vedanta
transforming elements

sesa goa iron or

26/09/2018

Goa State Pollution Control Board
Opp. Saligao Seminary
Saligao, Bardez Goa.

Date: 19/09/2018

To,
The Member Secretary,
Goa State Pollution Control Board,
Dempo Towers, 1st Floor,
EDC Patto Plaza,
Panaji, Goa

Sub: Submission of Environmental Statement for the Financial Year 2017-2018 for Vedanta Ltd.-Pig Iron Plant Expansion (0.54MTPA Mini Blast Furnace).

Ref:- Consent To Operate No:-5/4462/09-PCB/CI-3780 dated 08/02/2018 ,Pig Iron Plant Expansion, Navelim, Bicholim-Goa

Sir,
With reference to above subject find enclosed herewith Environment Statement in Form V for Vedanta Ltd.Pig Iron Plant Expansion (0.45MTPA Mini Blast Furnace) for financial year 2017-2018 for your perusal.

Hope you will find the same in order.

Thanking you,

Yours Faithfully,
For Vedanta Limited – Value Addition Business

Nitesh Nirala
Head Pig Iron Division

Encl: as above

VEDANTA LIMITED
Value Added Business, Met Coke Division, Navelim, PO Sanquelim, Bicholim, Goa-403 505
Tel +91-832 398 1400 | Fax +91-832 398 1575 | Web: www.sesagoaironore.com

Registered Office: Vedanta Limited, 1st Floor, 'C' wing, Unit 103, Corporate Avenue, Atul Projects, Chakala, Andheri (East), Mumbai 400093, Maharashtra, India.
CIN: L13209MH1965PLC291394

FORM V

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR ENDING 31ST MARCH 2018

PART--- A

i	Name & address of the owner /occupier of the industry operation or process	**Mr. G.R. Arun Kumar** **The Occupier** **Vedanta Limited – 0.54 MTPA Blast Furnace &1 MTPA Sinter Plant** **Navelim Goa 403107**
ii	Industry category	Major
iii	Production capacity	5,40,000 T / Year Pig Iron & 1 MTPA Sinter Plant
iv	Year of establishment	2012
v	Date of last environment statement submitted	24nd September 2017

PART ---- B

Water and Raw Material consumption

(1) Water consumption m^3/d

(a)	Process	Nil
(b)	Cooling*	2208.49 m^3 / day
(c)	Domestic**	70.5 m^3 / day

	Name of the product	Process water consumption per unit of product out put	
		During current financial year 2016-17	During current financial year 2017-18
1	Pig Iron	Process Water – NA Cooling Water *- 1.68 m^3/t of Pig Iron	Process Water – NA Cooling Water *- 2.056 m^3/t of Pig Iron

*Cooling water is inclusive of slag granulation, pig cooling, O2/N2 cooling; BF stove cooling, dust suppression and Sinter plant usage.

*Cooling water for the year is inclusive of both Blast Furnace and Sinter Plant.

(2) Raw Material consumption

Name of the Raw Material	Name of the Product	Consumption of Raw Material per unit	
		During previous Financial year 2016-17	During current Financial year 2017-18
a) Metallurgical Coke	Pig Iron	485.01 Kg/T of product	514.12 Kg/T of product
b) Lumpy High Grade Ore		412 Kg/T of product	472.65 Kg/THM of product
c) Limestone		0.46 Kg/T of product	0.72 Kg/THM of product
d) Dolomite		3.65 Kg/T of product	10.72 Kg/THM of product
e) Manganese Ore		0 Kg/T of product	0 Kg/T of product
f) Siliceous ore/Quartz		34.30 Kg/T of product	28.88 Kg/THM of product
g) Sinter		1277.56 Kg/T of product	1,271.16 Kg/THM of product
h) Pulverized coal		111.35 Kg/T of product	92.60 Kg/THM of product
a) High Grade Low Mn Iron Ore Fines	Sinter	40 Kg/T of product	53Kg/T of product
b) Low Grade Iron Ore Fines		921Kg/T of product	888Kg/T of product
c) Coke Breeze		67 Kg/T of product	60Kg/T of product
d) Limestone		107 Kg/T of product	109Kg/T of product
e) Dolomite		71 Kg/T of product	72 Kg/T of product
f) Limestone & Dolomite Fines		2 Kg/T of product	1 Kg/T of product
g) Pig Iron 10/-50 mm Goli & -10mm Goli		9 Kg/T of product	11 Kg/T of product
h) Quick Lime		26 Kg/T of product	23 Kg/T of product

i) Sinter Dust & Sinter Fines (-5mm)		1 kg/T of product	29 Kg/T of product
j) Flue dust from Blast Furnace		14 Kg/T of product	29 Kg/T of product
k) Mill Scale		1 Kg/T of product	2 Kg/T of product

Note:

