सेल SAIL

स्टील अथॉरिटी ऑफ इण्डिया लिमिटेड
STEEL AUTHORITY OF INDIA LIMITED
भिलाई इस्पात संयंत्र
BHILAI STEEL PLANT

क्र. उ.म.प्र.प्र.(पर्या.प्रबंधन विभाग)/बी-7/19/414 दिनांक: 30/09/2019

प्रति,

सदस्य सचिव
छत्तीसगढ़ पर्यावरण संरक्षण मंडल,
पर्यावास भवन
नार्थ ब्लॉक सेक्टर - 19
नया रायपुर (छ.ग.)-490099

विषय:- पर्यावरणीय विवरण (Environment Statement) वर्ष 2018-19.

महोदय,

भिलाई इस्पात संयंत्र का वर्ष 2018-19 का 'पर्यावरणीय विवरण' प्रतिवेदन कृपया अवलोकनार्थ संलग्न है ।

धन्यवाद सहित।

भवदीय

(आर जी गुप्ता)
महा प्रबंधक प्रभारी (पर्यावरण)

(FORM-V)

(See Rule 14)

Environmental Statement Report

(पर्यावरणीय विवरण)

for the financial year ending the 31st March 2019

Ref: The Gazette of India, Extraordinary,
Part-II, Section 3(1)
Ministry of Environment & Forests, Govt. of India
Notification dated April 22, 1993

STEEL AUTHORITY OF INDIA LIMITED
स्टील अथारिटी ऑफ इण्डिया लिमिटेड
BHILAI STEEL PLANT
भिलाई इस्पात संयंत्र
BHILAI, CHHATTISGARH, 490 001
भिलाई - 490001; छत्तीसगढ

PART-A

(i)	Name and address of the owner/ occupier of the industry operation or process	:	Shri A DAS Chief Executive Officer Steel Authority of India Ltd. Bhilai Steel Plant, Bhilai - 490 001 (C.G)
(ii)	Production Capacity/ Annum	:	7 Million Tonne Crude Steel
(iv)	Year of establishment	:	1956
(iv)	Date of the last environmental Statement report submitted.	:	30.09.2018

PART-B

Water and Raw Material Consumption

(i) Water consumption (m^3/day):

Process	6528747 m3
Cooling	11561435 m3
Domestic	55068783 m3

Name of Products	Water consumption per unit of product (m^3/TCS)	
	during the financial year 2017-18	during the financial year 2018-19
Steel	2.774	2.772

(ii) Raw Material Consumption:

(a) Raw material consumption at Blast Furnaces 4447252

Name of Raw Material	Name of Product	Consumption of Raw Materials per unit of output (Kg/T of product)	
		during the financial year 2017-18	during the financial year 2018-19
Coke	Hot Metal	491.7	493.3
Iron ore		528	539
Sinter		1162	1133
Limestone		7.6	1.4
Manganese Ore		1.43	1.3
Quartz		0.8399	1.254
BOF Slag*		4.16	3.12
Scrap		10.33	9.33
Coal Dust		44.6	37.6

* Solid waste (BOF Steel Slag) generated in steel plant.

(b) Raw Material Consumption at Steel Melting Shop-I

Name of Raw Material	Name of Product	Consumption of Raw Materials per unit of output (Kg/T of product)	
		during the financial year 2017-18	during the financial year 2018-19
Hot Metal	Crude Steel	956	946.6
Scrap		192.44	202.2
Iron ore		22.9	34.6
Mill Scale		-	-
Limestone		36.7	31.1
Lime		-	-
Petro Coke		0.9	0.7
Ferro-silicon		1.7	1.7
Ferro-manganese		18.6	17.6
Silico-manganese		0.2	0.64
Aluminum		0.25	0.30
BOF slag		57.23	51.19

(PART-B Continued)

(c) Raw Material Consumption at Steel Melting Shop-II

Name of Raw Material	Name of Product	Consumption of Raw Materials per unit of output (Kg/T of product)	
		during the financial year 2017-18	during the financial year 2018-19
Hot Metal	Crude Steel	1006.1	1009.3
Scrap		136.3	133.3
Iron ore		1.4	1.1
Lime / lime briquettes		59.0	58.7
Limestone		-	-
Silico-manganese		19.1	18.9
Ferro-silicon		0.9	0.9
Ferro-manganese		0.04	0.02
Aluminum		0.7	0.6
Petroleum coke		4.2	4.6
Cal dolomite		24.5	22.2

PART-C

Pollution Generated
(Parameters as specified in the consent issued)

