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The Member Secretary,
Jharkhand State Pollution Control Board,
T.A. Division (Ground Floor),
H.E.C. Dhurva, Ranchi – 834004
Jharkhand

WBD/EMC/4016/084/18

Date: 20.09.2018

Subject: Submission of Environmental Statement of Washery-III unit of West Bokaro Division, Tata Steel Limited for the year 2017-18

Dear Sir,

Please find enclosed herewith the duly filled "Environmental Statement" (Form-V) Washery-III unit of West Bokaro Division, Tata Steel Ltd. for the year 2017-18.

Kindly acknowledge the same & oblige.

Thanking you,
Yours sincerely,

A handwritten signature in blue ink, followed by the date '20-9-18' written in blue ink.

Head (E&F)
West Bokaro Division
Tata Steel Ltd.

Encl: As Above

Copy to : The Regional Officer, Jharkhand State Pollution Control Board, PTC Chowk, Matwari, Hazaribagh – 825301 (Jharkhand)

TATA STEEL LIMITED

West Bokaro Division Ghatotand Jharkhand 825 314 India

Tel 91 6545 262356 (O) Fax 91 6545 262221 262172

Registered Office Bombay House 24 Homi Mody Street Fort Mumbai 400 001

Tel 91 22 66658282 Fax 91 22 66657724

Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com

FORM - V
(See Rule -14)

ENVIRONMENT STATEMENT FOR THE FINANCIAL YEAR ENDING THE 31st MARCH, 2018

UNIT: WASHERY - III, WEST BOKARO DIVISION, TATA STEEL LIMITED

PART - A

- 1 Name and address of the owner/ occupier of the industry, operation or process : Mr. B.V. Sudhir Kumar
Chief (Coal Beneficiation),
West Bokaro Division,
TATA Steel Limited, P.O.- Ghatotand
Dist. Ramgarh, Jharkhand-825314
- 2 Industry Category : Major (Coal Beneficiation)
- 3 Production Capacity : 4.5 MTPA Raw Coal Throughput
- 4 Year of Establishment : 1994
- 5 Date of last Environmental Statement submitted. : 25th September 2017

PART - B

WATER AND RAW MATERIAL CONSUMPTION

i. Water Consumption (m³/d):

- Process : 1488.59
Cooling/ Spraying in mine pits : Not Applicable
Colony : This is included in the Environmental Statement of West Bokaro Colliery

Name of the product	Process water consumption per product output (m ³ /ton)	
	During the Previous Financial Year (2016-17)	During the current Financial Year (2017-18)
Clean Coal	0.29	0.37

ii. Raw Material Consumption:

Name of Raw materials	Name of the product	Consumption of Raw Material per unit of output	
		During previous financial year (2016-17)	During current financial year (2017-18)
Raw Coal	Clean Coal	2.064 t/t of clean coal	0.80 t/t of clean coal
Magnetite	Middling	0.68 kg/t of coarse coal	0.53 kg/ton of coarse coal
Synthetic Collector		0.47 kg/t of fine raw coal	0.50 kg/ton of fines raw coal
Frother		0.11 kg/t of fine raw coal	0.11 kg/ton of fines raw coal
Flocculent		0.021 kg/t of fine raw coal	0.020 kg/ton of raw coal

PART - C

POLLUTION DISCHARGES TO ENVIRONMENT/ UNIT OF OUTPUT (PARAMETERS AS SPECIFIED IN THE CONSENT ISSUED)

Pollutants	Quantity of pollutants discharged (mass /day)	Concentration of pollutants in discharges (mass / volume)	Percentage of variation from prescribed standards with reason
Water	Zero Effluent Discharge is maintained.		

Pollutants	Quantity of pollutants discharged (mass /day)	Concentration of pollutants in discharges (mass / volume)	Percentage of variation from prescribed standards with reason				
Air	Air quality is monitored and found within prescribed limit. Details for FY'18 are as follows:						
AAQ Report: Core Zone							
	Parameter	Washery Complex	Standard				
	SPM	429.00	700				
	RPM	148.58	300				
	PM10	72.33	100				
	PM2.5	46.08	60				
	SO2	20.08	120				
	Nox	43.75	120				
All values are in ($\mu\text{g}/\text{m}^3$)							
AAQ Report: Buffer Zone							
	Parameter	Pundi	Banji	Chainpur	Duni	Mukunda Beda	Standard
	PM10	51.08	54.92	68.53	51.60	72.29	100
	PM2.5	26.05	32.64	42.75	30.72	46.09	60
	SO2	13.44	14.19	16.78	13.94	16.86	80
	Nox	28.89	27.96	27.46	28.80	28.46	80
All values are in ($\mu\text{g}/\text{m}^3$)							
Due to absence of stationary source, it is difficult to measure pollutants load. So, the quantity of air pollutants discharged in Kg/day cannot be ascertained. The above data shows the average ambient air quality during 2017-18.							

