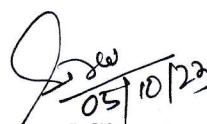


**STACK EMISSION REPORT OF FUME TREATMENT PLANT
FOR THE MONTH SEPTEMBER 2023**

LOCATION	DATE OF TEST	STACK DISCHARGE VOLUME Nm ³ /hr	GASEOUS FLUORIDE mg/ Nm ³	PARTICULATE FLUORIDE mg/ Nm ³	TOTAL FLUORIDE mg/ Nm ³	TOTAL PARTICULATE mg/ Nm ³
FTP-1	01.09.2023	610327	1.58	0.45	2.03	18.65
	21.09.2023	690841	1.54	0.61	2.15	26.08
FTP-2	05.09.2023	698162	0.79	0.12	0.91	27.67
	21.09.2023	777653	0.98	0.46	1.44	26.31
FTP-3	01.09.2023	739153	1.00	0.20	1.20	17.59
	23.09.2023	735797	1.18	0.30	1.48	18.06
FTP-4	02.09.2023	735123	1.09	0.22	1.31	19.27
	22.09.2023	740096	1.33	0.22	1.55	35.22
FTP-5	02.09.2023	737233	0.49	0.34	0.83	26.99
	22.09.2023	759443	0.79	0.35	1.14	36.31
FTP-6	04.09.2023	768936	0.44	0.22	0.66	26.10
	23.09.2023	738775	0.54	0.54	1.08	30.87
FTP-7	04.09.2023	883892	0.60	0.59	1.19	36.36
	25.09.2023	887237	1.17	0.31	1.48	39.27
FTP-8	05.09.2023	891806	1.19	0.20	1.39	39.81
	25.09.2023	895041	0.84	0.35	1.19	46.65

NOTE:

- Total Fluoride emission 0.155 Kg/ Ton of Aluminum produced, against total hot metal Production 37094 MT.
- Orissa State Pollution Control Board Norm :**
Total Fluoride emission: 0.300 Kg / Ton of Aluminum produced
Total particulate:100 mg/Nm³.
Stack discharge volume: 9,93,600 Nm³/hr


Authorised Signatory
 सुधीत कुमार धल/S.K.Dhal
 प्रबंधक (लेब)/Manager (Lab)
 NALCO, Smelter Plant, Angul

**STACK EMISSION REPORT OF BAKE OVEN PLANT
FOR THE MONTH OF SEPTEMBER 2023**

LOCATION	DATE OF TEST	STACK DISCHARGE VOLUME Nm ³ /hr	GASEOUS FLUORIDE mg/ Nm ³	PARTICULATE FLUORIDE mg/ Nm ³	TOTAL FLUORIDE mg/ Nm ³	TOTAL PARTICULATE MATTER mg/ Nm ³
BO-I	06.09.2023	173605	1.78	0.20	1.98	42.09
	28.09.2023	153890	2.87	0.27	3.14	18.68
BO-II	07.09.2023	200581	1.08	0.44	1.52	46.56
	28.09.2023	200626	1.69	0.60	2.29	48.10

I. Total Fluoride emission **0.018 Kg/ Ton** of Aluminium produced, against total hot metal Production 37094 MT.

II. **Orissa State Pollution Control Board Norm:**

Total Fluoride emission: 0.1 kg/Ton of Aluminium produced

Total particulate: 50 mg/Nm³.

Stack discharge volume BO-I: 1,60,000 Nm³/hr

Stack discharge volume BO-II: 2,00,880 Nm³/hr


05/10/23
Authorised Signatory
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9830093976

DOC NO : QLS/SAMP/08-B/00

TEST REPORT

Name & Address Of the Customer : M/s. National Aluminium Company Limited Smelter Plant Division, Angul, Odisha- 759145	Report No. : QLS/MR/A/23-24/C/954 Date : 23.09.2023 Sample No. : QLS/MR/A/23-24/954-963 Sample Description : Stack Flue Gas Date of Performance(s) : 19.09.2023-23.09.2023
Ref No & Date: SMLT/T&C/S20/OMC-5639/5300007582/WO/7329, Dated. 13.04.2023	

