

# Quarterly Analysis Data for Ambient Air Quality and Stack Monitoring for Q4, FY 2023-24 of GAIL Pata



**GAIL (INDIA) LIMITED  
PATA PETROCHEMICAL COMPLEX**

# ENVIRONMENT MONITORING REPORT



## GAIL (India) Limited, Pata Petrochemical Complex Auraiya, Uttar Pradesh (U.P.)



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Prepared by  
**NETEL (INDIA) LIMITED**  
(MoEF&CC Recognized, NABL Accredited Laboratory)



**January 2024**



Monitoring of Environmental Parameters at GAIL (India) Limited, PATA, UP



TABLE-3a: Ambient Air Quality Monitoring Results -AAQ-1 : Inside the Complex- PC-1 AAQMS-01

Date of Sampling	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	Lead (µg/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Benzo (a) Pyrene (ng/m <sup>3</sup> )	Arsenic (As), (ng/m <sup>3</sup> )	Nickel (Ni), (ng/m <sup>3</sup> )
01.01.2024	67.2	38.8	12.2	17.6	0.43	10.6	2.5	<0.1	2.2	<0.5	<1.0	<5.0
04.01.2024	69.7	38.8	10.8	14.6	0.46	13.7	2.7	<0.1	2.3	<0.5	<1.0	<5.0
08.01.2024	65.3	34.7	12.6	16.9	0.41	14.3	2.7	<0.1	2.3	<0.5	<1.0	<5.0
11.01.2024	68.5	32.7	10.8	18.5	0.44	12.7	2.4	<0.1	2.3	<0.5	<1.0	<5.0
15.01.2024	69.7	36.4	10.5	18.1	0.55	12.9	2.5	<0.1	2.5	<0.5	<1.0	<5.0
18.01.2024	68.6	36.3	18.7	18.6	0.49	12.8	2.2	<0.1	2.6	<0.5	<1.0	<5.0
22.01.2024	69.4	35.3	14.5	15.2	0.53	14.1	2.4	<0.1	2.6	<0.5	<1.0	<5.0
24.01.2024	63.5	32.1	16.4	19.6	0.50	12.7	2.6	<0.1	3.0	<0.5	<1.0	<5.0
29.01.2024	66.5	30.7	11.7	19.0	0.40	11.8	2.7	<0.1	2.2	<0.5	<1.0	<5.0
<b>Min</b>	<b>63.5</b>	<b>30.7</b>	<b>10.5</b>	<b>14.6</b>	<b>0.40</b>	<b>10.6</b>	<b>2.2</b>	<b>&lt;0.1</b>	<b>2.2</b>	<b>&lt;0.5</b>	<b>&lt;1.0</b>	<b>&lt;5.0</b>
<b>Max</b>	<b>69.7</b>	<b>38.8</b>	<b>18.7</b>	<b>19.6</b>	<b>0.56</b>	<b>14.3</b>	<b>2.7</b>	<b>&lt;0.1</b>	<b>3.0</b>	<b>&lt;0.5</b>	<b>&lt;1.0</b>	<b>&lt;5.0</b>
<b>Mean</b>	<b>67.6</b>	<b>35.1</b>	<b>13.1</b>	<b>17.6</b>	<b>0.47</b>	<b>12.9</b>	<b>2.5</b>	<b>&lt;0.1</b>	<b>2.5</b>	<b>&lt;0.5</b>	<b>&lt;1.0</b>	<b>&lt;5.0</b>
<b>98%ile</b>	<b>69.7</b>	<b>38.8</b>	<b>18.4</b>	<b>19.5</b>	<b>0.55</b>	<b>14.3</b>	<b>2.7</b>	<b>&lt;0.1</b>	<b>2.9</b>	<b>&lt;0.5</b>	<b>&lt;1.0</b>	<b>&lt;5.0</b>
<b>NAAQ Standards</b>	<b>100</b>	<b>60</b>	<b>80</b>	<b>80</b>	<b>2</b>	<b>400</b>	<b>100</b>	<b>1</b>	<b>5</b>	<b>1</b>	<b>6</b>	<b>20</b>

