नालको NALCO

(AN ISO-9001, ISO-14001 & OHSAS-18001 CERTIFIED ORGANIZATION)

Ref. No.: E&S/02/005/ 166
Date: 18.09.2025

254277 (Office)
Fax No. :: 06853 254277

To

The Member Secretary,

Odisha State Pollution Control Board,

Paribesh Bhawan, A/118, Neelakantha Nagar,

Unit-VIII, BHUBANESWAR – 751 001, Odisha.

Sub :: Annual Environmental Statement of Alumina Refinery, M/s NALCO Damanjodi. for the year ending with 31st March 2025.

Dear Sir,

Please find enclosed herewith the Environmental Statement in the prescribed format for the year ending 31st March 2025 of NALCO, Alumina Refinery.

This is for your kind information and record.

Thanking you,

Yours faithfully,
for NATIONAL ALUMINIUM CO. LTD.,

22/9/25

(Ashish Senapati)
CGM (AR)

ASHISH SENAPATI
Chief General Manager (AR)

Encl.:: as above.

CC ::(i) Director
Ministry of Environment & Forests, Govt. of India,
Eastern Regional Office, A/3-Chandrasekharpur,
BHUBANESWAR – 751 023 (Odisha).

(ii)The Regional Officer,
Odisha State Pollution Control Board, BSNL Office
Koraput

FORM - V

[See Rule – 14]

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR ENDING THE 31ST MARCH 2025 FOR ALUMINA REFINERY OF NATIONAL ALUMINIUM COMPANY LIMITED, DAMANJODI

PART – A

(i)	Name & Address of the Owner/Occupier of the Industry operation or process:	Sri. Pankaj Kumar Sharma, Director (Production), National Aluminium Company Limited P/1 Nayapalli BHUBANESWAR – 751 013(Orissa).
(ii)	Industry Category; Primary (STC Code) Secondary (SIC Code)	Primary
(iii)	Production Capacity (Units)	22,75,000 MT of Calcined Alumina.
(iv)	Year of Establishment	1981
(v)	Date of the last environmental statement submitted.	Dt. 21/05/2024

PART – B

WATER AND RAW MATERIALS CONSUMPTION

(i) Water & Raw Material Consumption

Particulars / Year	2024-25 (m^3/day)
Process	5815
Cooling	10975
Domestic	7466

Name of Products	Process Water Consumption per unit of product output (m^3/T)	
	During the financial year 2023-24	During the financial year 2024-25
Calcined Alumina	2.38	2.16

(ii) **Raw Material Consumption**:

Name of Raw Material	Name of Product	Consumption of Raw Materials per unit of output	
		During 2023-24	During 2024-25
Bauxite (T/T)	Calcined Alumina	3.51	3.48
Caustic Soda (Kg/T)		124.54	116.36
Coal (T/T)		0.660	0.692
Fuel Oil (Ltr/T)			
For Boilers		7.15	9.92
For Calciner		77.44	77.50
Lime (Kg/T)		29.98	35.70
CGM(Kg/T)		0.146	0.030
Elect Energy, (GJ/MT)		1.153(320.34 kwh)	1.182(328.41 kwh)
Treated Water (m3/T)		2.38	2.16
Syn. Flocc in settler(gm/T)		282.21	341.85
TTD Flocculant (gm/T)		38.228	31.718

(Specific Consumptions are reported per MT of Hydrate as Calcined Alumina produced).

PART – C
POLLUTION DISCHARGED 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)	% of Deviation from Standards.
(a) Water			
Ash Pond Overflow Water			
	There is no overflow during the period		
STP Overflow Water			
	There is no discharge during the period		
(b) Air			
Boiler Stack	2.41 MT/day	SPM(mg/Nm^3):85.10	(-)14.90% (assigned standard of 100 mg/m3)
Calciner Stack	0.251 MT/day	SPM (mg/Nm^3): 24.99	(-) 50.02 % (assigned standard of 50mg/m^3)
Ambient Air		PM_{10} (mg/Nm^3): 59.45	(-) 40.55% (assigned standard of 100mg/m^3
		PM $_{2.5}$ (mg/Nm^3):38.66	(-) 35.56% (assigned standard of 60mg/m^3

PART – D
HAZARDOUS WASTES

(As specified under Hazardous Waste Management & Handling Rules)

Hazardous Waste		Total Quantity	
		During FY 2023-24	During FY 2024-25
HAZARDOUS WASTE: Authorization No. IND/IV/HW-01/5819 Dt.24.03.2025			
01	Used /Spent Oil (KL)	88.56	106.45
02	Wastes or residues containing oil (MT)	0.038	2.8
03	Discarded Asbestos (MT)	10.31	48.24
04	Discarded containers/ liners /barrels contaminated with Hazardous Wastes/chemicals (Numbers)	4048	2404
05	Spent Resin (MT)	NIL	5