(a) effluent

Pollutants	Unit	Norm	Concentration (Annual Avg)	Percentage variation from prescribed standards with reasons
(a) Water				
pH	-	5.5 - 9.0	7.56	Nil
Temperature	^{O}C	*	26.46	Nil
Suspended Solids	mg/L	100	54.19	Nil
BOD_3 at 27 ^{0}C	mg/L	30	19.00	Nil
COD	mg/L	250	58.50	Nil
Oil & Grease	mg/L	10	2.55	Nil
Phenolic Compounds	mg/L	1	0.21	Nil
Ammonical Nitrogen	mg/L	50	10.63	Nil
Cyanide	mg/L	0.2	0.13	Nil

*shall not exceed 5 ^{O}C above the receiving water temperature.

(Part-C continued)

(b) Air Emissions:

Shops	Stack		Norm	Concentration	% Deviation
	total	working	mg/Nm^3	mg/Nm^3	from Norm
A. Particulate Matter					
COB	11	8	50	39.87	Nil
SP-II	2	2	50	36.94	Nil
SP-III	2	2	50	36.41	Nil
BFs	8	8	50	18.30	Nil
SMS-I	4	4	50	34.77	Nil
SMS-II -LF	2	2	50	39.02	Nil
SMS-III	1	1	50	21.5	Nil
PP-I	2	2	50	35.71	Nil
PBS-II	2	2	50	18.22	Nil
BRM	1	1	50	18.76	Nil
BBM	7	7	50	18.75	Nil
WRM	1	1	50	19.92	Nil
MM	1	1	50	35.22	Nil
RSM (with URM)	2	2	50	40.76	Nil
RMP-I	2	2	50	18.00	Nil
RMP-II	3	3	50	39.87	Nil
RMP-III	5	5	50	36.94	Nil
PM (RHF)	2	2	50	36.41	Nil
B. Sulphur Dioxide			Kg/T of H_2SO_4		
DCDA Sulphuric Acid Plant	1	1	2.5	1.159	Nil
Total	59	59			

PART-D

Hazardous Wastes

(As specified under Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008)

Hazardous wastes		Total Quantity (in Tonnes/KL)	
		During the year(2017-18)	During the year(2018-19)
(a)	From Process		
1.	Used / spent Oil	138.18	126.0
2.	Acid Tar Sludge	985	759
3.	Tarry waste	698.21	379.9
4.	Tar storage tank residue	644.07	953.4
5.	i)ETP Sludge from DAF	985.44	809.2
	ii)ETP Sludge from Bio reactors		
	iii)Skimmed Oil		
6.	Spent solvent	-	-
7.	Filter cake	281.19	291.4
8.	Discarded containers of Hazardous chemicals	256.33	330.9
9.	i) Non Ferrous (Copper compounds & cables, Brass dross)	149.71	171.7
	ii) Lead & Lead compounds	-	-
10.	Discarded Asbestos	0.35	0.952T
11.	Mercury arc rectifiers tanks	Nil	Nil
(b)	From Pollution control facilities	Nil	Nil

PART-E

Solid Wastes

Description	Total Quantity (Unit '000 T)	
	during the financial year 2017-18	during the financial year 2018-19
(a) From Process	2336.28	2401.773
(b) From pollution control facilities	236.91	205.777
(c) Quantity recycled or re-utilized	2678.78	2260.517

PART-F

Please specify the characteristics (in terms of concentration and quantum) of Hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

Description of Wastes	Quantity	Mode of Disposal	
		Recycled/Sold	Dumped/Stock
	'000 Tonnes	'000 Tonnes	'000 Tonnes
(a) Hazardous Wastes	3.8253	2.9933	0.0751
(b) Solid Wastes			
BF Slag	1944.854	1746.433	198.421
LD Slag	2540.75	2309.75	-
THF Slag	96.148	11.300	74
Mill scale	105.184	105.184	-
Lime & Dolo fines	24.257	24.257	-
Refractory Wastes	11.645	11.645	-
Sinter Dust	69.180	69.180	
BF Flue dust	48.092	49.536	-
Fly ash	9.485	9.485	-
Sludge (BF + SP+ THF)	78.113	-	-
LD Sludge	12.995	0.908	-
Cinder	1.614	1.614	-

PART-G

Conservation of natural resources by impact of pollution control measures on and consequently on the cost of production.

During the financial year 2018-19 following benefits were achieved over the previous financial years through various pollution control / environmental improvement measures:-

1. BSP has obtained permission on 01/09/2018 from CECB to restart battery-1. After cold repair battery-1 was restarted on 05/09/2018.

