

QUARTERLY PERFORMANCE WITH RESPECT TO ENVIRONMENTAL ASPECTS

DURING QUARTER I (APR-JUN'24)2024-25

Name of Enterprise : Numaligarh Refinery Limited

I. Fresh Water in Cubic Meter Per Tonne of Crude Processed

Table A-I	APR	MAY	JUNE	Cummulative APR-JUN'24	Cumm. for the period APRIL'24-MARCH'25
Crude Processed, MT	241344	276873	245901	764117	764117
Fresh Water Consumed, M3	686292	682785	653012	2022089	2022089
Water Consumed, M3/MT of Crude Processed (Design capacity is 2.8 M3/MT of Crude Processed)	2.8	2.5	2.7	2.65	2.65

II. Liquid Effluent Quantity

Table A-II	APR	MAY	JUNE	Cummulative APR-JUN'24	Cumm. for the period APRIL'24-MARCH'25
Quantity of Effluent Discharged/loss, M3***	30929	32597	39779	103306	103306
Effluent Discharged/loss, M3/1000 MT of Crude Processed	128	118	162	135	135
Reuse, M3	55032	66480	89722	211234	211234
% Reuse/Recycled on Effluent Generated	62.00	65.00	69.28	65.90	65.90

III. Average Sulphur Dioxide Emission

Table A-III	APR	MAY	JUNE	Average APR-JUN'24	Average for the period APRIL'24-MARCH'25
SO2 Emission, Kg/Hr (SPCB Norms: 256 Kg/Hr as SO2)	61.66	58.78	63.02	61.2	61.2

Remarks ***Treated water discharge to outside environment directly from ETP via dedicated pipeline discontinued since 2006. Presently there is no dedicated facility for discharging Treated effluent from ETP. The quantities provided are representation of the system/operational losses in ETP due to various constraints

QUARTERLY PERFORMANCE REPORT W.R.T ENVIRONMENTAL ASPECT

DURING QR. I(APR-JUNE'24) 2024 -25

TABLE-1 LIQUID EFFLUENT POLLUTANT LEVEL -								
MONITORED VALUES in mg/lit.except pH						Limiting value for conc. (mg/l except for pH)	Quantum limit in Kg / 1000 MT of crude processed	
SL. NO	PARAMETERS	NO. OF OBS	MAX.	MIN.	AVG.		Actual	Standard
1	pH	92	8.4	6.7	7.4	6-8.5	-	-
2	OIL & GREASE	92	5.0	0.2	1.48	5	0.62	2.0
3	SULPHIDE	92	<0.1	<0.1	<0.1	0.5	<0.1	0.2
4	PHENOL	92	0.22	0.02	0.06	0.35	0.03	0.14
5	S. SOLID	92	20.0	0.2	9.10	20.0	3.82	8.0
6	COD	92	124.0	9.70	39.5	125.0	16.55	50.0
7	BOD3	92	15.0	3.0	7.12	15.0	2.99	6.0
8	CN	92	<0.02	<0.02	<0.02	0.2	<0.02	0.08
9	Ammonia as N	3	11.8	10.2	10.87	15.0	4.56	6.0
10	Cr (Hexavalent)	3	0	0	0.00	0.1	0.0000	0.04
11	Cr (Total)	3	0.001	0	0.000	2.0	0.0001	0.8
12	Pb	3	0	0	0.0000	0.1	0.0000	0.04
13	Zn	3	0.055	0.001	0.036	5.0	0.0151	2.0
14	Ni	3	0.002	0	0.001	1.0	0.0003	0.4
15	Cu	3	0.001	0.001	0.001	1.0	0.0004	0.4
16	Benzene	3	<0.1	<0.1	<0.1	0.1	<0.1	0.04
17	Benzo (a)- Pyrene	3	<0.2	<0.2	<0.2	0.2	<0.2	0.08
18	Hg	3	<0.01	<0.01	<0.01	0.01	<0.01	0.004
19	V	3	<0.2	<0.2	<0.2	0.2	<0.2	0.8
20	TKN	3	10.49	9.26	9.86	40.0	4.13	16.0
21	P	3	0.78	0.67	0.72	3.0	0.30	1.2

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**

QUARTERLY PERFORMANCE REPORT W.R.T ENVIRONMENTAL ASPECT.