Analysis Result

Sampling Done by: S.Poddar					Sampling done as per : EPA/IS			
Sample No.	Location	Date of Sampling	Time (hrs.)	SO ₂ (mg/Nm ³)	NO _x (mg/Nm ³)	Temp. (°C)	Velocity (m/s)	Discharge Volume (Nm ³ /hr.)
954	FTP-1	11.09.2023	11:30	47.7	30.6	104	19.92	809609
955	FTP-4		15:17	59.6	38.5	102	18.53	759229
956	FTP-3		10:01	61.3	33.8	104	19.72	803625
957	FTP-2	12.09.2023	12:03	41.0	32.1	105	19.78	804013
958	BO-1	14.09.2023	10:50	206.3	78.3	96	11.08	265326
959	BO-2	14.09.2023	12:17	223.5	83.0	98	11.87	282659
960	FTP-5	12.09.2023	15:30	40.7	30.0	101	12.52	936214
961	FTP-6	13.09.2023	10:05	56.7	33.3	104	11.73	871471
962	GTC-7		12:10	46.5	29.3	102	11.42	991640
963	GTC-8		15:35	52.0	30.3	101	12.13	1056038
METHOD OF TEST REFERENCE								
EPA Part-2 : for Temperature, Velocity & Discharge Volume								
EPA Part-6 : for Sulphur dioxide								
EPA Part-7 : for Oxides of Nitrogen								

Report Prepared By:

for Qualissure Laboratory Services

Reviewed & Authorized By



Benimadhab Gorai, Chemist
(Authorized Signatory)

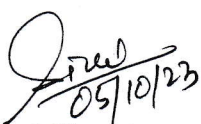
-----End of the Report-----

- The results relate only to the item(s) tested.
- This Test Report shall not be reproduced without the permission of Qualissure Laboratory Services
- The reserved part of sample(s). except perishable sample(s), shall be retained for 30 days from the date of issue of the Test Report

F60G10/QC/4.5.1
Issue No 001.Rev 00
Dt. 04.07.2013

**FUGITIVE EMISSION OF FLUORIDE IN POTROOMS
FOR THE MONTH OF SEPTEMBER 2023**

Location	Date of Sampling	No of Pots in operation	Fugitive emission in mg/m ³ (Average)	Average fugitive emission mg/m ³	Average fugitive emission in kg/T of Al from pot rooms (Kg/T of Al)	OSPCB NORM: Total Fugitive emission from Pot rooms (Kg/T of Al)
Pot room-A	12.09.2023 14.09.2023	116	0.60	0.721	0.161	0.40
Pot room-B	12.09.2023 14.09.2023	118	0.79			
Pot room-C	13.09.2023 15.09.2023	117	1.26			
Pot room-D	13.09.2023 15.09.2023	119	0.65			
Pot room-E	16.09.2023 18.09.2023	119	0.71			
Pot room-F	16.09.2023 18.09.2023	116	0.45			
Pot room-G	09.09.2023 11.09.2023	120	0.71			
Pot room-H	09.09.2023 11.09.2023	120	0.60			


05/10/23
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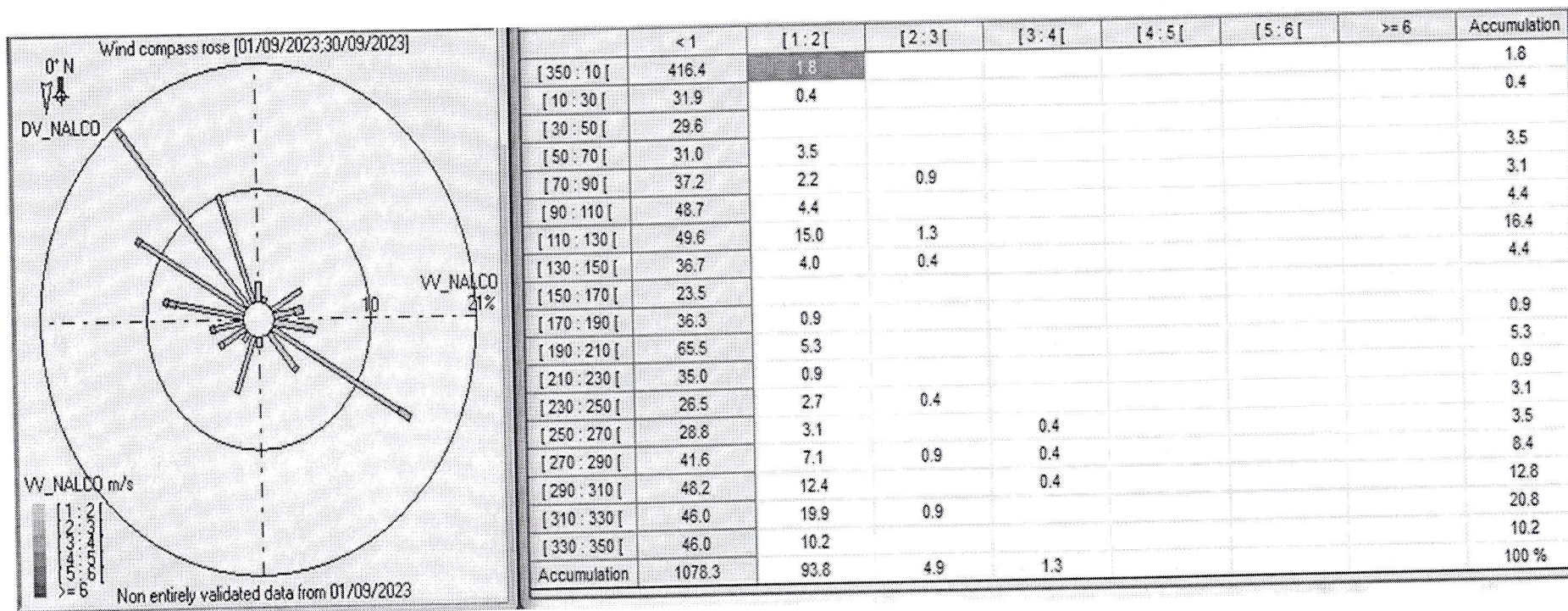
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NALCO, Smelter Plant, Angul