Verified By

*Willu*  
10/1/2024

Neelima Dalvi  
Technical Manager

Issued By

*Shraddha Kere*  
10/1/2024

Shraddha Kere  
Quality Manager





Monitoring of Environmental Parameters at GAIL (India) Limited, PATA, UP



Source Emission Monitoring: Table 6.1 a

S. No	Name of the Stack	Date Of Sampling	Velocity m/sec	Flue Gas Discharge Quantity Nm <sup>3</sup> /hr	Stack gas temperature °C	Particulate Matter (mg/Nm <sup>3</sup> )	Sulphur Dioxide (mg/Nm <sup>3</sup> )	Oxides of Nitrogen (mg/Nm <sup>3</sup> )	Carbon Monoxide (mg/Nm <sup>3</sup> )	Oxygen (%)
1	LLDPE-1 -Dowtherm A	18.01.2024	19.06	40356.27	253	5.49	18.0	46.9	16.2	6.2
2	LLDPE-1 -Dowtherm B	18.01.2024	16.87	35582.82	255	5.18	20.5	41.0	18.1	7.1
3	GCU-1- FF-101	25.01.2024	15.41	72280.73	131	3.46	18.6	29.3	20.4	6.8
4	GCU-1- FF-102	25.01.2024	15.33	71523.14	133	3.55	21.8	23.5	22.3	6.2
5	GCU-1- FF-103	25.01.2024	15.19	71437.70	130	3.59	21.6	27.4	17.4	6.5
6	GCU-1- FF-104	25.01.2024	14.64	68101.96	132	5.25	22.4	33.2	21.3	7.5
7	GCU-1- FF-105	25.01.2024	14.88	70862.30	125	6.13	15.4	35.2	22.5	7.1
8	GCU-1- FF-106	25.01.2024	15.11	71243.97	129	3.98	16.7	46.9	21.4	7.8
9	GCU-2- FF-110	17.01.2024	16.16	179082.52	129	2.16	21.8	37.1	23.0	6.2
10	GCU-2- FF-120	17.01.2024	16.30	178816.54	133	1.67	18.6	33.2	24.1	6.9
11	GCU-2- FF-130	17.01.2024	15.51	171078.56	131	2.11	20.5	23.5	22.3	6.4
12	Power Plant-1- UB-1	Shutdown	-	-	-	-	-	-	-	-
13	Power Plant-1- UB-2	24.01.2024	14.69	274842.17	132	1.32	16.7	41.0	22.8	7.2
14	Power Plant-1- UB-3	05.01.2024	14.88	278412.33	132	1.85	18.6	44.9	20.4	7.6
15	Power Plant-2- UB-1	03.01.2024	14.43	268784.93	134	1.28	16.0	46.9	21.3	7.1
16	Power Plant-2- UB-2	03.01.2024	14.97	273422.70	142	1.36	19.2	50.8	17.4	6.9
17	HRSG- 1	04.01.2024	15.20	498384.49	138	1.36	15.4	74.3	18.2	6.4
18	HRSG- 2	04.01.2024	15.29	506328.59	134	3.44	15.4	52.8	15.6	6.1
<b>Standards</b>										
						10/5	50	350/250	150/100	--

Verified By  
  
 Neelima Dalvi  
 Technical Manager



Issued By  
  
 Shradha Kere  
 Quality Manager

# ENVIRONMENT MONITORING REPORT



## **GAIL (India) Limited, Pata Petrochemical Complex Auraiya, Uttar Pradesh (U.P.)**



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**Prepared by**  
**NETEL (INDIA) LIMITED**  
(MoEF&CC Recognized, NABL Accredited Laboratory)



**February 2024**



Monitoring of Environmental Parameters at GAIL (India) Limited, PATA, UP



TABLE-3a: Ambient Air Quality Monitoring Results - AAQ-1 : Inside the Complex- PC-2 AAQMS-01

