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Date: 23 February 2023

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**LRP02PLA000 \_0344/20230215**

Dear Mr. Sibaya

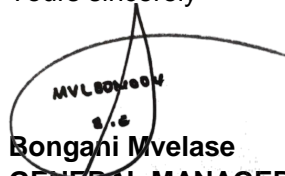
**LETHABO POWER STATION EMISSION MONTHLY REPORT FOR JANUARY 2023**

Please find attached Lethabo Power Station emission report for the month of January 2023.

Also attached are the Ambient Air Quality Monitoring Report, Complaints Register and the Fugitive Dust Fallout Monitoring Report for January 2023.

For any additional information please do not hesitate to contact us.

Yours sincerely



**Bongani Mvelase**  
**GENERAL MANAGER**

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Eskom Holdings SOC Ltd Reg No 2002/015527/30



Report

Lethabo Power Station

Report name: **Lethabo Power Station  
January 2023  
Emission Report**

Reference number:  
Document Type:  
Area of Applicability:  
Report Date:  
Classification:

**LRP02PLA000\_0344/20230215  
Report  
Environment  
February-2023  
Controlled Disclosure**

Signatures:

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Date: 2023/02/17

**Verified by:**

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Date: 2023 02 20

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Date: 2023/02/23

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**LETHABO POWER STATION MONTHLY EMISSIONS REPORT**

Atmospheric Emission License FDDM-MET-2011-08-P1


**1. RAW MATERIALS AND PRODUCTS**

Raw Materials and Products	Raw Material Type	Units	Maximum Permitted Consumption Rate	Consumption Rate Jan-2023
	Coal	Tons	2 000 000	1 407 296
	Fuel Oil	Tons	1 700	331.18
Production Rates	Product / By-Product Name	Units	Maximum Production Capacity Permitted	Production Rate Jan-2023
	Energy	GWh	2834.64	1 908.62
	Ash	Tons	770 000	550 956.5
	RE Ash	kg/MWh	Not Specified	288.67

**2. ENERGY SOURCE CHARACTERISTICS**

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.656 (Standard)	0.640
Ash Content	%	37.37 (Standard)	39.150

\*Please note the "standard" is not necessary a limit, but merely a optimum indication, it will fluctuate as the coal quality changes. The Stipulated Range are the Station acceptance test values.

### 3. EMISSION LIMITS (mg/Nm<sup>3</sup>)

Associated Unit/Stack	PM	SO <sub>2</sub>	NOx
Unit 1	100	3500	1100
Unit 2	100	3500	1100
Unit 3	100	3500	1100
Unit 4	100	3500	1100
Unit 5	100	3500	1100
Unit 6	100	3500	1100

### 4. ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Jan-2023	Technology Type	SO <sub>3</sub> Utilization Jan-2023
Unit 1	<i>Electrostatic Precipitator (ESP)</i>	99.85%	SO <sub>3</sub>	90.1%
Unit 2	<i>Electrostatic Precipitator (ESP)</i>	99.71%	SO <sub>3</sub>	93.8%
Unit 3	<i>Electrostatic Precipitator (ESP)</i>	99.77%	SO <sub>3</sub>	100.0%
Unit 4	<i>Electrostatic Precipitator (ESP)</i>	<i>Unit Off-line</i>	SO <sub>3</sub>	<i>Off-line</i>
Unit 5	<i>Electrostatic Precipitator (ESP)</i>	99.70%	SO <sub>3</sub>	91.5%
Unit 6	<i>Electrostatic Precipitator (ESP)</i>	99.81%	SO <sub>3</sub>	100.0%

Note: ESP plant does not have bypass mode operation, hence plant 100% Utilised.

