



Ref No: BAL/Mines/5020

Dated: 09.07.2018

The Member Secretary,  
State Pollution Control Board  
Paribesh Bhawan, A/118  
Nilakantha Nagar Unit-VIII, Bhubaneswar - 751012

Sub: Submission of Environmental Statement in Form-V with respect to our Kaliapani Chromite Mines, M/s Balasore Alloys Ltd for the financial year 2017-18.

Ref: *Consent to Operate Vide No No: 3749/IND\_I-CON-2576 dated 28.03.2018 Consent Order No. 1239*

Dear Sir,

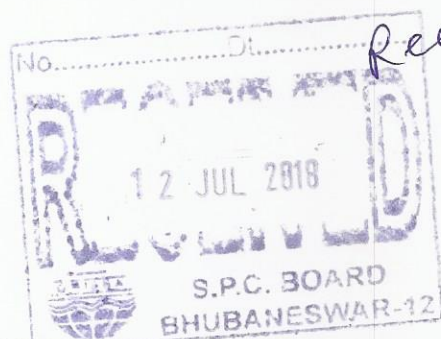
Please find enclosed herewith the Environmental Statement in Form - V for the financial year 2017-18 with respect to our Kaliapani Chromite Mines, M/S Balasore Alloys Ltd, Kaliapani, Jajpur, Odisha for your kind perusal.

Thanking you with regards

Yours faithfully  
For M/s Balasore Alloys Ltd

Swarup Panda  
Sr. Vice President (Corporate Affairs)  
Encl: As above

Copy to: The Regional Officer, State Pollution Control Board, Kalinagnagar, Jajpur, Odisha.



**Kaliapani Chromite Mines, M/s Balasore Alloys Ltd**  
**Environment Statement For the Year 2017-18**

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FORM – V  
(See rule 14)

Environmental Statement for the financial year ending with 31<sup>st</sup> March' 18

**PART – A**

i. Name and address of the owner/occupier of the industry/operation/process :

Mr Amarnath Dhar  
Mines Manager  
Kaliapani Chromite Mine,  
M/s Balasore Alloys Ltd  
At/PO:Kaliapani, Jajpur 755047  
Odisha.  
sukinda\_mines@balasorealloys.com

ii. Industry category :

Primary - Large  
Secondary - Red

iii. Production category :

Open Cast Chromite Mine

iv. Year of establishment :

2000

v. Date of the last Environmental Statement submitted: 04.9.2017

**PART – B**

Water and Raw Material Consumption:

i. Water consumption in m<sup>3</sup>/day

Process (COB Plant): 220 M<sup>3</sup>/Day  
Cooling: Not Applicable  
Domestic: 50 M<sup>3</sup>/Day

Name of Products	Process water consumption per unit of products	
	During the current financial year(2016-17)	During the current financial year(2017-18)
Chrome Ore	No water is required for mining of chrome ore	
Chrome concentrate	2.07 KL/Ton	2.07 KL/Ton

For Balasore Alloys Ltd



Dr. Swarup Panda  
Sr. Vice President-Corporate Affairs  
& Constituted Attorney



**Kaliapani Chromite Mines, M/s Balasore Alloys Ltd**  
**Environment Statement For the Year 2017-18**

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- ii. Raw material consumption: Raw material is consumed only in the C.O.B. Plant.

Name of raw materials*	Name of Products	Consumption of raw material per unit of output	
		During the current last financial year(2016-17)	During the current financial year(2017-18)
Low Grade Chrome Ore	Chrome Concentrate	2.918 MT	2.918 MT

\* Industry may use codes if disclosing details of raw material would violate contractual obligations, otherwise all industries have to name the raw materials used.

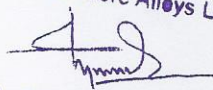
**PART – C**

Pollution discharged to environment/unit of output:

(Parameter as specified in the consent issued)

Pollutants	Quantity of Pollutants discharged (mass/day)	Concentration of Pollutants discharged (mass/volume)	Percentage of variation from prescribed standards with reasons
<b><u>Water</u></b>			
i. pH	7.6	7.30	-18.88%
ii. TSS	111.325kg	43.27 mg/L	-56.73%
iii. Cr <sup>6+</sup>	0.036 kg	0.014 mg/L	-72.00%

M/s Balasore Alloys Ltd.



