

**STACK EMISSION REPORT OF FUME TREATMENT PLANT
FOR THE MONTH JULY 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	05.07.2023	717160	1.07	0.48	1.55	34.00
	21.07.2023	740971	0.71	0.46	1.17	27.99
FTP-2	03.07.2023	758809	1.40	0.15	1.55	39.86
	21.07.2023	777265	0.75	0.27	1.02	26.05
FTP-3	01.07.2023	744912	1.15	0.32	1.47	18.67
	22.07.2023	720107	0.86	0.26	1.12	37.64
FTP-4	01.07.2023	743817	1.62	0.57	2.19	14.30
	22.07.2023	747233	1.19	0.24	1.43	28.70
FTP-5	05.07.2023	752340	0.67	0.59	1.26	35.12
	25.07.2023	738980	3.98	0.36	4.34	43.14
FTP-6	03.07.2023	740979	0.96	0.87	1.83	50.67
	24.07.2023	784788	1.33	0.36	1.69	34.17
FTP-7	04.07.2023	889499	0.52	0.38	0.90	22.05
	25.07.2023	893471	1.12	0.26	1.38	54.54
FTP-8	04.07.2023	913441	0.76	0.20	0.96	48.00
	24.07.2023	940061	1.43	0.31	1.74	34.79

NOTE:

1. Total Fluoride emission 0.195 Kg/ Ton of Aluminum produced, against total hot metal Production 38001 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


 Authorised Signatory
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 Asst. Manager (Laboratory)
 NALCO, Smelter Plant, Angul

**STACK EMISSION REPORT OF BAKE OVEN PLANT
FOR THE MONTH OF JULY 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	06.07.2023	158262	1.16	0.21	1.37	23.40
	26.07.2023	159817	2.64	0.14	2.78	17.98
BO-II	08.07.2023	200501	1.35	0.27	1.62	38.52
	27.07.2023	200103	1.25	0.75	2.00	48.79

- I. Total Fluoride emission **0.016 Kg/ Ton** of Aluminium produced, against total hot metal Production **38001 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


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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/647 Date : 26.07.2023 Sample No. : QLS/MR/A/23-24/647-656 Sample Description : Stack Flue Gas Date of Performance(s) : 22.07.2023-26.07.2023
Ref No & Date: SMLT/T&C/S20/OMC-5639/5300007582/WO/7329, Dated. 13.04.2023	

Analysis Result

Sampling Done by: C.Sahoo					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.)
647	BO-1	20.07.2023	15.10	252.5	57.5	92	9.44	228230
648	FTP-1		10.10	28.8	15.9	105	18.55	753040
649	FTP-2		11.10	33.6	16.5	102	17.76	726738
650	FTP-3		12.20	29.4	21.9	100	17.46	718245
651	FTP-4		14.00	30.8	20.1	99	16.55	682768
652	BO-2	21.07.2023	9.40	237.8	64.7	89	9.20	223926
653	FTP-5		10.40	24.6	17.7	101	9.26	690582
654	FTP-6		11.45	29.4	16.9	102	9.74	724520
655	GTC-7		14.05	38.1	26.6	97	10.61	931080
656	GTC-8		15.00	34.5	25.0	95	11.06	975741

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.

FUGITIVE EMISSION OF FLUORIDE IN POTROOMS FOR THE MONTH OF JULY 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	10.07.2023 20.07.2023	118	0.85	0.818	0.184	0.40
Pot room-B	10.07.2023 20.07.2023	120	0.69			
Pot room-C	15.07.2023 17.07.2023	117	0.87			
Pot room-D	15.07.2023 17.07.2023	119	0.73			
Pot room-E	12.07.2023 14.07.2023	120	1.11			
Pot room-F	12.07.2023 14.07.2023	118	0.80			
Pot room-G	11.07.2023 13.07.2023	120	0.67			
Pot room-H	11.07.2023 13.07.2023	120	0.82			