### 5. MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO <sub>2</sub>	NO
Unit 1	99.5	97.8	97.8
Unit 2	90.1	99.7	99.7
Unit 3	98.8	100.0	100.0
Unit 4	OFF	OFF	OFF
Unit 5	96.3	99.9	99.9
Unit 6	98.4	99.6	99.6

Note: NOx emissions is measured as NO in PPM. Final NOx value is expressed as total NO<sub>2</sub>

## 6. EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of January 2023

Associated Unit/Stack	PM (tons)	SO <sub>2</sub> (tons)	NO <sub>x</sub> (tons)
Unit 1	173.5	3 600	1 964
Unit 2	249.7	3 040	1 166
Unit 3	236.4	3 614	1 643
Unit 4	0.0	0	0
Unit 5	279.3	4378	1669
Unit 6	189.7	3 480	1 414
<b>SUM</b>	<b>1 128.6</b>	<b>18 113</b>	<b>7 856</b>

Table 6.2: Operating days in compliance to PM AEL Limit - January 2023

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance	Average PM (mg/Nm <sup>3</sup> )
Unit 1	27	4	0	0	4	76.4
Unit 2	17	10	0	0	10	141.8
Unit 3	22	9	0	0	9	116.7
Unit 4	0	0	0	0	0	
Unit 5	15	9	2	2	13	121.5
Unit 6	28	3	0	0	3	97.5
<b>SUM</b>	<b>109</b>	<b>35</b>	<b>2</b>	<b>2</b>	<b>39</b>	

Table 6.3: Operating days in compliance to SO<sub>2</sub> AEL Limit - January 2023

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance	Average SO <sub>2</sub> (mg/Nm <sup>3</sup> )
Unit 1	31	0	0	0	0	1 577.8
Unit 2	28	0	0	0	0	1 663.9
Unit 3	31	0	0	0	0	1 763.6
Unit 4	0	0	0	0	0	
Unit 5	28	0	0	0	0	1 889.7
Unit 6	31	0	0	0	0	1 743.1
<b>SUM</b>	<b>149</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

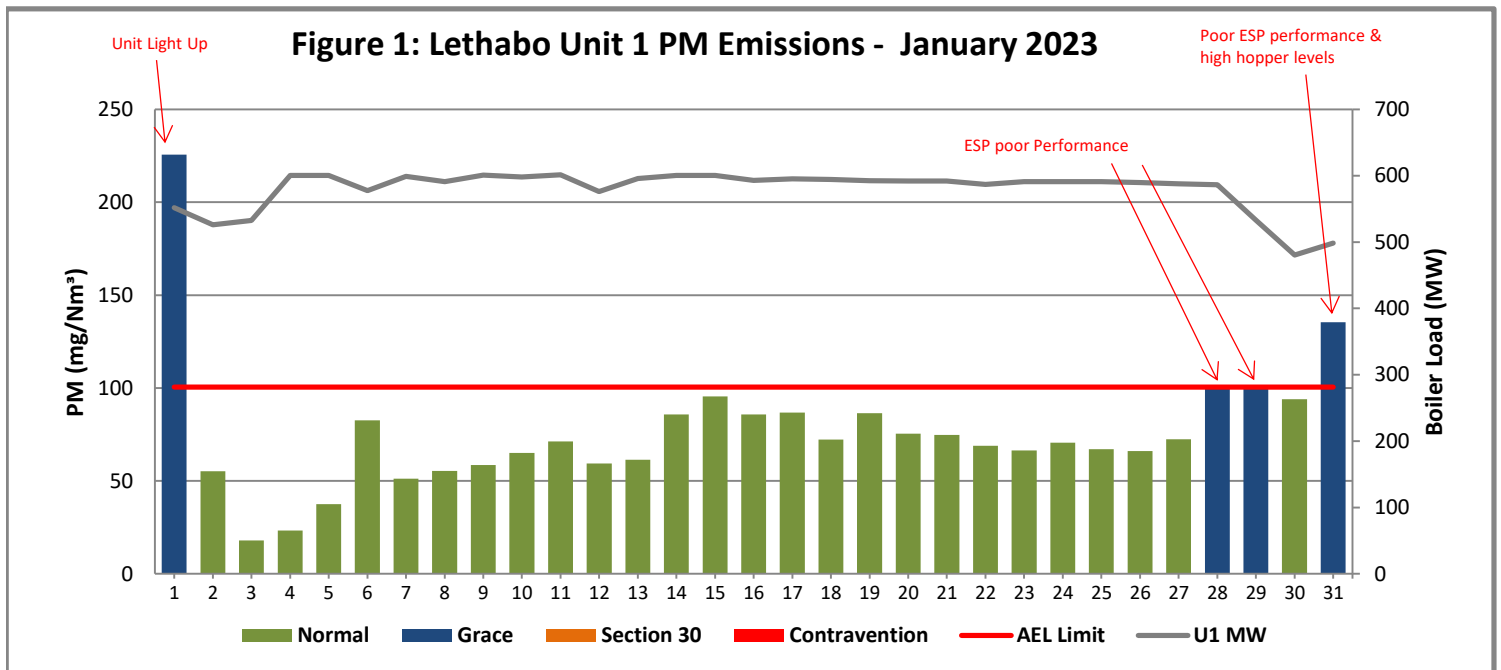
Table 6.4: Operating days in compliance to NOx AEL Limit - January 2023