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<u>Air</u>			
		55.56 $\mu\text{g}/\text{m}^3$	-44.44%
i. PM 10	-	27.91 $\mu\text{g}/\text{m}^3$	-53.48%
ii. PM 2.5		6.3 $\mu\text{g}/\text{m}^3$	-91.75%
iii. SO <sub>2</sub>	-	14.20 $\mu\text{g}/\text{m}^3$	-84.50%
iv. NO <sub>x</sub>			
v. CO	-	0.33 $\mu\text{g}/\text{m}^3$	-91.75 %
vi. O <sub>3</sub>		4.30 $\mu\text{g}/\text{m}^3$	-95.70%
vii. NH <sub>3</sub>		.....	.....
viii. C <sub>6</sub> H <sub>6</sub>		0.52 $\mu\text{g}/\text{m}^3$	-89.06 %
ix. Bap		.....	.....
x. Pb		0.0001 $\mu\text{g}/\text{m}^3$	-99.98%
xi. NI		.....	.....
xii. As		.....	-.....

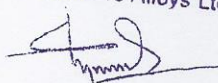
**PART – D**

**HARZARDOUS WASTES:**

(As specified under Hazardous Wastes (Management & Handling Rules, 1989))

Hazardous Wastes	Total Quantity	
	During the previous financial year(2016-17)	During the current financial year(2017-187)
From Process		
i. Used oil	6720 Ltrs	11700 Litre
From Pollution Control Equipments (ETP sludge)	38.97 Metric Ton	62.33 Metric Ton

For Balasore Alloys Ltd.



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 Dr. Vice President-Corporate Affairs  
 & Constituted Attorney



**Kaliapani Chromite Mines, M/s Balasore Alloys Ltd**  
**Environment Statement For the Year 2017-18**

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**PART – E**

**SOLID WASTES:**

Solid Wastes	Total Quantity	
	During the previous financial year(2016-17)	During the current financial year(2017-18)
From Process		
i. Overburden	438060 M <sup>3</sup>	831494 M <sup>3</sup>
ii. Tailing Pond Sludge	51104.57 Ton	69333 Ton
From Pollution Control Facility	Nil	Nil
Quantity recycled or reutilized within the unit	Nil	Nil

**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:

**I. Solid Waste:**

**Overburden:** Solid wastes in form of overburden and sludge of the tailing pond are generated during development of open cast mines and operation of Chrome Ore Beneficiation Plant. The overburden is being dumped on non-mineralized zone as per the mining plan approved by Indian Bureau of Mines.

**Tailing Pond Sludge:** The sludge of the tailing pond, after drying, are taken to the tailing dump, where these are dumped on a impervious platform made up of concrete and HDPE lining by providing retaining wall along the dump with settling pit and leachate collection pit. The collected run-off and leachate are diverted to the ETP for treatment with pumping arrangement.

For Balasore Alloys Ltd.



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**II. Hazardous Waste:**

**ETP Sludge:** The sludge from the ETP has been disposed to Common Hazardous Waste treatment Storage Disposal facility (M/s Ramky) present at Jajpur, Odisha.

**Used Oil:** The used oil generated at mines collected in leak proof barrels and stored at hazardous waste yard and disposed to OSPCB authorized vendors as per the guidelines.

**PART – G**

**In respect of the pollution abatement measures taken up on conservation of natural resources and on the cost of production**

- To suppress the fugitive dust generation, regular sprinkling of water is being done on haul roads and transporting roads.
- The dead overburden dump surfaces are covered with intensive plantation. For treatment of mine discharge water, run-off water during rain an Effluent Treatment Plant is in operation.
- Regular maintenance of vehicle deployed at mines is going on for minimizing the noise generation and other emission. For the people in the noise prone areas protection equipments like ear muffs have been provided.
- Oil & Grease pit has been provided at vehicle washing center and after separation oil and grease has been stored at hazardous waste yard

**PART – H**

**Additional measures/investment proposal for environmental protection including abatement of pollution:**

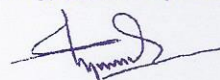
- The dump slopes of the dead dumps will be covered with coir matting, grass turfing, grass development through seed dispersion and massive plantation.
- Hexavalent chromium content of the mine water is being/will be reduced by treatment of at ETP.
- All the surface runoff of mines has been channelized to ETP for treatment before disposing outside.
- Plantation at outside ML area and inside ML area.

**PART – I**

**Any other particular for improving the quality of the environment**

- Gabion wall is constructed at toe of dump-1 to arrest wash off from dump slope.
- Dump slope has been stabilized by plantation of Vertiver and installation of coir mat.
- Construction of wheel washing bay at mine gate to avoid chromite contamination of by the dust carried by wheels of trucks.

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