

**QUARTERLY PERFORMANCE REPORT W.R.T ENVIRONMENTAL ASPECT
DURING QR. I (APR-JUN'23) 2023 -24**

TABLE-1 LIQUID EFFLUENT POLLUTANT LEVEL -						
MONITORED VALUES in mg/lit.except pH						Limiting value for conc. (mg/l except for pH)
SL. NO	PARAMETERS	NO. OF OBS	MAX.	MIN.	AVG.	
1	pH	91	8.5	7.0	7.5	6-8.5
2	OIL & GREASE	91	5.0	0.4	2.29	5
3	SULPHIDE	91	<0.1	<0.1	<0.1	0.5
4	PHENOL	91	0.35	0.05	0.11	0.35
5	S. SOLID	91	20.0	3.0	10.70	20.0
6	COD	91	124.0	14.80	53.2	125.0
7	BOD3	91	15.0	1.0	8.24	15.0
8	CN	91	<0.02	<0.02	<0.02	0.2
9	Ammonia as N	3	13.0	10	11.67	15.0
10	Cr (Hexavalent)	3	0	0	0.00	0.1
11	Cr (Total)	3	0.003	0.001	0.002	2.0
12	Pb	3	0	0	0.0000	0.1
13	Zn	3	0.076	0.052	0.065	5.0
14	Ni	3	0.004	0.002	0.003	1.0
15	Cu	3	0.001	0	0.000	1.0
16	Benzene	3	<0.1	<0.1	<0.1	0.1
17	Benzo (a)- Pyrene	3	<0.2	<0.2	<0.2	0.2
18	Hg	3	<0.01	<0.01	<0.01	0.01
19	V	3	<0.2	<0.2	<0.2	0.2
20	TKN	3	24.44	18.0	21.3	40.0
21	P	3	1.9	1.54	1.66	3.0

Limiting concentration of effluent is as per MoEF notification on standard vide GSR-186 (E) dated 18th March, 2008.

*** BDL- Detectable Limit : 0.1 microgram/Litre**

*** Parameters from 9 to 21 are monitored once in a month as per CPCB norms**

NOTE : Quantum figures are not calculated for Q-1 due to RTA-2023 in April'23 and extended S/D of CDU and other process units due to HCU Fire Incident on 29th May'23. Post RTA-23, CDU stream days was only 16 days in the month of May'23 and 2 days in the month of June'23.

QUARTERLY PERFORMANCE REPORT W.R.T ENVIRONMENTAL ASPECT.

DURING QUARTER I (APR-JUN'23), 2023-24

Online Stack Analyser data

UNIT	FURNACE STACK	PARAMETER	OBSERVED VALUE in mg/Nm3			Limiting Concentration in mg/Nm3	Remarks
			MAX.	MIN.	AVG		
CDU/VDU	FF-01/02	SO2	370.33	13.49	182.03	371	Stack with dual firing (FG:FO=81:19)
		NOx	4.82	0.17	1.77	369	
		CO	4.83	2.56	3.53	160	
		PM	9.11	5.21	6.89	28	
DCU	FF-01	SO2	188.90	28.69	118.01	820	Stack with dual firing (FG:FO=53:47)
		NOx	134.55	16.82	87.58	397	
		CO	0.98	0.73	0.84	173	
		PM	33.59	4.07	11.94	52	
HCU	FF-01/02	SO2	2.62	1.60	2.07	50	Stack with Gas firing
		NOx	33.69	19.94	26.85	350	
		CO	7.95	3.50	5.55	150	
		PM	6.52	4.24	5.55	10	
HCU	FF-03	SO2	50.00	15.99	33.00	50	Stack with dual firing (FG:FO=100:0)
		NOx	203.00	11.35	92.53	350	
		CO	2.15	0.92	1.37	150	
		PM	8.46	6.21	6.76	10	
H2U	FF-01	SO2	23.84	19.57	21.17	50	Stack with Gas firing
		NOx	36.49	1.76	17.61	350	
		CO	7.13	0.14	2.62	150	
		PM	9.86	5.35	6.65	10	
CPP(HRSG)		SO2	49.98	11.59	25.10	100	Stack with Gas firing (FG:Naphtha=97:3) (Naphtha used as per RTA and S/D requirements)
		NOx	27.50	5.54	16.49	353	
		CO	4.00	1.17	2.78	152	
		PM	2.90	2.80	2.82	13	
CPP (UB)		SO2	23.10	3.26	9.83	157	Stack with dual firing (FG:Naphtha=94:6) (Naphtha used as per RTA requirements)
		NOx	95.53	0.10	43.58	356	
		CO	43.74	0.01	5.42	153	
		PM	7.77	5.10	6.85	16	
MSP (CRU)		SO2	20.21	1.27	8.55	50	Stack with Gas firing
		NOx	12.49	1.10	3.68	350	
		CO	1.76	0.46	1.10	150	

