

**STACK EMISSION REPORT OF FUME TREATMENT PLANT
FOR THE MONTH OCTOBER 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	03.10.2023	734562	1.22	0.57	1.79	26.64
	21.10.2023	738434	0.65	0.38	1.03	30.46
FTP-2	03.10.2023	769162	1.87	1.45	2.32	28.68
	21.10.2023	753490	0.47	0.35	0.82	18.35
FTP-3	04.10.2023	733250	1.53	0.48	2.01	36.36
	23.10.2023	741896	1.21	0.22	1.43	22.97
FTP-4	04.10.2023	745373	1.06	0.29	1.35	18.11
	23.10.2023	751079	1.31	0.16	1.47	24.02
FTP-5	05.10.2023	781049	1.57	0.83	2.40	36.90
	25.10.2023	755534	0.78	0.92	1.70	36.26
FTP-6	05.10.2023	784800	0.68	0.34	1.02	37.84
	26.10.2023	742758	0.67	0.33	1.00	19.40
FTP-7	06.10.2023	889260	1.06	0.28	1.34	37.16
	26.10.2023	921583	0.80	0.36	1.16	33.65
FTP-8	06.10.2023	920686	0.57	0.22	0.79	36.16
	25.10.2023	929876	0.54	0.31	0.85	39.28

NOTE:

1. Total Fluoride emission 0.169 Kg/ Ton of Aluminum produced, against total hot metal Production 38617 MT.
2. **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


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 NALCO, Smelter Plant, Angul

**STACK EMISSION REPORT OF BAKE OVEN PLANT
FOR THE MONTH OF OCTOBER 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	07.10.2023	159329	1.75	0.32	2.07	37.87
	28.10.2023	159416	1.11	0.26	1.37	48.71
BO-II	09.10.2023	200311	1.60	0.33	1.93	48.22
	30.10.2023	200119	1.00	0.13	1.13	29.44

I. Total Fluoride emission **0.014 Kg/ Ton** of Aluminum produced, against total hot metal Production 38617 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


04/11/23
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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/1107 Date : 23.09.2023 Sample No. : QLS/MR/A/23-24/1107-1116 Sample Description : Stack Flue Gas Date of Performance(s) : 13.10.2023-17.10.2023
Ref No & Date: SMLT/T&C/S20/OMC-5639/5300007582/WO/7329, Dated. 13.04.2023	

Analysis Result

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.)
1107	FTP-1	11.10.2023	14.25	38.4	27.5	98	18.25	752792
1108	FTP-2		15.05	42.9	36.7	96	16.42	680887
1109	FTP-3		12.14	55.0	34.2	100	15.70	644204
1110	FTP-4		11.10	46.5	32.2	98	15.88	655032
1111	FTP-5		10.15	32.8	24.4	100	9.14	683241
1112	FTP-6	10.10.2023	15.19	51.1	27.0	102	8.76	651299
1113	GTC-7		14.05	39.6	28.7	100	10.57	920024
1114	GTC-8		12.05	48.8	31.5	101	10.14	880142
1115	B.O-1		10.15	168.8	69.5	101	8.36	196991
1116	B.O-2		11.10	185.9	76.7	100	9.01	212814
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

Bishu Priya Banerjee, Chemist
(Authorized Signatory)

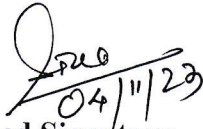
-----End of the Report-----

- 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
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**FUGITIVE EMISSION OF FLUORIDE IN POTROOMS
FOR THE MONTH OF OCTOBER 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	16.10.2023 18.10.2023	116	0.58	0.623	0.138	0.40
Pot room-B	16.10.2023 18.10.2023	118	0.60			
Pot room-C	11.10.2023 17.10.2023	115	0.60			
Pot room-D	11.10.2023 17.10.2023	119	0.58			
Pot room-E	12.10.2023 14.10.2023	119	0.48			
Pot room-F	12.10.2023 14.10.2023	116	0.52			
Pot room-G	13.10.2023 19.10.2023	120	0.76			
Pot room-H	13.10.2023 19.10.2023	120	0.86			