Date of Sampling	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	Lead (µg/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Benzo (a) Pyrene (ng/m <sup>3</sup> )	Arsenic (As), (ng/m <sup>3</sup> )	Nickel (Ni), (ng/m <sup>3</sup> )
01.02.2024	70.0	40.5	12.6	18.13	0.44	11.2	2.5	<0.1	2.3	<0.5	<1.0	<5.0
05.02.2024	70.4	39.2	11.3	15.09	0.48	14.2	2.8	<0.1	2.4	<0.5	<1.0	<5.0
08.02.2024	65.3	35.4	12.7	17.07	0.42	14.6	2.7	<0.1	2.4	<0.5	<1.0	<5.0
12.02.2024	68.5	33.7	10.9	19.47	0.45	13.3	2.5	<0.1	2.4	<0.5	<1.0	<5.0
15.02.2024	72.6	38.3	10.8	18.91	0.55	13.6	2.6	<0.1	2.5	<0.5	<1.0	<5.0
19.02.2024	69.4	36.3	19.7	19.39	0.51	13.2	2.2	<0.1	2.7	<0.5	<1.0	<5.0
23.02.2024	72.3	35.7	14.5	16.03	0.54	14.4	2.4	<0.1	2.7	<0.5	<1.0	<5.0
26.02.2024	64.8	32.1	16.6	19.85	0.53	13.1	2.7	<0.1	3.1	<0.5	<1.0	<5.0
28.02.2024	67.9	31.9	12.0	19.57	0.40	12.0	2.9	<0.1	2.3	<0.5	<1.0	<5.0
<b>Min</b>	<b>64.8</b>	<b>31.9</b>	<b>10.8</b>	<b>15.1</b>	<b>0.40</b>	<b>11.2</b>	<b>2.2</b>	<b>&lt;0.1</b>	<b>2.3</b>	<b>&lt;0.5</b>	<b>&lt;1.0</b>	<b>&lt;5.0</b>
<b>Max</b>	<b>72.6</b>	<b>40.5</b>	<b>19.7</b>	<b>19.8</b>	<b>0.55</b>	<b>14.6</b>	<b>2.9</b>	<b>&lt;0.1</b>	<b>3.1</b>	<b>&lt;0.5</b>	<b>&lt;1.0</b>	<b>&lt;5.0</b>
<b>Mean</b>	<b>69.0</b>	<b>35.9</b>	<b>13.5</b>	<b>18.2</b>	<b>0.48</b>	<b>13.3</b>	<b>2.6</b>	<b>&lt;0.1</b>	<b>2.5</b>	<b>&lt;0.5</b>	<b>&lt;1.0</b>	<b>&lt;5.0</b>
<b>98%ile</b>	<b>72.6</b>	<b>40.3</b>	<b>19.2</b>	<b>19.8</b>	<b>0.55</b>	<b>14.6</b>	<b>2.9</b>	<b>&lt;0.1</b>	<b>3.0</b>	<b>&lt;0.5</b>	<b>&lt;1.0</b>	<b>&lt;5.0</b>
<b>NAAQ Standards</b>	<b>100</b>	<b>60</b>	<b>80</b>	<b>80</b>	<b>2</b>	<b>400</b>	<b>100</b>	<b>1</b>	<b>5</b>	<b>1</b>	<b>6</b>	<b>20</b>