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance	Average NOx (mg/Nm³)
Unit 1	31	0	0	0	0	859.6
Unit 2	28	0	0	0	0	637.7
Unit 3	31	0	0	0	0	799.9
Unit 4	0	0	0	0	0	
Unit 5	28	0	0	0	0	719.8
Unit 6	31	0	0	0	0	707.9
<b>SUM</b>	<b>149</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

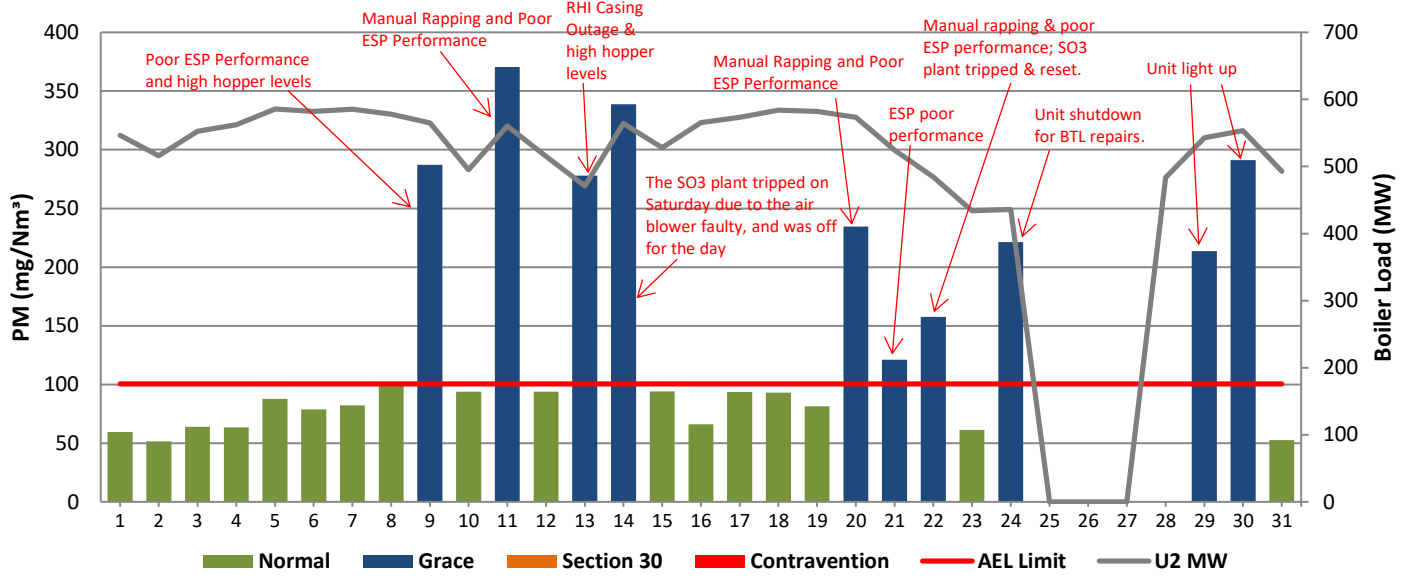
Note: NOx emissions is measured as NO in PPM. Final NOx value is expressed as total NO<sub>2</sub>

