-	199668	196.61	55.80	26.25		
Conv. – 4 (BL)	Stack – 1	100 m	4.3mtrs	Wet scruber	09.12.13	-	223400	225.26	68.63	32.39		-
Conv. – 5(BL)	Stack – 1	100m	4.3mtrs	Wet scruber	23.12.13	-	206123	209.76	71.43	25.17		
SMS-2/CCS	LF-1	80m	1.25m	Bag filter	30.12.13	-	112654	21.75	-	-	-	-

Coke Oven												
Batt. # 1	Stack – 1	100 m.	3.5mtrs	-	07.12.13	-	160177	29.78	201.42	50.66	-	2.08
Batt. # 2	Stack – 2	100 m.	3.5mtrs		16.12.13	-	159715	30.38	252.61	48.89	-	2.16
Batt. # 3	Stack – 3	100 m.	3.5mtrs	-	TAKEN UNDER SHUTDOWN							
Batt. # 4	Stack – 4	100 m.	TAKEN UNDER SHUTDOWN									
Batt. # 5	Stack – 5	100 m.	3.5mtrs	-	11.12.13	-	155624	44.19	165.12	40.34	-	2.39
Batt # 6	Stack - 6	100 m.	3.5 mts	-	25.12.13	-	148234	42.86	198.80	55.78	-	2.45
Batt. # 7	Stack – 7	100 m.	3.5mtrs	TAKEN UNDER SHUTDOWN								
Batt. # 8	Stack – 8	100 m.	3.5mtrs	-	05.12.13	-	142960	46.70	196.77	48.71	-	2.60

Sinter Plant												
SM-1	Duct-A	100 m.*	3.5mtrs	Batt. cyclone	06.12.13	-	451623	165.11	89.21	36.35	-	-
	Duct-B		3.5mtrs	Batt. cyclone	06.12.13	-	448261	171.80	86.27	-	-	-
SM-2	Duct-A		3.5mtrs	Batt. cyclone	13.12.13	-	416268	175.51	73.67	25.27	-	-
	Duct-B		3.5mtrs	Batt. cyclone	13.12.13	-	409621	169.73	80.14	-	-	-
SM-3	Duct-A		3.5mtrs	Batt. cyclone	26.12.13	-	401724	160.35	94.62	22.56	-	-
	Duct-B		3.5mtrs	ESP-6	26.12.13	-	334562	39.11	76.14	-	-	-

JAN'2014

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**	**6**	**7**	**8**	**9**				
Blast Furnace (Space dedusting) & Stoves								**Particulate matter (PM)** (mg/Nm^3)	**SO_2** (mg/Nm^3)	**NO_x** (mg/Nm^3)	**HC**	**CO** Kg/TDCP
BF-1	Chimney-1	50 mtr.	8.2mtrs.	Wet scruber	-	-	-	-				
BF-2	Chimney-2	50 mtr.	8.2mtrs.	Wet scruber					-	-	-	-
BF-3	Chimney-2	50 mtr.	8.2mtrs.	Wet scruber	03.01.14	6604 T/DAY	242581	70.65	-	-	-	-
BF-4	Chimney-3	50 mtr.	8.2mtrs.	Wet scruber								
BF-5	Chimney-3	50 mtr.	8.2mtrs.	Wet scruber	17.01.14	5747 T/DAY	255446	73.66	-	-	-	-
BF Stoves	Chimney-4	70 mtr.	3.5mtrs.	-	27.01.14	3314 T/DAY	109256	32.84	50.6	29.18	-	-