Verified By

*Neelima Dalvi*  
11/03/24

Neelima Dalvi  
Technical Manager



Issued By

*Shradha Kere*  
11/03/24

Shradha Kere  
Quality Manager



Monitoring of Environmental Parameters at GAIL (India) Limited, PATA, UP



Source Emission Monitoring: Table 6.1 a

S. No	Name of the Stack	Date Of Sampling	Velocity m/sec	Flue Gas Discharge Quantity Nm <sup>3</sup> /hr	Stack gas temperature. °C	Particulate Matter (mg/Nm <sup>3</sup> )	Sulphur Dioxide (mg/Nm <sup>3</sup> )	Oxides of Nitrogen (mg/Nm <sup>3</sup> )	Carbon Monoxide (mg/Nm <sup>3</sup> )	Oxygen (%)
1	LLDPE-1 -Dowtherm A	16.02.2024	16.75	35796.04	248	5.18	16.0	54.7	15.4	7.2
2	LLDPE-1 -Dowtherm B	16.02.2024	16.15	34319.10	251	5.45	15.4	48.9	17.6	6.8
3	GCU-1- FF-101	19.02.2024	14.78	68831.53	134	3.68	16.7	35.2	20.4	6.1
4	GCU-1- FF-102	19.02.2024	14.63	68783.40	130	3.85	15.4	33.2	18.6	6.5
5	GCU-1- FF-103	19.02.2024	14.17	66131.34	133	3.85	21.6	23.5	15.4	7.6
6	GCU-1- FF-104	19.02.2024	14.03	65414.03	131	4.32	13.5	31.3	13.6	8.1
7	GCU-1- FF-105	Shutdown	-	-	-	-	-	-	-	-
8	GCU-1- FF-106	19.02.2024	14.07	65808.58	132	4.29	15.4	41.0	19.3	6.8
9	GCU-2- FF-110	06.02.2024	14.81	161321.26	136	2.38	14.7	35.2	20.4	6.4
10	GCU-2- FF-120	06.02.2024	15.71	173279.89	131	1.49	15.4	29.3	21.6	5.6
11	GCU-2- FF-130	06.02.2024	14.48	160477.60	129	1.85	14.7	31.3	16.4	6.2
12	Power Plant-1- UB-1	Shutdown	-	-	-	-	-	-	-	-
13	Power Plant-1- UB-2	13.02.2024	14.80	278332.38	130	1.49	13.5	46.9	21.3	5.6
14	Power Plant-1- UB-3	Shutdown	-	-	-	-	-	-	-	-
15	Power Plant-2- UB-1	05.02.2024	14.73	277808.54	129	1.41	18.0	41.0	23.6	6.1
16	Power Plant-2- UB-2	05.02.2024	14.74	275811.63	132	1.67	15.4	46.9	24.1	6.2
17	HRSG- 1	07.02.2024	15.22	475812.23	158	4.04	16.7	66.4	19.4	7.1
18	HRSG- 2	07.02.2024	15.08	475854.76	154	3.26	15.4	46.9	16.4	7.6
<b>Standards</b>										
						10/5	50	350/250	150/100	--

Verified By  
Neelima Dalvi  
Technical Manager



Issued By  
Shradha Kere  
Quality Manager

# ENVIRONMENT MONITORING REPORT



## **GAIL (India) Limited, Pata Petrochemical Complex Auraiya, Uttar Pradesh (U.P.)**



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**Prepared by**  
**NETEL (INDIA) LIMITED**  
(MoEF&CC Recognized, NABL Accredited Laboratory)



**March 2024**





Monitoring of Environmental Parameters at GAIL (India) Limited, PATA, UP



TABLE-2a: Ambient Air Quality Monitoring Results -AAQ-1 : Inside the Complex- PC-1 AAQMS-03

Date of Sampling	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	Lead (µg/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Benzo (a) Pyrene (ng/m <sup>3</sup> )	Arsenic (As), (ng/m <sup>3</sup> )	Nickel (Ni), (ng/m <sup>3</sup> )
04.03.2024	71.5	41.3	12.8	18.51	0.44	11.5	2.5	<0.1	2.3	<0.5	<1.0	<5.0
06.03.2024	70.4	39.6	11.7	15.41	0.49	14.9	2.9	<0.1	2.5	<0.5	<1.0	<5.0
11.03.2024	68.0	36.9	12.7	17.43	0.42	15.3	2.7	<0.1	2.4	<0.5	<1.0	<5.0
14.03.2024	68.5	33.7	11.4	20.29	0.46	14.0	2.6	<0.1	2.4	<0.5	<1.0	<5.0
18.03.2024	76.4	38.7	11.4	19.91	0.57	14.2	2.6	<0.1	2.6	<0.5	<1.0	<5.0
20.03.2024	71.6	37.8	20.7	20.00	0.52	13.9	2.3	<0.1	2.7	<0.5	<1.0	<5.0
22.03.2024	73.1	37.2	15.1	16.03	0.54	14.7	2.5	<0.1	2.7	<0.5	<1.0	<5.0
26.03.2024	65.5	33.5	17.0	20.47	0.53	13.8	2.8	<0.1	3.2	<0.5	<1.0	<5.0
28.03.2024	67.9	31.9	12.3	20.39	0.41	12.5	2.9	<0.1	2.4	<0.5	<1.0	<5.0
Min	65.5	31.9	11.4	15.4	0.41	11.5	2.3	<0.1	2.3	<0.5	<1.0	<5.0
Max	76.4	41.3	20.7	20.5	0.57	15.3	2.9	<0.1	3.2	<0.5	<1.0	<5.0
Mean	70.3	36.7	13.9	18.7	0.49	13.9	2.7	<0.1	2.6	<0.5	<1.0	<5.0
98%ile	75.9	41.0	20.1	20.5	0.57	15.2	2.9	<0.1	3.1	<0.5	<1.0	<5.0
NAAQ Standards	100	60	80	80	2	400	100	1	5	1	6	20