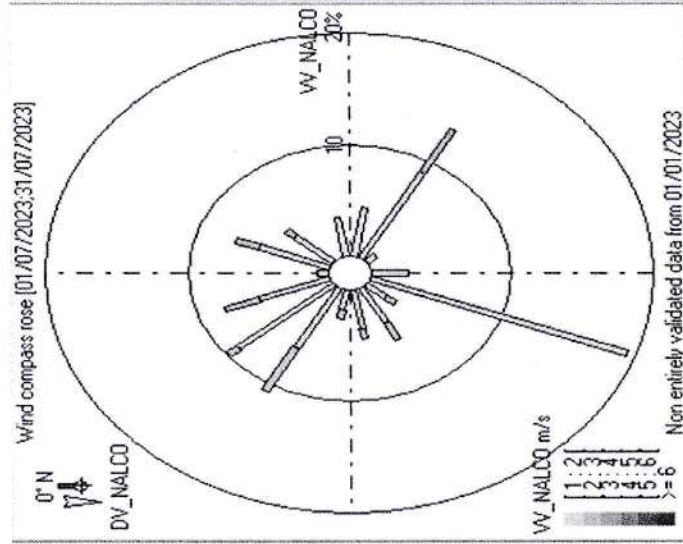

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MAXIMUM & MINIMUM TEMPERATURE AND RAIN FALL			
JULY-2023			
DATE	MAXIMUM TEMP. (deg.C)	MINIMUM TEMP. (deg C)	RAIN FALL (mm)
01-Jul	37.0	28.0	2.2
02-Jul	37.0	28.0	0.0
03-Jul	36.0	27.0	1.0
04-Jul	37.0	27.0	0.0
05-Jul	35.0	27.0	2.7
06-Jul	34.0	27.0	0.0
07-Jul	36.0	27.0	5.2
08-Jul	35.0	27.0	0.0
09-Jul	35.0	27.0	5.2
10-Jul	34.0	26.0	2.7
11-Jul	34.0	26.0	1.0
12-Jul	34.0	26.0	0.0
13-Jul	35.0	27.0	0.0
14-Jul	34.0	26.0	3.3
15-Jul	30.0	26.0	8.0
16-Jul	29.0	25.0	28.0
17-Jul	29.0	25.0	5.7
18-Jul	34.0	26.0	0.0
19-Jul	34.0	27.0	6.7
20-Jul	32.0	26.0	31.5
21-Jul	32.0	26.0	36.7
22-Jul	33.0	26.0	35.8
23-Jul	34.0	26.0	7.0
24-Jul	34.0	26.0	2.1
25-Jul	34.0	26.0	24.5
26-Jul	34.0	26.0	37.3
27-Jul	33.0	26.0	12.1
28-Jul	32.0	27.0	0.6
29-Jul	32.0	26.0	32.0
30-Jul	33.0	26.0	8.0
31-Jul	34.0	26.0	6.0
Max. Temp. for the month in Deg.C		37.0	
Min. Temp. for the month in Deg.C.		25.0	
Total rainfall (mm) -		305.3	YEAR 2023: 788.6

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WINDROSE FOR THE MONTH OF JULY 2023



	< 1	[1 : 2 [	[2 : 3 [	[3 : 4 [	[4 : 5 [	[5 : 6 [	>= 6	Accumulation
[350 : 10 [	1388.5		0.9					0.9
[10 : 30 [	43.4	5.3	1.8					7.1
[30 : 50 [	32.7	3.5	0.9					4.4
[50 : 70 [	42.5							
[70 : 90 [	90.3	3.5						3.5
[90 : 110 [	131.0	4.4						4.4
[110 : 130 [	178.8	8.8	4.4					13.3
[130 : 150 [	79.6	0.9						0.9
[150 : 170 [	54.9							
[170 : 190 [	26.5	2.7						2.7
[190 : 210 [	51.3	19.5						19.5
[210 : 230 [	48.7	1.8	0.9					2.7
[230 : 250 [	45.1	3.5	1.8					5.3
[250 : 270 [	24.8	3.5	0.9					4.4
[270 : 290 [	18.6	1.8	0.9					2.7
[290 : 310 [	20.4	6.2	4.4					10.6
[310 : 330 [	18.6	8.8	0.9					9.7
[330 : 350 [	26.5	5.3	2.7					8.0
Accumulation	2322.1	79.6	20.4					100 %