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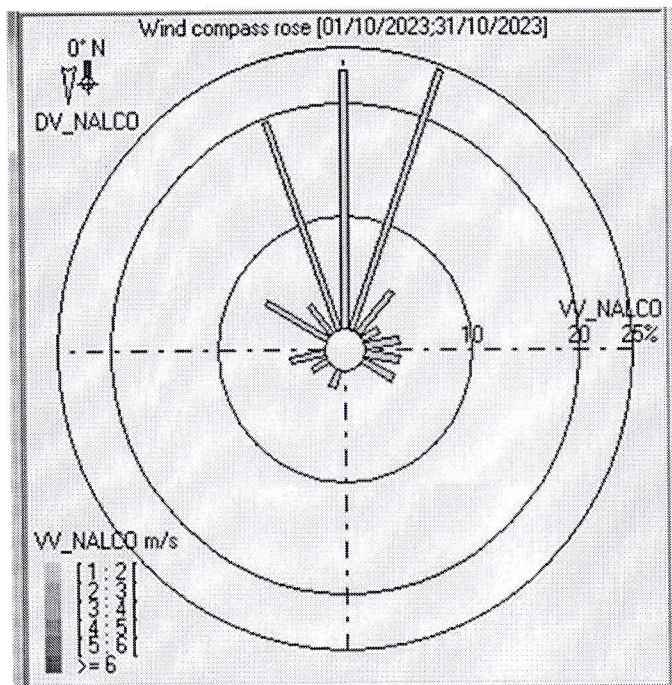
MAXIMUM & MINIMUM TEMPERATURE AND RAIN FALL**OCTOBER-2023**

DATE	MAXIMUM TEMP. (deg.C)	MINIMUM TEMP. (deg C)	RAIN FALL (mm)
01-Oct	33.0	25.0	32.0
02-Oct	33.0	25.0	13.0
03-Oct	31.0	26.0	1.8
04-Oct	33.0	27.0	0.0
05-Oct	35.0	26.0	0.0
06-Oct	36.0	26.5	10.3
07-Oct	36.0	26.0	0.0
08-Oct	36.0	25.0	0.0
09-Oct	36.0	26.0	0.0
10-Oct	36.0	26.0	0.0
11-Oct	36.0	26.0	0.0
12-Oct	36.0	25.0	0.0
13-Oct	34.0	25.0	0.0
14-Oct	34.0	24.0	0.0
15-Oct	35.0	24.0	0.0
16-Oct	35.0	25.0	0.0
17-Oct	34.0	25.0	0.0
18-Oct	34.0	24.0	0.0
19-Oct	32.0	24.0	0.0
20-Oct	32.0	24.0	0.0
21-Oct	32.0	23.0	0.0
22-Oct	33.0	22.0	0.0
23-Oct	33.0	22.0	0.0
24-Oct	32.0	23.0	0.0
25-Oct	34.0	23.0	0.0
26-Oct	33.5	21.0	0.0
27-Oct	32.0	21.5	0.0
28-Oct	32.5	20.0	0.0
29-Oct	32.0	20.0	0.0
30-Oct	32.0	21.0	0.0
31-Oct	32.0	22.0	0.0
Max. Temp. for the month in Deg.C		36.0	
Min. Temp. for the month in Deg.C.		20.0	
Total rainfall (mm) -		57.1	YEAR 2023: 1498.2

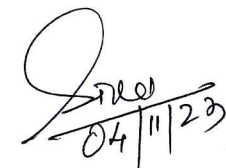
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WINDROSE FOR THE MONTH OF OCTOBER 2023