Table 6.5: Legend Description

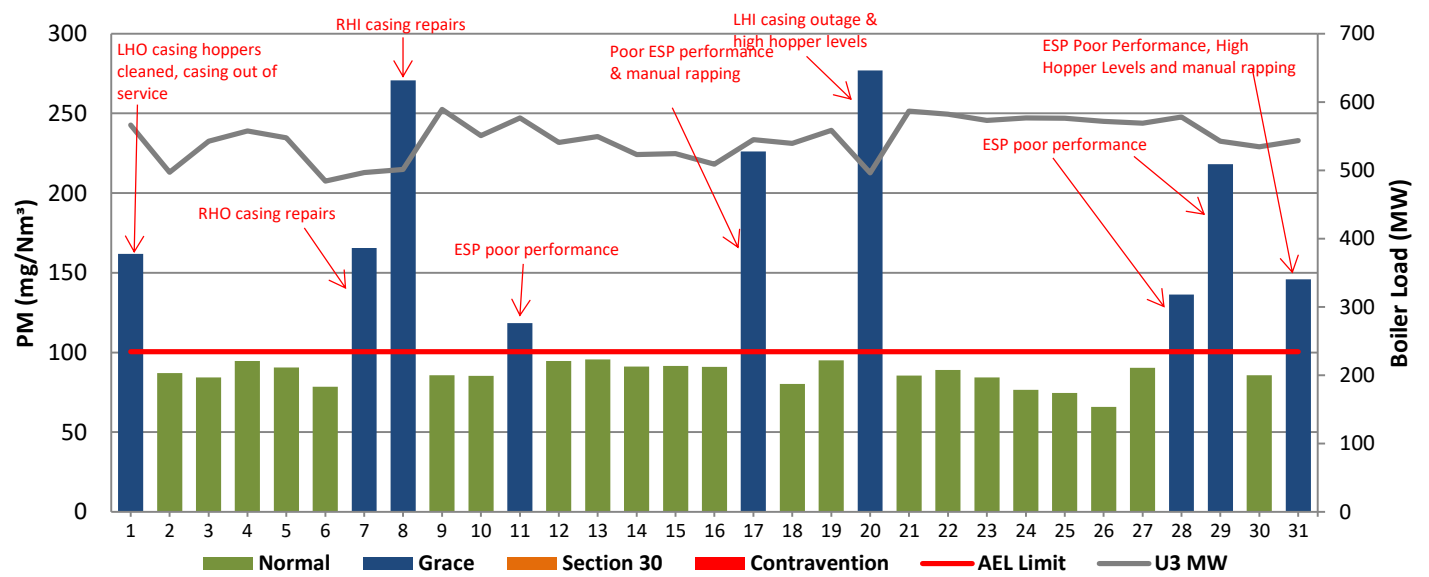
Condition	Colour	Description
Normal	GREEN	Emissions below Emission Limit Value (ELV)
Grace	BLUE	Emissions above the ELV during grace period
Section 30	ORANGE	Emissions above ELV during a NEMA S30 incident
Contra-vention	RED	Emissions above ELV but outside grace or S30 incident conditions