Verified By

*Neelima Dalvi*  
10/04/24

Neelima Dalvi  
Technical Manager

Issued By

*Shradha Kere*  
10/04/24

Shradha Kere  
Quality Manager





Monitoring of Environmental Parameters at GAIL (India) Limited, PATA, UP



Source Emission Monitoring: Table 5.2

S. No	Name of the Stack	Date Of Sampling	Velocity m/sec	Flue Gas Discharge Quantity Nm <sup>3</sup> /hr	Stack gas temperature. °C	Particulate Matter (mg/Nm <sup>3</sup> )	Sulphur Dioxide (mg/Nm <sup>3</sup> )	Oxides of Nitrogen (mg/Nm <sup>3</sup> )	Carbon Monoxide (mg/Nm <sup>3</sup> )	Oxygen (%)
1	LLDPE-1 -Dowtherm A	22.03.2024	16.04	34026.06	252	5.31	18.0	48.9	14.6	7.8
2	LLDPE-1 -Dowtherm B	22.03.2024	16.78	35871.06	248	5.32	16.7	54.7	24.1	6.7
3	GCU-1- FF-101	21.03.2024	14.62	68893.30	129	4.07	15.4	39.1	19.6	5.8
4	GCU-1- FF-102	21.03.2024	14.70	68444.57	134	4.20	18.6	37.1	20.2	6.2
5	GCU-1- FF-103	21.03.2024	15.02	70429.17	131	4.12	21.6	29.3	16.4	6.4
6	GCU-1- FF-104	21.03.2024	14.75	68295.85	134	7.01	18.6	33.2	14.3	6.8
7	GCU-1- FF-105	21.03.2024	14.51	68587.22	128	6.52	21.8	27.4	16.8	5.6
8	GCU-1- FF-106	Shutdown	-	-	-	-	-	-	-	-
9	GCU-2- FF-110	20.03.2024	14.82	162170.45	134	4.13	15.4	39.1	20.3	6.3
10	GCU-2- FF-120	20.03.2024	14.93	165063.85	130	4.00	14.7	37.1	21.5	6.1
11	GCU-2- FF-130	20.03.2024	15.55	170602.76	133	4.31	15.4	37.1	20.4	5.8
12	Power Plant-1- UB-1	Shutdown	-	-	-	-	-	-	-	-
13	Power Plant-1- UB-2	19.03.2024	14.48	273758.67	128	4.00	13.5	54.7	20.8	6.1
14	Power Plant-1- UB-3	Shutdown	-	-	-	-	-	-	-	-
15	Power Plant-2- UB-1	05.03.2024	14.44	277018.08	122	4.18	18.0	44.9	20.3	5.8
16	Power Plant-2- UB-2	05.03.2024	14.52	277204.91	124	4.27	15.4	39.1	24.1	5.1
17	HRS-1	18.03.2024	15.09	478319.54	152	4.13	14.7	60.6	21.2	5.3
18	HRS-2	18.03.2024	14.95	469515.07	156	4.01	15.4	54.7	20.4	6.8
<b>Standards</b>										--
						10/5	50	350/250	150/100	--

Verified By  
Neelima Dalvi  
Technical Manager



Issued By  
Shraddha Kere  
Quality Manager