Refractory Material plant												
Kiln-1	Stack – 1	80 mtr.	3.3mtrs	ESP's	07.01.14	10.98 T/hr	179861	148.25	92.61	-	-	-
Kiln-2	Stack – 1	80 mtr.	3.3mtrs	ESP's	01.01.14	10.9 T/hr	168326	138.62	101.74	-	-	-
Kiln-3	Stack – 2	80 mtr.	3.3mtrs	ESP's	-	-	-	-	-			
Kiln-4	Stack – 2	80 mtr.	3.3mtrs	ESP;s	-	-	-	-	-			
Kiln-5	Stack – 3	80 mtr.	3.3mtrs	ESP's	16.01.14	10.0 T/hr	162016	128.11	88.26	-	-	-
Kiln-6	Stack – 3	80 mtr.	3.3mtrs	ESP's	22.01.14	10.83 T/hr	158664	141.55	80.39	-	-	-

SMS – 1 (Process)												
Conv. – 1 (BL)	Stack – 1	100 m	4.3mtrs	Wet scruber								
Conv. – 4 (NB)	Stack – 1	100 m	4.3mtrs	Wet scruber					-	-	-	-
Conv. – 2 (BL)	Stack – 1	100m	4.3mtrs	Wet scruber	01.01.14		205106	222.58	108.63	40.81		
Conv. – 3 (BL)	Stack – 1	100 m	4.3mtrs	Wet scruber	14.01.14	-	199863	219.76	120.11	30.15		
Conv. – 5 (NB)	Stack – 1	100 m	4.3mtrs	Wet scruber	08.01.14	-	120621	32.48	-	-		-
Conv. – 5(BL)	Stack – 1	100m	4.3mtrs	Wet scruber	08.01.14	-	255324	264.96	146.32	37.19		
SMS-2/CCS	LF-2	80m	1.25m	Bag filter	18.01.14	-	115278	26.45	-	-	-	-

Coke Oven												
Batt. # 1	Stack – 1	100 m.	3.5mtrs	-	09.01.14	-	142129	32.98	154.62	29.40	-	
Batt. # 2	Stack – 2	100 m.	3.5mtrs		24.01.14	-	150620	23.69	198.84	46.10	-	
Batt. # 3	Stack – 3	100 m.	3.5mtrs	-	TAKEN UNDER SHUTDOWN							
Batt. # 4	Stack – 4	100 m.	COMMISSIONED ON 31.01.14									
Batt. # 5	Stack – 5	100 m.	3.5mtrs	-	15.01.14	-	152627	43.77	226.28	50.79	-	
Batt # 6	Stack - 6	100 m.	3.5 mts	-	04.01.14	-	151626	44.56	281.73	78.11	-	
Batt. # 7	Stack – 7	100 m.	3.5mtrs	TAKEN UNDER SHUTDOWN								
Batt. # 8	Stack – 8	100 m.	3.5mtrs	-	29.01.14	-	150128	45.92	201.55	48.89	-	

Sinter Plant												
SM-1	Duct-A	100 m.*	3.5mtrs	Batt. cyclone	11.01.14	-	371105	171.65	99.86	41.25	-	-
	Duct-B		3.5mtrs	Batt. cyclone		-	385799	165.23	105.72	-	-	-
SM-2	Duct-A		3.5mtrs	Batt. cyclone	28.01.14	-	410562	169.16	79.81	36.52	-	-
	Duct-B		3.5mtrs	Batt. cyclone		-	409861	176.41	76.26	-	-	-
SM-3	Duct-A		3.5mtrs	Batt. cyclone	23.01.14	-	419973	159.62	90.14	39.29	-	-
	Duct-B		3.5mtrs	ESP-6		-	306263	38.81	75.16	-	-	-

FEB'2014

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**	**6**	**7**	**8**	**9**				
Blast Furnace (Space dedusting) & Stoves								**Particulate matter (PM)** (mg/Nm^3)	**SO_2** (mg/Nm^3)	**NO_x** (mg/Nm^3)	**HC**	**CO** Kg/TDCP
BF-1	Chimney-1	50 mtr.	8.2mtrs.	Wet scruber	-	-	-	-				
BF-2	Chimney-2	50 mtr.	8.2mtrs.	Wet scruber					-	-	-	-
BF-3	Chimney-2	50 mtr.	8.2mtrs.	Wet scruber	01.02.14	6227 T/DAY	251779	72.65	-	-	-	-
BF-4	Chimney-3	50 mtr.	8.2mtrs.	Wet scruber	19.02.14	6242 T/DAY	260192	71.19				
BF-5	Chimney-3	50 mtr.	8.2mtrs.	Wet scruber					-	-	-	-
BF Stoves	Chimney-5	70 mtr.	3.5mtrs.	-	24.02.14	3733 T/DAY	121672	38.18	48.62	26.72	-	-