1) The raw material consumption varies depending on the grade of the ore. Sinter produced through Sinter plant is used as raw material in the production of Pig Iron. Depending on quality of Sinter, fluxes like limestone & dolomite are added accordingly.
2) Pulverized Coal Injection was commissioned in April 2013
3) The O_2N_2 plant is set up to supply oxygen for blast enrichment and Nitrogen gas for sealing and purging purpose.
4) All flue dust, fines, etc generated at the Pig Iron Plant & Sinter Plant is used as a raw material in sinter Plant

PART------C

POLLUTION DISCHARGED TO ENVIRONMENT / UNIT OF OUT PUT

	Pollution	**Quantity of pollutants discharged (mass/day)**	**Concentration of pollutants in discharge (mass./day)**	**Percentage of variation from prescribed standards with reasons**
(a)	Water	No effluents is discharged either from Blast Furnace or Sinter Plant **No discharge outside plant.**		No Variation
(b)	Air	Monitoring carried out as per Consent conditions and is within permissible limit, and results submitted to GSPCB		

Note: During Monsoons, only the storm water is let out through storm water drains after achieving proper settling in the settling pond.

PART---- D

HAZARDOUS WASTES

(As specified under Hazardous Wastes (Management, Handling & transboundary movement) Rules, 2008.

		During the previous Financial year (2016-17)	**During the current Financial year (2017-18)**
(a)	From process	N.A	N.A
(b)	From pollution control facilities	N.A	N.A

PART---- E

SOLID WASTES

		During the previous Financial year (2016-17)	**During the current Financial year (2017-18)**
(a)	From Process: (solid waste)	163138.32	150296
(b)	From Pollution Control Facility		
	Flue Dust	9004.7 T	13836.560 T
	Slurry	Nil	Nil
	(1) Quantity recycled or re-utilized within the unit	Reused in Sinter Plant	Reused in Sinter Plant
	(2) Sold	143950.545	175244.86
	Flue Dust	NA	Nil
	Slurry	NA	Nil
	(3) Disposed	NA	Nil

PART—F

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

1. **Hazardous Waste**: Occupier is authorized to handle used oil/Spent oil (Category 5.1) up to 15 MT /Annum; Oil soaked cotton rags/wastes (Category 5.2) up to 10 MT/year, and Used/Discarded Paint Tins (Category 33.3) up to 2 MT /year.

Total spent oil (Category 5.1) disposed for the financial year 2017-18 is 9.62 MT.

The same quantity of spent oil and used containers are disposed off to authorized recycler.

Annual Returns in Form 4 submitted to GSPCB on 27/06/2018

2. **Dust from de-dusting system & dry GCP** – The dust is collected and used as raw material to produce sinter at Sinter Plant. Also the slurry obtained from PCM is dried and used in sinter

PART—G

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

- We have installed facility to use PCI of 102 kg/T hot metal which will substitute some coke. This initiative has helped to conserve scarce coking coal & consequently reduce GHG emissions. PCI was commissioned in April'13.
- Around 85-90% sinter is charged in the blast furnace, which helps in reduction of coke rate and subsequently reduction of GHG emissions. Besides iron ore fines can be utilized conserving the lumpy iron ore.
- Hot Blast Stoves (HBS) are top fired, helping in higher blast temperature. Waste heat of flue gases is utilized in Air preheater (APH). These have accounted for reduction in coke rate and subsequent reduction in GHG emissions.
- Dry Gas Cleaning plant has helped in reducing water consumption.
- Rain guns are also installed in raw material yard to prevent the fugitive dust.
- De-dusting unit is installed at cast house and PCM area.
- De-dusting unit is installed at stock house.
- 15 KLD & 7.5 KLD Sewage Treatment Plant have been installed.
- Continuous Ambient Air Quality Monitoring System (CAAQMS) has been installed to monitor Particulate Matter (PM_{10} & $PM_{2.5}$).
- Also, air quality is monitored inside the plant area of blast furnaces, stock house, and dispatch yard.
- Geotextiles have been laid on the slopes at plant site.
- Windshields have been set up at the dispatch yard and raw material yard, along the boundary wall.

PART—H

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

- Online Gas (SO2) analyzer has been installed at Head End ESP chimney of Sinter Plant.
- Installed 17 cameras at vital water effluent/air emission points.
- It is proposed to install continuous monitoring analyzer to stacks
- A proposal to install drip irrigation for plantations at BF3 dispatch area is in place.

PART—I

Any other particulars for improving the quality of the environment.

- About 700 trees have been planted in 2016-17, in the premises common for 0.54 MTPA Blast Furnace & Sinter Plant. Plantation area is common for 0.54 MTPA Blast furnace & Sinter Plant.
- Some of the roads are concreted & the roads are sprayed with water for dust suppression regularly.
- Stakeholder engagement is carried out, by virtue of which, various socio-economic programs on the front of education, health, infrastructure, agriculture & livelihood development for overall community development in Navelim, Amona & Betki-Khandola villages have been taken.