PART – E
SOLID WASTES

	TOTAL QUANTITY (MT)	
	During FY 2023-24	During FY 2024-25
(a) From Process		
Red Mud	3411271	3283273
Fly Ash	680358	738182
Lime Grit	25239.86	26535
(b) From Pollution Control Facilities	NIL	NIL
(C) (1) Quantity recycled or reutilized within the unit		
Red Mud	--	--
Fly Ash	684739	57884.92
Lime Grit	-	-
(2) Quantity Sold		
Red Mud	--	--
Fly Ash	--	--
Lime Grit	2809.28	3578.600
(3) Quantity Disposed		
Red Mud	3411271	3283273
Fly Ash	-	-
Lime Grit	-	-

- Lime grit is used for Fly ash brick making inside plant. It is also sold to outsiders for fly ash brick making
- Fly Ash & Red Mud is disposed to Ash Pond & Red Mud pond respectively. Fly ash is utilized in cement making, brick making, low lying area filling etc.
- Fly Ash recycled/reutilized for the year includes from Pond Ash also.

PART-F

(Please specify the characterization (in terms of composition and quantum) of hazardous as well as Solid Wastes and indicate disposal practice adopted for both these categories of wastes)

(a) SOLID WASTE:			
Sl No.	Name of the Waste	Characterization	Disposal practices
01	Lime Grit	Wastes of lime generated after causticisation containing CaO, SiO_2 and traces of soda.	Sold to outside agencies for brick making. Balance, if any, is used for fly Ash brick making and for disposal to red mud pond.
02	Red Mud	Mud generated after extraction of Alumina from Bauxite ore by Bayer's process. It contains Al_2O_3, Fe_2O_3, TiO_2, SiO_2, Na_2O, CaO, P_2O_5, V_2O_5 & MnO etc. %	Disposed to Red Mud Pond.
03	Fly Ash	Residue in form of fine particles left after combustion of pulverized Coal mostly contains SiO_2 (55 - 60%), Al_2O_3 (25-30%) and other heavy metals in traces.	(i)Disposed to Ash Pond in slurry form. (ii)Fly Ash is used for cement making, brick making (inside & outside),road & area development and agricultural activities . Pond Ash is utilized for low lying area filling
(b) **HAZARDOUS WASTE:**			
01	Used /Spent Oil	Lubricating oil, Transformer Oil containing, Hydrocarbon, Sediments & moisture	Auctioned to authorized recyclers/ reprocessors.
02	Wastes or residues containing oil	Oil soaked cotton or used cotton waste.	Currently stored in Alumina Refinery Nalco. Stored waste will be Disposed to authorized CHWSTDF.
03	Discarded Asbestos	Waste or Damaged Asbestos sheets, mostly used for roofing & partition etc.	Currently very low amount of this waste is generating thus stored in Alumina Refinery Damanjodi. Soon the stored asbestos will be Disposed to certified CHWSTDF.
04	Discarded liners/ containers /barrels contaminated with Haz.wastes/chemicals	Synthetic containers for containing chemical/additives/ flocculants/ reagents etc..	Disposed to authorized recycler/reuser.
05	Spent Resin	Complex Organic Compound used for ion exchange process of water at Demineralization Plant..	Disposed earlier to authorized co-processing cement Industries. Currently stored in Plant will be disposed to authorized authorizes soon(CHWSTDF).

PART - G

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

- Adopted zero discharge concept and followed recycling & reuse of treated & reclaimed water
- Supply of Fly Ash to various brick manufacturers and production of fly Ash brick from captive fly ash brick plant for internal consumption.
- Utilisation of fly ash for different purposes like cement making, low lying land filling, road development purposes. The status of fly Ash utilization during the year is 7.84%
- Periodic visit of experts from Indian Institute of Science, Bangalore to assess Dam Stability
- Disposal (auction) of E Waste to authorized recycler as per E Waste (Management & Handling) Rule

PART - H

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

- Renovation and upgradation of of ESPs for reduction of particulate emission
- Plantation/ afforestation made during the year and total 15,092 numbers of saplings have been planted around the plant, red mud pond, ash pond, periphery and ash filling areas..
- Both the STP-III and STP-IV have been renovated as per the guideline of CPCB.
- Disposal of Hazardous waste to CHWSTDF.
- Disposal of used plastic waste filter clothe to cement plant for co-processing.
- Utilization of domestic solid waste into the Vermicomposting System
- Provision of three Rainwater Harvesting unit in Township area.
- Dry fly ash storage for external fly ash takers.

PART - I

(Any other particulars for improving the quality of the Environment)

- Monthly Hoisting of environmental parameters in the organization's web site.
- Provision made for display of Real-time online monitoring observations to SPCB & CPCB Server
- Installation of additional sprinklers for dust suppression at Red Mud disposal site.
- Periodic evaluation & monitoring of environmental parameters as per statutory guidelines.