Refractory Material plant												
Kiln-1	Stack – 1	80 mtr.	3.3mtrs	ESP's	20.02.14	10.42 T/hr	175089	141.35	121.49	-	-	-
Kiln-2	Stack – 1	80 mtr.	3.3mtrs	ESP's	14.02.14	10.83 T/hr	186005	129.60	82.12	-	-	-
Kiln-3	Stack – 2	80 mtr.	3.3mtrs	ESP's	21.02.14	10.0T/hr	172652	136.56	112.63			
Kiln-4	Stack – 2	80 mtr.	3.3mtrs	ESP;s								
Kiln-5	Stack – 3	80 mtr.	3.3mtrs	ESP's						-	-	-
Kiln-6	Stack – 3	80 mtr.	3.3mtrs	ESP's	04.02.14	10.9 T/hr	161567	140.82	96.52	-	-	-

SMS – 1 (Process)												
Conv. – 1 (BL)	Stack – 1	100 m	4.3mtrs	Wet scruber								
Conv. – 4 (NB)	Stack – 1	100 m	4.3mtrs	Wet scruber					-	-	-	-
Conv. – 3	Stack – 1	100m	4.3mtrs	Wet scruber	15.02.14	-	220516	236.66	117.16	30.43		
Conv. – 4 (BL)	Stack – 1	100 m	4.3mtrs	Wet scruber	12.02.14	-	252287	194.95	92.05	28.12		
Conv. – 4 (NB)	Stack – 1	100 m	4.3mtrs	Wet scruber	12.02.14	-	130569	23.63	-	-		-
Conv. – 5(BL)	Stack – 1	100m	4.3mtrs	Wet scruber	28.02.14	-	242623	261.05	81.17	18.27		
SMS-2/CCS	LF-1	80m	1.25m	Bag filter	25.02.14	-	107621	21.02	-	-	-	-

Coke Oven												
Batt. # 1	Stack – 1	100 m.	3.5mtrs	-	10.02.14	-	139629	24.43	105.62	30.85	-	
Batt. # 2	Stack – 2	100 m.	3.5mtrs		13.02.14	-	144567	30.11	205.20	29.81	-	
Batt. # 3	Stack – 3	100 m.	3.5mtrs	-	TAKEN UNDER SHUTDOWN FOR COLD REPAIR							
Batt. # 4	Stack – 4	100 m.	COMMISSIONED ON 31.01.14									
Batt. # 5	Stack – 5	100 m.	3.5mtrs	-	03.02.14	-	154303	43.20	171.61	34.30	-	
Batt # 6	Stack - 6	100 m.	3.5 mts	-	27.02.14	-	156281	45.42	185.21	22.90	-	
Batt. # 7	Stack – 7	100 m.	3.5mtrs	TAKEN UNDER SHUTDOWN FOR REBUILDING								
Batt. # 8	Stack – 8	100 m.	3.5mtrs	-	06.02.14	-	146338	44.32	146.79	46.27	-	

Sinter Plant												
SM-1	Duct-A	100 m.*	3.5mtrs	Batt. cyclone	17.02.14	-	410265	180.11	88.35	31.60	-	-
	Duct-B		3.5mtrs	Batt. cyclone	17.02.14	-	399851	176.24	-	-	-	-
SM-2	Duct-A		3.5mtrs	Batt. cyclone	26.02.14	-	426251	160.79	78.79	36.86		-
	Duct-B		3.5mtrs	Batt. cyclone	26.02.14	-	431057	168.64	-	-	-	-
SM-3	Duct-A		3.5mtrs	Batt. cyclone	18.02.14	-	454736	185.73	54.10	42.31	-	-
	Duct-B		3.5mtrs	ESP-6	18.02.14	-	321562	36.95	-	-	-	-

