

Form-V
(See Rule 14)
Environmental statement for the financial year ending 31st March 2014.

(Unit- Power House)

PART-A

- i) Name and address of the owner/ Occupier of the industry operation or process : **Mr. R. A. Singh**
Head (ES)
West Bokaro Division,
TATA Steel Limited, P.O.: Ghatotand
Dist. Ramgarh, Jharkhand- 825314
- ii) Industry category Primary- (STC-code) : SITC -321.4, 321.5A, 321.6A
Secondary- (SIC code) : ISIC -2100
- iii) Production capacity- units : 2 X 10 MW Thermal Power & 2x2.5MW DG Set
- iv) Year of establishment : 1994
- v) Date of last environmental statement submitted : Letter no. WBD/EMC/4016/111/13, dated 20th Sept, 2013. For the year 2012-13.

PART-B

Water and Raw material Consumption

- i) Water Consumption (m³/d)
- Process : 1796.67 m³/d
- Cooling : 2831.90 m³/d (Boiler feed + Cooling)
- Domestic : (This was included in the Environmental Statement of West Bokaro Colliery)

Name of the Product	Process Water Consumption per unit of product output	
	During the previous Financial year (2012-13)	During the current Financial year (2013-14)
Electricity	0.0149 m ³ /kwh (Process + Cooling)	0.0157 m ³ /kwh (Process + Cooling)

- ii) Raw material consumption

*Name of raw materials	Name of products	Consumption of raw material per unit of output	
		During the previous Financial year (2012-13)	During the current Financial year (2013-14)
Coal (Washery rejects)	Electricity	2.17 kg/kwh	2.12 kg/kwh

*Industry may use codes is disclosing details of raw material would violate contractual obligation otherwise all industries have to name the raw materials used.

PART-C

Pollution discharged to environment / unit of output
(Parameter as specified in the consent issued)

Pollutants	Quantity of pollutants discharged (mass /day)	Concentration of pollutants discharges (mass / volume)	Percentage of variation from prescribed standards with reason
a. Water	100% effluent is recycled back to the process. Effluent analysis report is attached as annexure-II .		
b. Air	Due to control of source emission, ambient air quality is found to be well within limit as shown in ambient air quality monitoring report is enclosed herewith. Stack emission is within permissible limit. Report enclosed as annexure-I .		

PART-D

**(As specified under Hazardous Wastes
[Management, Handling and Transboundary Movement Rules, 2008])**

Hazardous Waste	Total Quantity	
	During the previous financial year (2012-13)	During the current financial year (2013-14)
(a) From Process a) Oil soaked cotton (jute)	3720 Kg/y	3730 Kg/y
(b) From Pollution control facilities a. Used oil b. Non ferrous scrap (Cu -Wires, Zn chips, etc.)	1100 liters Nil	3080 liters Nil

**PART- E
Solid Wastes**

Solid Wastes	Total Quantity	
	During the previous financial year(2012-13)	During the current financial year (2013-14)
(a) From Process Coarse ash (from boiler)	Approx 88574 T	Approx 94310.3 T
(b) From Pollution control facilities Fly ash (from ESPs)	Approx 59049 T	Approx 40418.7 T
(C) (1) Quantity recycled or reutilized within the unit (2) Sold (3) Disposed	The ash being dump for filling of low laying area created between the OB dumps. Also on pilot scale basis, the ash is used for bricks making by self-help group of local village ladies.	

PART-F

Please specify the characterization (in term of composition and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

Category of Waste	Characteristics	Quantity	Disposal Practice
Solid Waste			
1.Coarse Ash	Burnt coarse coal particles (<i>Solid</i>)	~94310.3 T	Being used in filling low lying area between OB dumps, partially utilized in bricks making.
2.Fly Ash	Burnt fine coal particles (<i>Solid</i>)	~40418.7 T	
Haz. Waste			
1. Used Oil	Used Oil (<i>Liquid</i>)	3080 lit	Disposed off to authorized recycler. Safely collected and stored.
2. Oil soaked cotton/jute	Used Cotton (<i>Solid</i>)	3730 Kg/Yr	

PART-G

Impact of the pollution abatement measure taken on conservation of natural resources and on the cost of production

FBC based power plant used high ash content (58-62%) reject coal as fuel and produces power in efficient way. A four field BHEL make Electrostatic Precipitator has been installed with various associated auxiliary system which limits the emission well below the permissible norm. Online stack monitoring system is installed for monitoring & recording of stack emission level for both the stacks and data transmission facility has been extended to JSPCB office, Ranchi.

The combined impact due to implementation of pollution prevention and control measures on cost per tonne of ROM coal, of entire west Bokaro division (Washery, PH, Mines, Eng. services, Logistic, etc.) is Rs. 26.27 (Rupees twenty six and twenty seven paisa only).

PART-H

Additional measures / investment proposal for environmental protection including abatement of pollution, prevention of pollution

Recently an additional water recycling pipeline was introduced from ash pond to PH area for fly ash circulation which approximate cost up to rupees 5 lakhs. Regular maintenance of all equipments is done for enhancement of efficiency of PH. Zero discharge is being maintained strictly with close circuit recycling of water.