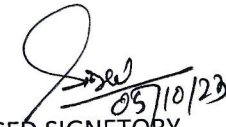
MAXIMUM & MINIMUM TEMPERATURE AND RAIN FALL			
SEPTEMBER-2023			
DATE	MAXIMUM TEMP. (deg.C)	MINIMUM TEMP. (deg C)	RAIN FALL (mm)
01-Sep	35.0	27.0	2.7
02-Sep	35.0	26.0	10.0
03-Sep	36.0	25.0	23.0
04-Sep	30.0	25.0	1.2
05-Sep	32.0	25.0	20.0
06-Sep	34.0	26.0	1.8
07-Sep	29.0	25.0	22.1
08-Sep	31.0	24.0	0.0
09-Sep	33.0	25.0	0.0
10-Sep	35.0	26.0	0.0
11-Sep	33.0	26.0	7.3
12-Sep	34.0	25.0	5.5
13-Sep	32.0	26.0	26.0
14-Sep	33.0	26.0	9.4
15-Sep	35.0	25.0	0.0
16-Sep	34.0	26.0	1.5
17-Sep	34.0	26.0	0.0
18-Sep	35.0	24.5	54.8
19-Sep	35.0	25.0	7.3
20-Sep	32.0	26.0	4.8
21-Sep	32.0	25.0	13.3
22-Sep	33.0	25.0	6.2
23-Sep	33.0	25.0	3.0
24-Sep	34.0	25.0	0.0
25-Sep	32.0	25.0	3.3
26-Sep	35.0	26.0	0.0
27-Sep	34.0	26.0	14.6
28-Sep	35.0	26.0	0.0
29-Sep	35.0	25.0	0.0
30-Sep	35.0	25.0	30.0
Max. Temp. for the month in Deg.C		36.0	
Min. Temp. for the month in Deg.C.		24.0	
Total rainfall (mm)		267.8	YEAR 2023: 1351.1


 05/10/23
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WINDROSE FOR THE MONTH OF SEPTEMBER 2023




 05/10/23
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F60G4/QC/4.5.1
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**ANALYSIS REPORT OF GROUND WATER AND SURFACE WATER
FOR THE MONTH SEPTEMBER 2023**

Sl. No.	Sampling place	Approx. Distance from Storm water Channel (in meter)	Fluoride mg/l (Norm 1.5)	pH (Norm 6.5-9.0)
1	Open Pond (Kulad)	200	*	*
2	Open Pond (Kulad)	100	*	*
3	Bore Well (Kulad)	100	0.68	7.8
4	Open Well Kulad)	75	1.0	7.7
5	Open Pond (Bonda)	100	1.34	7.4
6	Open well (Bonda)	100	0.53	6.8
7	Open Pond (Bonda – Rly. Culvert)	15	1.43	7.1
8	Tube Well (Bonda)	100	0.86	6.8
9	Open well (Bonda)	50	*	*
10	Open Well (Chowadhia)	10	*	*
11	Open Well (Chowadhia)	15	*	*
12	Tube Well (Chowadhia)	100	*	*
13	Open Pond (Chowadhia)	100	1.39	6.8
14	Open Pond (Banarpal)	200	0.71	7.3
15	Open Pond (Banarpal)	200	0.73	6.8

- Sample could not be collected as access to the location was restricted.