MAR'2014

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**	**6**	**7**	**8**	**9**				
Blast Furnace (Space dedusting) & Stoves								**Particulate matter (PM)** (mg/Nm^3)	**SO_2** (mg/Nm^3)	**NO_x** (mg/Nm^3)	**HC**	**CO** Kg/TDCP
BF-1	Chimney-1	50 mtr.	8.2mtrs.	Wet scruber	-	-	-	-				
BF-2	Chimney-2	50 mtr.	8.2mtrs.	Wet scruber	17.03.14	7415T/day	264241	69.94	-	-	-	-
BF-3	Chimney-2	50 mtr.	8.2mtrs.	Wet scruber					-	-	-	-
BF-4	Chimney-3	50 mtr.	8.2mtrs.	Wet scruber	21.03.14	6141T/day	250626	74.76				
BF-5	Chimney-3	50 mtr.	8.2mtrs.	Wet scruber					-	-	-	-
BF Stoves-2	Chimney-2	70 mtr.	3.5mtrs.	-	28.03.14	5006T/day	131629	35.18	27.34	28.76	-	-

Refractory Material plant												
Kiln-1	Stack – 1	80 mtr.	3.3mtrs	ESP's						-	-	-
Kiln-2	Stack – 1	80 mtr.	3.3mtrs	ESP's	22.03.14	10.51T/hr	162167	141.62	88.87	-	-	-
Kiln-3	Stack – 2	80 mtr.	3.3mtrs	ESP's	01.03.14	9.98T/hr	159343	148.23	92.16			
Kiln-4	Stack – 2	80 mtr.	3.3mtrs	ESP;s	11.03.14	10.62T/hr	155482	139.87	110.07			
Kiln-5	Stack – 3	80 mtr.	3.3mtrs	ESP's	29.03.14	11.05T/hr	163674	132.62	108.94	-	-	-
Kiln-6	Stack – 3	80 mtr.	3.3mtrs	ESP's						-	-	-

SMS – 1 (Process)												
Conv. – 1 (BL)	Stack – 1	100 m	4.3mtrs	Wet scruber								
Conv. – 2 (NB)	Stack – 1	100 m	4.3mtrs	Wet scruber					-	-	-	-
Conv. – 3(BL)	Stack – 1	100m	4.3mtrs	Wet scruber	15.03.14	-	244908	263.13	87.35	37.49		
Conv. – 4 (BL)	Stack – 1	100 m	4.3mtrs	Wet scruber	07.03.14	-	250126	239.14	90.87	45.36		
Conv. – 5 (NB)	Stack – 1	100 m	4.3mtrs	Wet scruber	05.03.14	-	116677	26.05	-	-		-
Conv. – 5(BL)	Stack – 1	100m	4.3mtrs	Wet scruber	05.03.14	-	247870	176.00	72.79	41.32		
SMS-2/CCS	LF-2	80m	1.25m	Bag filter	20.03.14	-	112152	18.75	-	-	-	-

Coke Oven												
Batt. # 1	Stack – 1	100 m.	3.5mtrs	-	10.03.14	-	141056	29.11	161.60	38.85	-	2.34
Batt. # 2	Stack – 2	100 m.	3.5mtrs		24.03.14	-	134752	37.50	154.58	41.32	-	2.43
Batt. # 3	Stack – 3	100 m.	3.5mtrs	-	TAKEN UNDER SHUTDOWN FOR COLD REPAIR							-
Batt. # 4	Stack – 4	100 m.	3.5 mtrs	-	18.03.14	-	130559	31.25	117.51	32.65	-	2.58
Batt. # 5	Stack – 5	100 m.	3.5mtrs	-	26.03.14	-	133456	40.51	217.37	61.49	-	2.76
Batt # 6	Stack - 6	100 m.	3.5 mts	-	03.03.14	-	120615	47.12	92.99	53.77	-	2.98
Batt. # 7	Stack – 7	100 m.	3.5mtrs	TAKEN UNDER SHUTDOWN FOR REBUILDING								-
Batt. # 8	Stack – 8	100 m.	3.5mtrs	-	31.03.14	-	137216	47.85	185.16	33.51	-	2.88