PART-D
HAZARDOUS WASTE

[as specified under Hazardous & Other Waste (Management & Transboundary Movement) Rules, 2016]

Hazardous Waste	Total Quantity	
	During the previous financial year (2016-17)	During the current financial year (2017-18)
a) From Process: Oil soaked cotton (jute)	460 kg	3320 kg
b) From Pollution control facilities: Used lubricating Oil	5400 litres	9450 litres

**PART-E
SOLID WASTE**

Solid Wastes		Total Quantity	
		During the previous financial year (2016-17)	During the current financial year (2017-18)
(a)	From Process: • Rejects (by products) • Tailings	• 699938 ton • 485004 ton	• 711158 ton • 684573 ton
(b)	From pollution control facilities	Nil	Nil
(c)	I. Quantity recycled or reutilized within the unit • Coal Reject	• 2.26 lakh ton used in captive power plant. (Rejects are being used in FBC power plant, disposed off to outside agencies & stacked in specified locations). (Above quantity includes coal reject and tailing of washery-III also).	• 2.03 lakh ton used in captive power plant. (Rejects are being used in FBC power plant, disposed off to outside agencies & stacked in specified locations). (Above quantity includes coal reject and tailing of washery-III also).
	II. Sold (to reuse as fuel) • Coal Reject • Tailings	• 7.68 lakh ton to institutionalized customer operating power plant. • 8.16 lakh ton to Brick Klin, and power plant operator. (Above quantity includes coal reject and tailing of washery-III also).	• 8.13 lakh ton to institutionalized customer operating power plant. • 13.71 lakh ton to Brick Klin, and power plant operator. (Above quantity includes coal reject and tailing of washery-III also).
	III. Disposed	Nil	Nil

PART - F

THE CHARACTERISTICS (in terms 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. Rejects	Coal of -13mm size (Solid)	699938 ton	Used in FBC power house and disposed off to outside parties operating power plant / stacked.
2. Tailings	Coal of -0.5mm size (Solid)	684573 ton	Disposed off to outside agencies (Brick klin manufacturer, institutionalized customer).
Hazardous Waste			
1. Used Oil	Used Oil (Liquid)	9450 litres	Disposed off to authorized recycler.
2. Oil soaked cotton/jute	Used Cotton (Solid)	3320 kg	Safely collected and stored.

PART - G

IMPACT OF POLLUTION ABATEMENT MEASURES TAKEN ON CONSERVATION OF NATURAL RESOURCES AND ON THE COST OF PRODUCTION

- Adequate fixed type dust suppression arrangement is working inside Washery roads.
- Dry fog system in coal handling plant installed.
- In addition to above, modifier has been introduced in froth-flotation process for additional recovery of clean coal, which is not only increases the yield of process reduces the raw coal quantity for the same quantity of clean coal thus conserves the natural resources.
- 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. 71.74 (Rupees seventy-one and seventy-four paisa only).

In addition to the above Tata Steel Rural Development Society (TSRDS) is engaged in peripheral developmental activities in villages around the mine. The projects of the Society include irrigation and agricultural extension projects, plantation programmes, installation of solar street lights and illuminate villages on through low cost, construction of ponds in support to provision of irrigation water and for other domestic use and in recharging groundwater by arresting the flow of rainwater in downstream, creation of SAVE FOREST groups, civic amenities development, medi-care and health education, rural sports, skill development and promotion of rural cultural activities.

PART-H

ADDITIONAL MEASURES/ INVESTMENT PROPOSAL FOR ENVIRONMENTAL PROTECTION INCLUDING ABATEMENT OF POLLUTION, PREVENTION OF POLLUTION

- .Efficient LED lights are introduced in canteen areas.
- ₹ 100.00 lakhs have been planned to be spent towards buying scientific equipment and strengthening the environmental laboratory.

PART-I

ANY OTHER PARTICULARS FOR IMPROVING THE QUALITY OF THE ENVIRONMENT

- EMS ISO 14001 & OHSAS 18001 are being monitored and practiced strictly to protect and preserve the environment by eco-friendly operations and prevent any potential hazard to become risk posing serious threat to environment in a proactive manner. Reduction in water consumption by ensuring its use in judicious manner, further, working on to reduction of power consumption by improving / replacing various energy efficient equipments. Mechanical Tailing dewatering plant is in operation to recover tailings and ensure recycling of water to wash plant. This has reduced the use of tailing ponds, a commitment towards continual improvement of environmental performance.

B.V. Sudhir Kumar
WVK / Mr. B. V. Sudhir Kumar, Chief (Coal Beneficiation)
West Bokaro Colliery, TATA Steel Limited,
P.O. - Ghatotand, Dist.- Ramgarh, Jharkhand - 825314