PART-I

Any other particular for improving the quality of the environment

West Bokaro Division of TATA Steel Ltd. is committed to improve safety and environment by strictly practicing Environmental Management System of company. Various programs are arranged such as green month, World Environmental day, Van Mohotsav for public awareness.

**Mr. R. A. Singh, Head (ES),
West Bokaro Division, TATA Steel Limited, P.O.: Ghatotand
Dist. Ramgarh, Jharkhand- 825314**

AIR QUALITY REPORT AT WORK PLACEName of Industry: **West Bokaro Division**No. of sampling points: **(01)**Date of Sampling: **06-07 Jan.2014**
06-07 Feb.2014
06-07 Mar.2014Sampling position: **Power House****1. Control, Room**

Location	Date of Sampling (24 hrs.)	SO ₂	NO _x	RPM	SPM
Power House	06-07 January 2014	<10	54	160	488
	06-07 February 2014	12	25	100	258
	06-07 March 2014	<10	32	132	274
Maximum		12	54	160	488
Average		<10	37	130	340
Limit		120 µg/ m³	120 µg/ m³	300 µg/ m³	700 µg/ m³

AMBIENT AIR QUALITY REPORTName of Industry: **West Bokaro Division**No. of sampling points: **(03)**Sampling position: **Power House**Date of Sampling: **16-17 Jan.2014**
06-07 Feb.2014
06-07 Mar.2014**1. Banjee**

Location	Date of Sampling (24 hrs.)	SO ₂	NO _x	PM ₁₀	PM _{2.5}
Near Banjee	16-17 January 2014	<10	30	62	48
	06-07 February 2014	<10	<10	52	34
	06-07 March 2014	<10	11	52	34
Maximum		<10	30	62	48
Average		<10	20.5	55	38
Limit		80 µg/m³	80 µg/m³	100 µg/m³	60 µg/m³

AMBIENT AIR QUALITY REPORT

Name of Industry: **West Bokaro Division**

No. of sampling points: **(03)**
Sampling position: **Power House**

Date of Sampling: **28-29 Jan.2014**
18-19 Feb.2014
06-07 Mar.2014

2.Pundi

Location	Date of Sampling (24 hrs.)	SO ₂	NO _x	PM ₁₀	PM _{2.5}
Near Pundi	28-29 January 2014	<10	22	46	29
	18-19 February 2014	16	<10	51	35
	06-07 March 2014	<10	<10	55	35
Maximum		16	22	55	35
Average		12	14	50	33
Limit		80 µg/m³	80 µg/m³	100 µg/m³	60 µg/m³

AMBIENT AIR QUALITY REPORT

Name of Industry: **West Bokaro Division**

No. of sampling points: **(03)**
Sampling position: **Power House**

Date of Sampling: **26-27 Jan.2014**
18-19 Feb.2014
11-12 Mar.2014

2. Mukundabera

Location	Date of Sampling (24 hrs.)	SO ₂	NO _x	PM ₁₀	PM _{2.5}
Mukunda Bera	26-27 January 2014	<10	40	54	44
	18-19 February 2014	16	<10	51	44
	11-12 March 2014	<10	11	53	41
Maximum		16	40	54	44
Average		12	20	52	43
Limit		80 µg/m³	80 µg/m³	100 µg/m³	60 µg/m³

STACK EMISSION MONITORING REPORT

Sl. No.	PARAMETERS	DETAILS	LIMIT
01	Name of industry	Power House, WBD, Tata Steel	
02	Date of sampling	24.03.2014	
03	Weather condition	Normal dry	
04	Stack No if any	01 (Attached to Boiler No. 01)	
05	Stack height from ground meter	38 meter	
06	Stack diameter meter	2.1 meter	
07	Height of sampling port meter	28 meter	
08	Atmospheric temperature deg C	33 deg C	
09	Stack gas temperature deg C	110 deg C	
10	Stack gas velocity m/s	23.42 m/s	
11	Volumetric flow rate Ncu.m/Hr	2,26,968 Ncu.m/Hr	
12	Dust concentration mg/Ncu.m	115 mg/Ncu.m	150 mg/Ncu.m
13	Emission rate Kg/Hr	26.10 Kg/Hr	
14	Name of fuel & quantity used	Washery rejects 600. 700 T/Day	
15	Production capacity	2x10 MW	

EFFLUENT QUALITY

SAMPLING DATE: 11.03.2014

LOCATION	LEVELS OF POLLUTANTS								
	Temp in C	Color	pH	TSS	TDS	TS	COD	BOD	Oil & Grease
SEB ash pond	-	Colorless	7.9	30	890	920	26	6.9	0.78
LIMIT	5 C difference	colorless	6.5-8.5	100 mg/L	2100 mg/L	2200 mg/L	250 mg/L	30 mg/L	10 mg/L

AMBIENT NOISE MONITORING

LOCATION	NOISE LEVELS dB(A)			
	DURING DAY TIME		DURING NIGHT TIME	
	LIMIT	ACTUAL	LIMIT	ACTUAL
Power House (W. Complex)	75	64-72	70	54-56

Head (Env. & Forests) RMP
West Bokaro
Tata Steel