Sinter Plant												
SM-1	Duct-A	100 m.*	3.5mtrs	Batt. cyclone	14.03.14	-	401526	165.11	105.62	36.92	-	-
	Duct-B		3.5mtrs	Batt. cyclone	14.03.14	-	398128	167.85	-	-	-	-
SM-2	Duct-A		3.5mtrs	Batt. cyclone	08.03.14	-	435625	169.23	89.11	46.24		-
	Duct-B		3.5mtrs	Batt. cyclone	08.03.14	-	448425	172.60	-	-	-	-
SM-3	Duct-A		3.5mtrs	Batt. cyclone	25.03.14	-	439421	163.75	75.34	30.85	-	-
	Duct-B		3.5mtrs	ESP-6	25.03.14	-	340529	36.96	-	-	-	-

Ambient Air Quality and fugitive emissions

OCT'2013

a. Ambient Air Quality (AAQ)

(All Ambient Air Quality Station)

S. No	Location of the Station	Date	Parameters (as applicable)							
			PM_{10}	$PM_{2.5}$	SO_2	NO_2	NH_3	O_3	B(a)P	CO
1	B.S. City Rly. Stn.	05.10.13	77	43	65.27	76.75	46.32	18.6	<1	921
2	Sector-9	15.10.13	65	33	56.38	43.03	29.15	21.2	<1	689
3	Sector-12	05.10.13	67	30	46.76	38.42	45.17	38.4	<1	570
4	Garga Dam	05.10.13	49	27	10.74	12.08	29.63	26.1	<1	156
5	Bokaro Hotel	22.10.13	58	32	36.24	28.62	26.14	22.4	<1	599
6	CISF (SGP)	15.10.13	72	42	15.32	18.63	38.82	33.6	<1	215
7	Air Strip	22.10.13	67	36	28.14	33.43	50.63	26.5	<1	426

Standards : PM_{10} - 100, $PM_{2.5}$-60, SO_2 - 80, NO_2 – 80, NH_3 - 400 , O_3-100, BaP- 1.0 , CO -4000 (Units: micro gram/m^3) BaP- ng/m3

NOV'2013

S. No	Location of the Station	Date	Parameters (as applicable)							
			PM_{10}	$PM_{2.5}$	SO_2	NO_2	NH_3	O_3	B(a)P	CO

1	B.S. City Rly. Stn.	19.11.13	87	42	64.26	71.2	44.6	16.8	<1	916
2	Sector-9	22.11.13	79	32	54.80	62.4	32.8	20.2	<1	672
3	Sector-12	19.11.13	76	34	47.76	48.2	42.4	32.6	<1	582
4	Garga Dam	19.11.13	48	26	11.06	13.6	28.6	24.2	<1	162
5	Bokaro Hotel	12.11.13	56	30	28.76	30.26	30.8	20.1	<1	612
6	CISF (SGP)	22.11.13	91	41	16.26	20.26	36.6	28.3	<1	235
7	Air Strip	12.11.13	68	32	27.48	36.16	40.3	24.2	<1	435