05/10/23
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ANALYSIS REPORT OF GROUND AND SURFACE WATER
(SURROUNDING VILLAGES OF SMELTER PLANT)
FOR THE MONTH OF SEPTEMBER 2023

Sl. No.	Sampling place	Direction with respect to Smelter Plant	Approx. Distance from Smelter Plant Km	Fluoride mg/l (Norm 1.5)	pH (Norm 6.5-9.0)
1	TURANGA TUBEWELL	NW	4	0.53	7.1
2	KURUDOL OPEN WELL	NW	5	0.64	7.0
3	BALARAM PRASAD TUBE WELL	N	5	0.44	6.5
4	GOTAMARA OPEN WELL	NE	6	0.37	6.8
5	TULASIPAL OPEN WELL	SE	4	0.74	6.8
6	LANGULIABERA OPEN WELL	S	3	1.08	7.9
7	GOPINATHPUR OPEN WELL	SW	2.5	0.86	7.1
8	ANKULA TUBE WELL	W	2	0.78	6.9


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F60G7/QC/4.5.1
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**ANALYSIS OF TREATED EFFLUENT FROM SEWAGE TREATMENT PLANT
(INSIDE TOWNSHIP)
FOR THE MONTH OF SEPTEMBER 2023**

Sample Collected on: 20.09.2023

Sl. No	Parameters	Units	Norms (max)	Analysis
1	pH	-	6.5 to 9.0	7.2
2	Suspended solids	mg/l	100	06
3	BOD 3 days at 27 deg. C	mg/l	30	05
4	Fecal Coliform (Sample collected on 30.09.2023)	MPN /100ml	1000	97


05/10/23
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F60G7/QC/4.5.1
Issue No 001.Rev 00
Dt.02.07.2015

**ANALYSIS OF TREATED EFFLUENT FROM SEWAGE TREATMENT PLANT
(NEAR CISF BARRACK)
FOR THE MONTH OF SEPTEMBER 2023**

Sample Collected on: 20.09.2023

Sl. No	Parameters	Units	Norms (max)	Analysis
1	pH	-	6.5 to 9.0	7.1
2	Suspended solids	mg/l	100	08
3	BOD 3 days at 27 deg. C	mg/l	30	06
4	Fecal Coliform (Sample collected on 30.09.2023)	MPN/100ml	1000	92


05/10/23
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F61B/QC/4.5.1
ISSUE No.01 REV00
Dt.04.07.2013

BORE WELL ANALYSIS REPORT

FOR THE MONTH OF SEPTEMBER 2023

Sl No.	Location	Date of Collection and analysis.	pH (Norm 6.5-9.0)	Fluoride as F mg/l (Norm 1.5)	Cyanide as CN mg/l (Norm 0.2)
1	Bore well -3 (Hazardous waste land fill)	09.09.2023	7.6	0.85	ND
2	Bore well -4 (Hazardous waste land fill)	09.09.2023	7.7	0.73	ND
3	Bore well -5 (Hazardous waste land fill)	09.09.2023	7.6	1.22	ND

Note:

1) ND – Not detectable.


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FORAGE FLUORIDE MONITORING (GRASS SAMPLES) REPORTS AROUND SMLETER PLANT

FOR THE MONTH OF SEPTEMBER 2023

SL. No	Location	Direction w.r.t Smelter Plant	Date of collection of sample	Fluoride content (dry basis) in ppm for the month of SEPT' 23	Fluoride content (dry basis) in ppm for the month of AUG' 23	Average of two consecutive months in ppm
1	Bonda	South-East	04.09.2023	38.2	38.5	38.35
2	Tulsipal	South-East	12.09.2023	37.9	38	37.95
3	Languliabeda	South-West	12.09.2023	39.1	37.5	38.3
4	Banarpal	East	04.09.2023	38.3	39.5	38.9
5	Turang	West	05.09.2023	39.7	38.5	39.1
6	Balaramprasad	North	06.09.2023	38.6	38	38.3

Norm- For single month - 80ppm
Average of two consecutive months - 60 ppm
Annual average - 40 ppm


05/10/23
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