DURING QUARTER I (APR-JUNE'24), 2024-25

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	425.40	6.84	192.74	763	Stack with dual firing (FG:FO=57:43)
		NOx	170.34	91.81	151.86	393	
		CO	5.09	2.35	3.68	172	
		PM	42.43	9.34	21.66	49	
DCU	FF-01	SO2	243.12	129.07	168.76	967	Stack with dual firing (FG:FO=44:56)
		NOx	164.23	135.21	149.93	406	
		CO	1.37	0.17	0.73	178	
		PM	20.41	5.15	7.57	60	
HCU	FF-01/02	SO2	8.09	7.02	7.52	50	Stack with Gas firing
		NOx	8.25	7.44	7.85	350	
		CO	9.13	8.31	8.76	150	
		PM	8.21	3.76	6.21	10	
HCU	FF-03	SO2	172.37	0.80	43.68	208	Stack with dual firing (FG:FO=90:10)
		NOx	71.70	2.12	40.13	360	
		CO	87.71	8.46	15.88	155	
		PM	7.17	5.06	6.36	19	
H2U	FF-01	SO2	49.54	17.44	26.59	50	Stack with Gas firing
		NOx	93.79	2.68	39.81	350	
		CO	18.86	2.11	7.56	150	
		PM	9.53	4.14	6.26	10	
CPP(HRSG)		SO2	49.72	22.77	34.62	50	Stack with Gas firing
		NOx	156.30	0.06	52.42	350	
		CO	53.52	1.80	13.64	150	
		PM	3.81	0.072	1.14	10	
CPP (UB)		SO2	48.76	12.33	24.37	50	Stack with dual firing
		NOx	93.62	0.89	66.27	350	

NUMALIGARH REFINERY LIMITED						
QUARTERLY PERFORMANCE WITH RESPECT TO ENVIRONMENTAL ASPECTS DURING QUARTER I (APR-JUNE'24), 2024-25						
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	14.39	5.36	9.08
	NO2	80 (24 hr avg.)	µg/m3	17.54	6.17	12.35
	O3	180 (1 hr avg.)	µg/m3	14.36	4.2	8.60
	CO	4.000 (1 hr.avg.)	mg/m3	0.00	0.0	0.00
	NH3	400 (24 hr.avg.)	µg/m3	30.46	18.28	24.25
	PM 10	100 (24 hr.avg.)	µg/m3	66.48	41.25	54.66
	PM 2.5	60 (24 hr.avg.)	µg/m3	41.14	22.51	28.02
	Benzene	05 (Annual)	µg/m3	0.00	0.00	0.00
	HC	-	mg/m3	0.97	0.59	26.85
	BaP	01 (Annual)	ng/m3	<0.5	<0.5	<0.5
	Pb	1.0 (24 hr.avg.)	µg/m3	0.00	0.00	0.00
	As	06 (Annual)	ng/m3	0.00	0.00	0.00
	Ni	20 (Annual)	ng/m3	0.00	0.00	0.00
ECO-PARK IN NRL TOWNSHIP	SO2	80 (24 hr avg.)	µg/m3	13.25	6.08	8.49
	NO2	80 (24 hr avg.)	µg/m3	16.77	7.12	11.50
	O3	180 (1 hr avg.)	µg/m3	12.15	4.62	7.58
	CO	4.000 (1 hr.avg.)	mg/m3	0.00	0.00	0.00
	NH3	400 (24 hr.avg.)	µg/m3	26.51	18.46	22.41
	PM 10	100 (24 hr.avg.)	µg/m3	66.82	39.25	52.31
	PM 2.5	60 (24 hr.avg.)	µg/m3	28.12	18.34	23.41
	Benzene	05 (Annual)	µg/m3	0.00	0.00	0.00
	HC		mg/m3	0.90	0.58	0.70
	BaP	1.0 (Annual)	ng/m3	0.00	0.00	0.00