DEC'2013

S. No	Location of the Station	Date	Parameters (as applicable)							
			PM_{10}	$PM_{2.5}$	SO_2	NO_2	NH_3	O_3	B(a)P	CO
1	B.S. City Rly. Stn.	20.13.13	81	38	58.11	36.81	36.5	14.26	<1	779
2	Sector-9	27.12.13	67	32	34.26	43.67	29.6	18.90	<1	441
3	Sector-12	20.13.13	77	29	26.12	41.65	36.1	18.56	<1	305
4	Garga Dam	20.12.13	76	33	37.16	48.15	39.5	16.71	<1	176
5	Bokaro Hotel	13.12.13	52	27	18.82	50.60	30.0	12.14	<1	225
6	CISF (SGP)	27.12.13	78	36	33.21	36.85	41.0	10.85	<1	265
7	Air Strip	13.12.13	64	36	21.26	48.72	20.81	15.16	<1	296

JAN'2014

S. No	Location of the Station	Date	Parameters (as applicable)							
			PM_{10}	$PM_{2.5}$	SO_2	NO_2	NH_3	O_3	B(a)P	CO
1	B.S. City Rly. Stn.	21.01.14	74	40	56.15	32.13	30.50	15.81	<1	875
2	Sector-9	10.01.14	63	28	39.72	40.15	21.45	14.98	<1	601
3	Sector-12	21.01.14	58	32	42.67	36.76	26.11	20.81	<1	315
4	Garga Dam	21.01.14	46	38	10.26	28.17	20.95	11.76	<1	109
5	Bokaro Hotel	17.01.14	60	35	31.50	39.14	19.98	18.72	<1	216
6	CISF (SGP)	10.01.14	72	45	15.27	32.73	28.33	29.16	<1	219
7	Air Strip	17.01.14	66	39	26.81	36.17	26.14	22.17	<1	205

FEB'2014

S. No	Location of the Station	Date	Parameters (as applicable)							
			PM_{10}	$PM_{2.5}$	SO_2	NO_2	NH_3	O_3	B(a)P	CO
1	B.S. City Rly. Stn.	11.02.14	82	47	58.75	50.38	43.23	28.39	<1	779
2	Sector-9	25.02.14	73	35	41.16	44.11	24.15	32.78	<1	464
3	Sector-12	11.02.14	75	31	36.70	38.95	26.81	39.40	<1	501
4	Garga Dam	11.02.14	51	26	23.96	29.71	20.86	16.51	<1	316
5	Bokaro Hotel	18.02.14	56	30	30.45	36.66	30.87	18.14	<1	375
6	CISF (SGP)	25.02.14	85	39	42.16	27.81	36.55	21.79	<1	296
7	Air Strip	18.02.14	48	32	33.66	42.16	34.63	26.34	<1	382

MAR'2014

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_6H_6	As	BaP	Ni	CO
1	B.S. City Rly. Stn.	21.03.14	96.48	54.13	14.34	68.34	72.88	61.84	0.22	1.88	2.82	0.87	14.21	1.128
2	Garga Dam	21.03.14	94.41	49.58	13.34	70.81	137.85	64.09	0.21	1.67	2.83	0.59	12.94	1.044
3	Sector-12	22.03.14	91.72	41.48	13.57	68.55	114.02	58.93	0.18	1.56	2.53	0.66	11.0	1.442
4	Sector-9	23.03.14	90.48	44.02	11.84	65.24	73.37	59.29	0.19	1.17	2.75	0.52	10.55	1.208
5	Bokaro Hotel	23.03.14	96.11	45.23	13.18	73.13	96.39	61.84	0.20	1.48	2.29	0.74	8.24	1.246
6	CISF (SGP)	25.03.14	94.62	46.32	11.47	64.45	82.26	60.56	0.21	1.09	3.13	0.38	13.92	1.326
7	Air Strip	22.03.14	81.52	38.03	13.98	65.04	97.56	60.05	0.23	1.34	3.25	0.43	14.53	1.327

Water Pollution Status

OCT'2013

Water consumption 4.52m^3 / 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