	< 1	[1 : 2 [	[2 : 3 [	[3 : 4 [	[4 : 5 [	[5 : 6 [	>= 6	Accumulat
[350 : 10 [	301.6	23.0						23.0
[10 : 30 [	273.8	24.6						24.6
[30 : 50 [	95.1	4.9						4.9
[50 : 70 [	78.7	1.6						1.6
[70 : 90 [	75.4	3.3						3.3
[90 : 110 [	103.3	3.3						3.3
[110 : 130 [	63.9	3.3						3.3
[130 : 150 [	57.4							
[150 : 170 [	29.5							
[170 : 190 [	68.9							
[190 : 210 [	83.6	1.6						1.6
[210 : 230 [	113.1							
[230 : 250 [	218.0	1.6						1.6
[250 : 270 [	337.7	3.3						3.3
[270 : 290 [	350.8							
[290 : 310 [	444.3	6.6						6.6
[310 : 330 [	306.6	3.3						3.3
[330 : 350 [	247.5	19.7						19.7
Accumulation	3249.2	100.0						100 %


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**ANALYSIS REPORT OF GROUND WATER AND SURFACE WATER
FOR THE MONTH OCTOBER 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	0.28	6.5
4	Open Well Kulad)	75	0.33	6.7
5	Open Pond (Bonda)	100	1.37	7.8
6	Open well (Bonda)	100	0.58	6.5
7	Open Pond (Bonda – Rly. Culvert)	15	1.42	7.5
8	Tube Well (Bonda)	100	1.03	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	0.57	6.7
14	Open Pond (Banarpal)	200	0.81	7.0
15	Open Pond (Banarpal)	200	0.65	7.1

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


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ANALYSIS REPORT OF GROUND AND SURFACE WATER
(SURROUNDING VILLAGES OF SMELTER PLANT)
FOR THE MONTH OF **OCTOBER 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	1.38	7.2
2	KURUDOL OPEN WELL	NW	5	0.72	6.6
3	BALARAM PRASAD TUBE WELL	N	5	0.51	6.6
4	GOTAMARA OPEN WELL	NE	6	0.45	6.8
5	TULASIPAL OPEN WELL	SE	4	1.03	6.7
6	LANGULIABERA OPEN WELL	S	3	1.16	7.2
7	GOPINATHPUR OPEN WELL	SW	2.5	1.18	7.0
8	ANKULA TUBE WELL	W	2	0.96	6.7


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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 OCTOBER 2023**

Sample Collected on: 09.10.2023

Sl. No	Parameters	Units	Norms (max)	Analysis
1	pH	-	6.5 to 9.0	7.3
2	Suspended solids	mg/l	100	09
3	BOD 3 days at 27 deg. C	mg/l	30	05
4	Fecal Coliform (Sample collected on 30.10.2023)	MPN /100ml	1000	96


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F60G7/QC/4.5.1
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Dt.02.07.2015

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

Sample Collected on: 09.10.2023

Sl. No	Parameters	Units	Norms (max)	Analysis
1	pH	-	6.5 to 9.0	8.0
2	Suspended solids	mg/l	100	18
3	BOD 3 days at 27 deg. C	mg/l	30	02
4	Fecal Coliform (Sample collected on 30.10.2023)	MPN/100ml	1000	92


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F61B/QC/4.5.1
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BORE WELL ANALYSIS REPORT

FOR THE MONTH OF OCTOBER 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)	09.10.2023	8.1	1.00	ND
2	Bore well -4 (Hazardous waste land fill)	09.10.2023	8.0	0.81	ND
3	Bore well -5 (Hazardous waste land fill)	09.10.2023	7.9	1.34	ND

Note:

- 1) ND – Not detectable.


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FORAGE FLUORIDE MONITORING (GRASS SAMPLES) REPORTS AROUND SMLETER PLANT

FOR THE MONTH OF OCTOBER 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 OCT' 23	Fluoride content (dry basis) in ppm for the month of SEPT' 23	Average of two consecutive months in ppm
1	Bonda	South-East	11.10.2023	38	38.2	38.1
2	Tulsipal	South-East	12.10.2023	38.2	37.9	38.05
3	Languliabeda	South-West	12.10.2023	39	39.1	39.05
4	Banarpal	East	06.10.2023	39.6	38.3	38.95
5	Turang	West	04.10.2023	37.75	39.7	38.725
6	Balaramprasad	North	03.10.2023	36.2	38.6	37.4

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


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