NUMALIGARH REFINERY LIMITED						
QUARTERLY PERFORMANCE WITH RESPECT TO ENVIRONMENTAL ASPECTS						
DURING QUARTER I (Apr-Jun'23), 2023-24						
Ambient Air Quality Data						
STATION	PARAMETER	STD NAAQS-2009	Unit	OBSERVATIONS		
				MAX	MIN	AVG
REFINERY (WATCH TOWER NO. 6)	SO2	80 (24 hr avg.)	µg/m3	13.7	5.40	9.3
	NO2	80 (24 hr avg.)	µg/m3	19.5	9.8	14.8
	O3	100 (8 hr avg.)	µg/m3	35.9	18.1	25.4
	CO	2.000 (8 hr.avg.)	mg/m3	0.900	0.61	0.789
	NH3	400 (24 hr.avg.)	µg/m3	33.8	0.0	8.50
	PM 10	100 (24 hr.avg.)	µg/m3	59.2	40.2	49.9
	PM 2.5	60 (24 hr.avg.)	µg/m3	29.1	19.1	24.5
	Benzene	05 (Annual)	µg/m3	3.20	0.00	0.70
	HC	-	mg/m3	1.14	0.00	0.27
	BaP	01 (Annual)	ng/m3	<0.5	<0.5	<0.5
	Pb	1.0 (24 hr.avg.)	µg/m3	0.39	0.00	0.09
	As	06 (Annual)	ng/m3	<1	<1	<1
	Ni	20 (Annual)	ng/m3	3.80	0.00	0.89
ECO-PARK IN NRL TOWNSHIP	SO2	80 (24 hr avg.)	µg/m3	12.00	6.40	13.2
	NO2	80 (24 hr avg.)	µg/m3	19.60	10.00	14.3
	O3	100 (8 hr avg.)	µg/m3	28.6	17.50	24.0
	CO	2.000 (8 hr.avg.)	mg/m3	0.960	0.570	0.705
	NH3	400 (24 hr.avg.)	µg/m3	31.3	0.00	6.7
	PM 10	100 (24 hr.avg.)	µg/m3	60.7	36.4	47.7
	PM 2.5	60 (24 hr.avg.)	µg/m3	32.1	14.8	23.0
	Benzene	05 (Annual)	µg/m3	3.10	0.00	0.7
	HC		mg/m3	1.12	0.00	0.3
	BaP	1.0 (Annual)	ng/m3	<0.5	<0.5	<0.5

	Pb	1.0 (24 hr.avg.)	µg/m3	0.38	0.00	0.100
	As	6.0 (Annual)	ng/m3	<1	<1	<1
	Ni	20 (Annual)	ng/m3	2.70	0.00	0.75
RAW WATER INTAKE	SO2	80 (24 hr avg.)	µg/m3	12.4	6.4	9.3
	NO2	80 (24 hr avg.)	µg/m3	15.6	7.0	12.2
	O3	100 (8 hr avg.)	µg/m3	30.8	15.0	16.2
	CO	2.000 (8 hr.avg.)	mg/m3	0.89	0.60	0.72
	NH3	400 (24 hr.avg.)	µg/m3	27.00	0.00	6.64
	PM 10	100 (24 hr.avg.)	µg/m3	54.4	32.9	44.0
	PM 2.5	60 (24 hr.avg.)	µg/m3	28.6	14.0	21.9
	Benzene	05 (Annual)	µg/m3	1.90	0.00	0.5
	HC		mg/m3	0.95	0.00	0.3
	BaP	01 (Annual)	ng/m3	<0.5	<0.5	<0.5
	Pb	1.0 (24 hr.avg.)	µg/m3	0.380	0.00	0.09
	As	06 (Annual)	ng/m3	<1	<1	<1
	Ni	20 (Annual)	ng/m3	3.60	0.00	0.83
NH-39 BYPASS	SO2	80 (24 hr avg.)	µg/m3	15.9	6.0	10.4
	NO2	80 (24 hr avg.)	µg/m3	21.9	13.0	17.8
	O3	100 (8 hr avg.)	µg/m3	43.5	19.2	28.5
	CO	2.000 (8 hr.avg.)	mg/m3	1.140	0.710	0.850
	NH3	400 (24 hr.avg.)	µg/m3	36.8	0.0	9.9
	PM 10	100 (24 hr.avg.)	µg/m3	70.4	50.0	57.7
	PM 2.5	60 (24 hr.avg.)	µg/m3	34.7	20.4	26.8
	Benzene	05 (Annual)	µg/m3	2.80	0.00	0.75
	HC	-	mg/m3	1.33	0.00	0.33
	BaP	1	ng/m3	<0.5	<0.5	<0.5
	Pb	1.0 (24 hr.avg.)	µg/m3	0.48	0.00	0.127

KAZIRANGA WILDLIFE SANCTUARY AT AGARTOLI	As	6	ng/m3	0.00	0.00	0.00
	Ni	20 (Annual)	ng/m3	4.60	0.00	1.09
	SO2	80 (24 hr avg.)	µg/m3	12.40	5.30	8.49
	NO2	80 (24 hr avg.)	µg/m3	17.8	9.5	13.7
	O3	100 (8 hr avg.)	µg/m3	27.2	13.10	15.2
	CO	2.000 (8 hr.avg.)	mg/m3	0.840	0.500	0.6
	NH3	400 (24 hr.avg.)	µg/m3	28.20	0.00	6.8
	PM 10	100 (24 hr.avg.)	µg/m3	47.9	36.0	42.7
	PM 2.5	60 (24 hr.avg.)	µg/m3	25.4	12.4	19.1
	Benzene	05 (Annual)	µg/m3	2.80	0.00	0.7
	HC	-	mg/m3	0.99	0.00	0.2
	BaP	1.0	ng/m3	<0.5	<0.5	<0.5
	Pb	1.0 (24 hr.avg.)	µg/m3	0.33	0.00	0.09
	As	6.0	ng/m3	<1	<1	<1
	Ni	20 (Annual)	ng/m3	2.90	0.00	0.65

BDL:Below Detection Level, All the parameters are found to be within limit