Date of Monitoring	Name of the stream	Parameters (mg/l, except pH and temp.)									Flow rate m3/hr
		Temp. ^{0}C	pH	TSS	Phenol	Cyanide	BOD	COD	Amm. Nitrogen	O&G	
18.10.13	OF- 1	28.4	7.10	32	0.053	0.018	10.82	62	3.26	0.32	450m3/hr
	OF- 2	28.4	7.66	21	0.058	0.008	6.20	43	0.83	0.14	200m3/hr
	OF- 3	29.0	7.88	32	0.038	0.018	5.92	46	0.48	0.28	100m3/hr

Standards : Temp.- Upto 40^{0}C, pH -6.0-8.50, TSS- 100, Phenol- 1.0, Cyanide- 0.20, BOD- 30, COD- 250, Amm. Nitrogen- 50, O&G- 5.0

Note:- Outfall-1 (COBPP, Sinter Plant, TPP, BF, RMP), Outfall-2:(SMS-1, SMS-2 &CCS, Rolling Mills)
Outfall-3 (OG, HRCF, Project Sites, BGH)

NOV'2013

Date of Monitoring	Name of the stream	Parameters (mg/l, except pH and temp.)									Flow rate m3/hr
		Temp. ^{0}C	pH	TSS	Phenol	Cyanide	BOD	COD	Amm. Nitrogen	O&G	
16.11.13	OF- 1	22.8	7.85	42	0.049	0.024	9.36	81	4.05	0.31	450m3/hr
	OF- 2	23.4	7.78	27	0.041	0.019	8.40	62	0.83	0.79	200m3/hr
	OF- 3	21.9	8.18	15	0.036	0.021	4.10	48	0.73	0.27	100m3/hr

DEC'2013

Date of Monitoring	Name of the stream	Parameters (mg/l, except pH and temp.)									Flow rate m3/hr
		Temp. ^{0}C	pH	TSS	Phenol	Cyanide	BOD	COD	Amm. Nitrogen	O&G	
10.12.13	OF- 1	21.0	8.12	39	0.031	0.016	7.81	46	3.13	0.42	450m3/hr
	OF- 2	21.5	6.28	41	0.022	0.023	7.65	39	0.25	0.26	200m3/hr
	OF- 3	23.2	6.45	28	0.018	0.003	4.85	41	0.35	0.29	100m3/hr

JAN'2014

Date of Monitoring	Name of the stream	Parameters (mg/l, except pH and temp.)									Flow rate m3/hr
		Temp. ^{0}C	pH	TSS	Phenol	Cyanide	BOD	COD	Amm. Nitrogen	O&G	
10.01.14	OF- 1	18.2	8.2	41	0.099	0.011	12.65	62	3.28	0.65	450m3/hr
	OF- 2	19.5	7.25	43	0.036	0.006	8.16	77	1.40	0.28	200m3/hr
	OF- 3	19.5	7.86	26	0.009	0.004	7.11	62	1.82	0.17	100m3/hr

FEB'2014

Date of Monitoring	Name of the stream	Parameters (mg/l, except pH and temp.)									Flow rate m3/hr
		Temp. ^{0}C	pH	TSS	Phenol	Cyanide	BOD	COD	Amm. Nitrogen	O&G	
07.02.14	OF- 1	23.7	8.0	38	0.024	0.029	11.25	42	4.825	0.37	450m3/hr
	OF- 2	23.3	6.31	32	0.009	0.007	10.35	55	1.650	0.51	200m3/hr
	OF- 3	23.1	7.65	28	0.012	0.006	11.95	65	0.182	0.40	100m3/hr

MAR'2014

Date of Monitoring	Name of the stream	Parameters (mg/l, except pH and temp.)									Flow rate m3/hr
		Temp. ^{0}C	pH	TSS	Phenol	Cyanide	BOD	COD	Amm. Nitrogen	O&G	
19.03..14	OF- 1	25.7	8.10	35	0.051	0.031	6.90	38	5.812	0.85	450m3/hr
	OF- 2	26.1	6.97	24	0.021	0.009	9.15	57	1.624	0.65	200m3/hr
	OF- 3	28.1	7.44	14	0.024	0.020	4.45	42	1.012	0.34	100m3/hr