2. After completion of BSP's Modernization /expansion (MODEX) schemes in March-2018, Air & Water consents for the entire 7 MTPA capacity plant (covering 4.0 MT & MODEX) has been granted by Chhattisgarh Environment Conservation Board (CECB) in August 2018.

3. BSP has also successfully obtained the fresh Hazardous Waste Authorization from by Chhattisgarh Environment Conservation Board (CECB) as per the provisions of latest Hazardous Waste Authorization Rules-2016 in April 2018.

4. Bhilai Steel Plant has applied for Fresh Environmental Clearance from Ministry of Environment Forests and Climate Change (MoEFCC) for the "Revised configuration under 7.0 MTPA Modernization-Cum-Expansion and after submission of Final EIA/EMP report in Oct 2018 , the case was taken up in the month of Nov'2018 by Expert Appraisal Committee , MoEFCC and granted environment clearance on 23.05.2019

5. The migration audit for as per the revised standards ISO: 14001:2015, Environment Management System under IMS has been successfully conducted in May, 2018 by the external auditor M/s.DNV-GL. The system has been certification for the revised standards ISO: 14001:2015.

Cost of Production during 2018-19

Product	Total cost of production (Rs./tonne)
1. BF Coke - Dry	Rs.27050/ T
2. Hot Metal	Rs.23562/ T
3. Crude Steel a. Steel Melting Shop-I b. Steel Melting Shop-II	 Rs.34,163/ T Rs.35,815/ T

PART-H

Additional investment proposal for environmental protection including abatement of pollution

Description	Cost in Rs. Lakh (during 2018-19)
Water Recycling Scheme for Outlet-B	582.32 lacs
Water Recycling Scheme for Outlet-C	4876 lacs
Upgradation of ESPs for waste gas cleaning system for Machine #1 of Sinter Plant-3	260.0 lacs
Replacement of multi cyclones with ESPs for flue gas cleaning at Sinter Plant-2	342 lacs
Cold Repair of Coke Oven Battery 9	243.9 lacs
Static facility for Env. Sound Mgt of PCB.	770.08 lacs
Cast House defuming System in BF-7	144.4 lacs
Upgradation of Waste Gas ESPs of SP - III	260.9 lacs
REBUILDING OF COKE OVEN BATTERY NO.7&8	226.1 lacs

PART-I

Miscellaneous

Any other particulars in respect of environment protection and abatement of pollution

1. BSP has organized Public Hearing at Nehru Sanskrit Bhawan, Sector-1, Bhilai on 08/06/2018 for the Fresh Environmental Clearance for the revised configuration under 7.0 MTPA Modernization-Cum-Expansion. The event was chaired by Dy. Commissioner, Durg and conducted by Regional Officer, CECB-Durg. More than 200 stakeholders representing near by villages, NGOs etc have actively participated in the Public Hearing. BSP management was represented by ED(Projects),ED(Works), DGM I/c (EnMD) & other senior officials and employees from the plant.

2. Total about 125 nos of employees have been trained under special awareness programs on Environmental/sustainability issues in the of 2018-19

3. BSP has celebrated 'Earth Day' on 22nd April 18 . A program was organized at ED(W) conference hall and a presentation on the "Perils of single use Plastic on the Environment" was made by EnMD before the senior management. Cloth bags were distributed to raise the awareness amongst employees against the single use plastic bags.
4. BSP have organized 'World environment day' on 5th June, 2018. Events like tree planation & a workshop at Town Services Department were
5. BSP has celebrated 'Ozone day ' on 16th September-2019 and world wet land day on 2nd Febraury-2019 by organizing various programs for employees & students for raising awareness on the importance of the issues for environmental protection & sustenance.
6. BSP has planted 103482,trees in 2018-19 covering an area of 39 hectares in Township.
7. BSP has sent around 35.5 Tons of acid tar sludge generated at Tar plant for co-processor to cement industry.
8. Bhilai Steel Plant is setting up a National level facility for Environmentally Sound management and Final Disposal of PCB (polychlorinated biphenyls) jointly with UNIDO and MoEFCC to decontaminate PCBs in transformer oils and to recycle the oil further in order to reduce and eliminate PCBs in India,
9. BSP has initiated water recycling schemes for use of wastewater in the plant process after treatment.
10. An expenditure of about 71 crs has been done on swachhata related activities, under the Prime Minister's Swachh Bharat Mission.
11. About 85% of the waste generated during the process is either recycles, reused back into the process or sold to authorized recyclers
12. Sp. water consumption of 2.77 m3/tcs has been achieved by BSP
13. During 2018-19, BSP has earned Rs. 158.35 Crs through selling of waste products generated during the production processes.