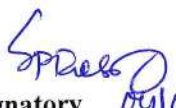

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F60G4/QC/4.5.1
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**ANALYSIS REPORT OF GROUND WATER AND SURFACE WATER
FOR THE MONTH JULY 2023**

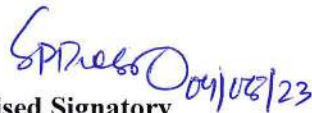
Sl. No.	Sampling place	Approx. Distance from Storm water Channel (in meter)	Fluoride mg/l (Norm 1.5)	pH (Norm 6.5-9.0)
1	Open Pond (Kulad)	200	*	*
2	Open Pond (Kulad)	100	*	*
3	Bore Well (Kulad)	100	1.33	6.8
4	Open Well Kulad)	75	1.44	7.1
5	Open Pond (Bonda)	100	1.47	7.1
6	Open well (Bonda)	100	1.08	7.4
7	Open Pond (Bonda – Rly. Culvert)	15	1.38	7.6
8	Tube Well (Bonda)	100	1.46	7.9
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	0.93	6.7
14	Open Pond (Banarpal)	200	1.24	7.1
15	Open Pond (Banarpal)	200	0.99	7.3

- 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 JULY 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	0.68	6.8
2	KURUDOL OPEN WELL	NW	5	1.20	7.3
3	BALARAM PRASAD TUBE WELL	N	5	0.51	7.0
4	GOTAMARA OPEN WELL	NE	6	0.84	7.1
5	TULASIPAL OPEN WELL	SE	4	1.46	7.0
6	LANGULIABERA OPEN WELL	S	3	1.36	7.5
7	GOPINATHPUR OPEN WELL	SW	2.5	0.78	7.3
8	ANKULA TUBE WELL	W	2	0.73	7.0


04/07/23
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**ANALYSIS OF TREATED EFFLUENT FROM SEWAGE TREATMENT PLANT
(INSIDE TOWNSHIP)
FOR THE MONTH OF JULY 2023**

Sample Collected on: 18.07.2023

Sl. No	Parameters	Units	Norms (max)	Analysis
1	pH	-	6.5 to 9.0	7.3
2	Suspended solids	mg/l	100	10
3	BOD 3 days at 27 deg. C	mg/l	30	05
4	Fecal Coliform (Sample collected on 21.07.2023)	MPN/100ml	1000	98


04/08/23
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**ANALYSIS OF TREATED EFFLUENT FROM SEWAGE TREATMENT PLANT
(NEAR CISF BARRACK)
FOR THE MONTH OF JULY 2023**

Sample Collected on: 18.07.2023

Sl. No	Parameters	Units	Norms (max)	Analysis
1	pH	-	6.5 to 9.0	6.9
2	Suspended solids	mg/l	100	28
3	BOD 3 days at 27 deg. C	mg/l	30	03
4	Fecal Coliform (Sample collected on 21.07.2023)	MPN/100ml	1000	90


04/08/23
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BORE WELL ANALYSIS REPORT

FOR THE MONTH OF JULY 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)	10.07.2023	7.3	1.46	ND
2	Bore well -4 (Hazardous waste land fill)	10.07.2023	7.7	1.32	ND
3	Bore well -5 (Hazardous waste land fill)	10.07.2023	7.1	1.45	ND

Note:

- 1) ND – Not detectable.

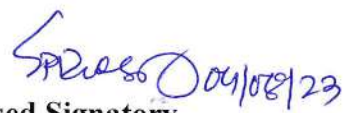
SPR 2023 04/08/23
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FORAGE FLUORIDE MONITORING (GRASS SAMPLES) REPORTS AROUND SMLETER PLANT

FOR THE MONTH OF JULY 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 JULY 2023	Fluoride content (dry basis) in ppm for the month of JUNE 2023	Average of two consecutive months in ppm
1	Bonda	South-East	05.07.2023	36.65	38.58	37.615
2	Tulsipal	South-East	11.07.2023	38.5	39.6	39.05
3	Languliabeda	South-West	11.07.2023	34.5	39.1	36.8
4	Banarpal	East	05.07.2023	35.1	36	35.55
5	Turang	West	06.07.2023	39.5	37.5	38.5
6	Balaramprasad	North	04.07.2023	38	38.2	38.1

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


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