Status of Sewage Treatment Plant (STP)

Date	Time of Monitoring	Name of the STP	Quantity of the Effuent	Temp. ^{0}C	pH	TSS	BOD	COD	Remarks
11.10.13	09:30:00	BGH	-	26.1	7.44	25	10.51	94	
	10:30:00	Dhandabra	-	27.0	7.32	26	9.82	82	
	10:00:00	Sector -6	-	26.5	7.14	24	10.21	80	
	11:30:00	Camp-2	-	27.2	7.19	20	11.56	76	
	12:00:00	Sector-12	-	26.8	7.10	23	13.16	69	

Standards : Temp.- Upto 40^{0}C, pH -6.0-8.5, TSS- 30, Phenol- 1.0, Cyanide- 0.20, BOD- 20, COD- 250.

NOV'2013

Date	Time of Monitoring	Name of the STP	Quantity of the Effuent	**Temp. ^{0}C**	**pH**	**TSS**	**BOD**	**COD**	**Remarks**
29.11.13	09:30:00	BGH	-	23.6	6.94	14	10.6	98	
	10:30:00	Dhandabra	-	23.1	7.64	18	12.4	92	
	10:00:00	Sector -6	-	22.8	7.58	17	11.8	84	
	11:30:00	Camp-2	-	22.4	7.48	15	15.2	123	
	12:00:00	Sector-12	-	23.6	7.62	16	12.5	89	

DEC'2013

Date	Time of Monitoring	Name of the STP	Quantity of the Effuent	**Temp. ^{0}C**	**pH**	**TSS**	**BOD**	**COD**	**Remarks**
06.12.13	09:30:00	BGH	-	21.1	7.62	15	14.6	78	
	10:30:00	Dhandabra	-	20.6	8.15	14	11.8	81	
	10:00:00	Sector -6	-	20.6	8.06	16	10.3	94	
	11:30:00	Camp-2	-	21.2	7.96	18	9.71	85	
	12:00:00	Sector-12	-	20.9	7.52	14	12.6	89	

JAN'2014

Date	Time of Monitoring	Name of the STP	Quantity of the Effuent	**Temp. ^{0}C**	**pH**	**TSS**	**BOD**	**COD**	**Remarks**
15.01.14	09:30:00	BGH	-	18.1	7.98	12	9.50	44	
	10:30:00	Dhandabra	-	18.9	8.23	15	12.00	53	
	10:00:00	Sector -6	-	20.0	8.15	17	14.50	54	
	11:30:00	Camp-2	-	19.6	7.82	21	12.50	59	
	12:00:00	Sector-12	-	19.9	8.0	16	13.30	53	

FEB'2014

Date	Time of Monitoring	Name of the STP	Quantity of the Effuent	**Temp. ^{0}C**	**pH**	**TSS**	**BOD**	**COD**	**Remarks**
14.02.14	09:30:00	BGH	-	22.0	7.30	14	10.5	72	
	10:30:00	Dhandabra	-	22.8	7.43	13	11.5	66	
	10:00:00	Sector -6	-	21.9	7.37	20	13.0	78	
	11:30:00	Camp-2	-	23.1	7.25	18	12.0	80	
	12:00:00	Sector-12	-	22.6	7.64	16	13.5	77	

MAR'2014

Date	Time of Monitoring	Name of the STP	Quantity of the Effuent	**Temp. ^{0}C**	**pH**	**TSS**	**BOD**	**COD**	**Remarks**
04.03.14	09:30:00	BGH	-	22.1	8.07	14	11.65	81	
	10:30:00	Dhandabra	-	22.2	8.17	18	10.25	46	
	10:00:00	Sector -6	-	22.3	8.22	17	11.70	72	
	11:30:00	Camp-2	-	22.4	8.14	22	8.50	92	
	12:00:00	Sector-12	-	22.3	8.18	19	11.10	65	