		Pb	1.0 (24 hr.avg.)	µg/m3	0.00	0.00	0.00
		As	6.0 (Annual)	ng/m3	0.00	0.00	0.00
RAW WATER INTAKE		Ni	20 (Annual)	ng/m3	0.00	0.00	0.00
		SO2	80 (24 hr avg.)	µg/m3	12.39	5.10	8.79
		NO2	80 (24 hr avg.)	µg/m3	18.32	6.58	12.13
		O3	180 (1 hr avg.)	µg/m3	12.21	4.75	8.12
		CO	4.000 (1 hr.avg.)	mg/m3	0.00	0.00	0.00
		NH3	400 (24 hr.avg.)	µg/m3	28.66	17.48	21.81
		PM 10	100 (24 hr.avg.)	µg/m3	62.75	42.15	52.97
		PM 2.5	60 (24 hr.avg.)	µg/m3	43.26	22.47	22.27
		Benzene	05 (Annual)	µg/m3	0.00	0.00	0.00
		HC		mg/m3	0.90	0.51	0.67
		BaP	01 (Annual)	ng/m3	0.00	0.00	0.00
		Pb	1.0 (24 hr.avg.)	µg/m3	0.00	0.00	0.00
		As	06 (Annual)	ng/m3	0.00	0.00	0.00
		Ni	20 (Annual)	ng/m3	0.00	0.00	0.00
NH-39 BYPASS		SO2	80 (24 hr avg.)	µg/m3	18.34	5.78	10.33
		NO2	80 (24 hr avg.)	µg/m3	24.09	7.19	11.70
		O3	180 (1 hr avg.)	µg/m3	25.98	7.14	11.53
		CO	4.000 (1 hr.avg.)	mg/m3	0.87	0.68	0.81
		NH3	400 (24 hr.avg.)	µg/m3	34.58	17.58	24.28
		PM 10	100 (24 hr.avg.)	µg/m3	95.23	41.36	57.81
		PM 2.5	60 (24 hr.avg.)	µg/m3	56.00	20.14	29.67
		Benzene	05 (Annual)	µg/m3	0.00	0.00	0.00

KAZIRANGA WILDLIFE SANCTUARY AT AGARTOLI	HC	-	mg/m3	1.59	0.52	0.80
	BaP	1	ng/m3	0.00	0.00	0.00
	Pb	1.0 (24 hr.avg.)	µg/m3	0.00	0.00	0.00
	As	6	ng/m3	0.00	0.00	0.00
	Ni	20 (Annual)	ng/m3	0.00	0.00	0.00
	SO2	80 (24 hr avg.)	µg/m3	17.58	6.75	9.89
	NO2	80 (24 hr avg.)	µg/m3	20.00	6.78	10.37
	O3	180 (1 hr avg.)	µg/m3	14.58	4.37	7.99
	CO	4.000 (1 hr.avg.)	mg/m3	0.00	0.00	0.00
	NH3	400 (24 hr.avg.)	µg/m3	32.93	17.63	23.89
	PM 10	100 (24 hr.avg.)	µg/m3	69.78	40.26	1818.52
	PM 2.5	60 (24 hr.avg.)	µg/m3	33.47	19.37	24.75
	Benzene	05 (Annual)	µg/m3	0.00	0.00	0.00
	HC	-	mg/m3	0.91	0.51	0.65
	BaP	1.0	ng/m3	0.00	0.00	0.00
	Pb	1.0 (24 hr.avg.)	µg/m3	0.00	0.00	0.00
	As	6.0	ng/m3	0.00	0.00	0.00
	Ni	20 (Annual)	ng/m3	0.00	0.00	0.00

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