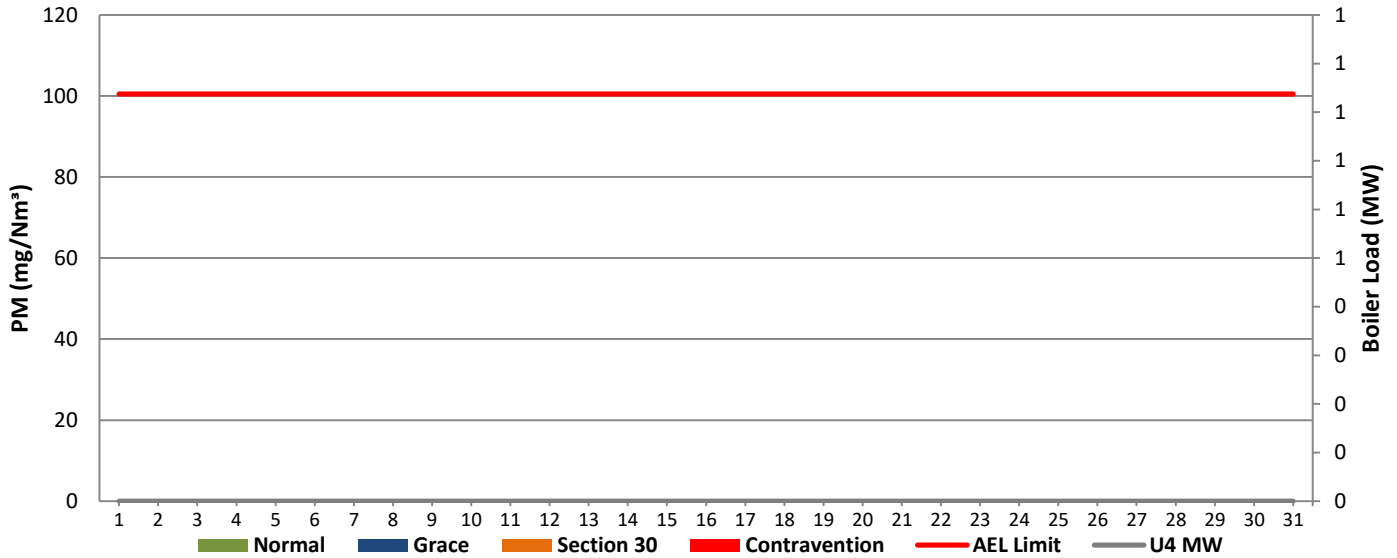
**Figure 2: Lethabo Unit 2 PM Emissions - January 2023**



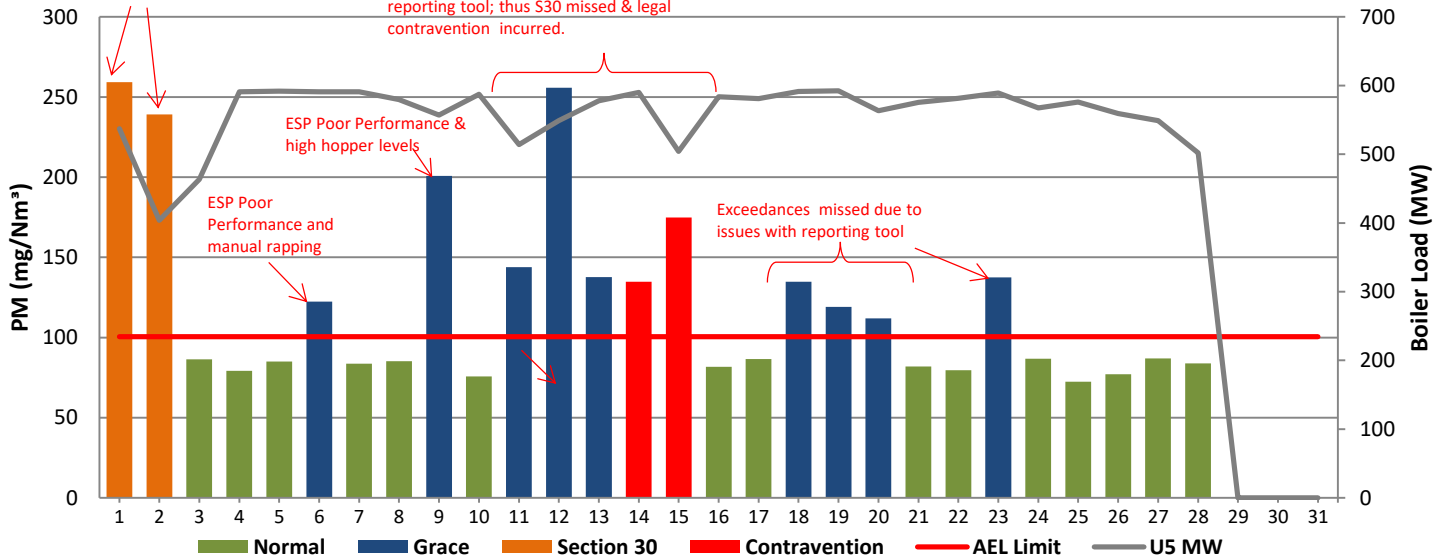
**Figure 3: Lethabo Unit 3 PM Emissions - January 2023**



**Figure 4: Lethabo Unit 4 PM Emissions - January 2023**

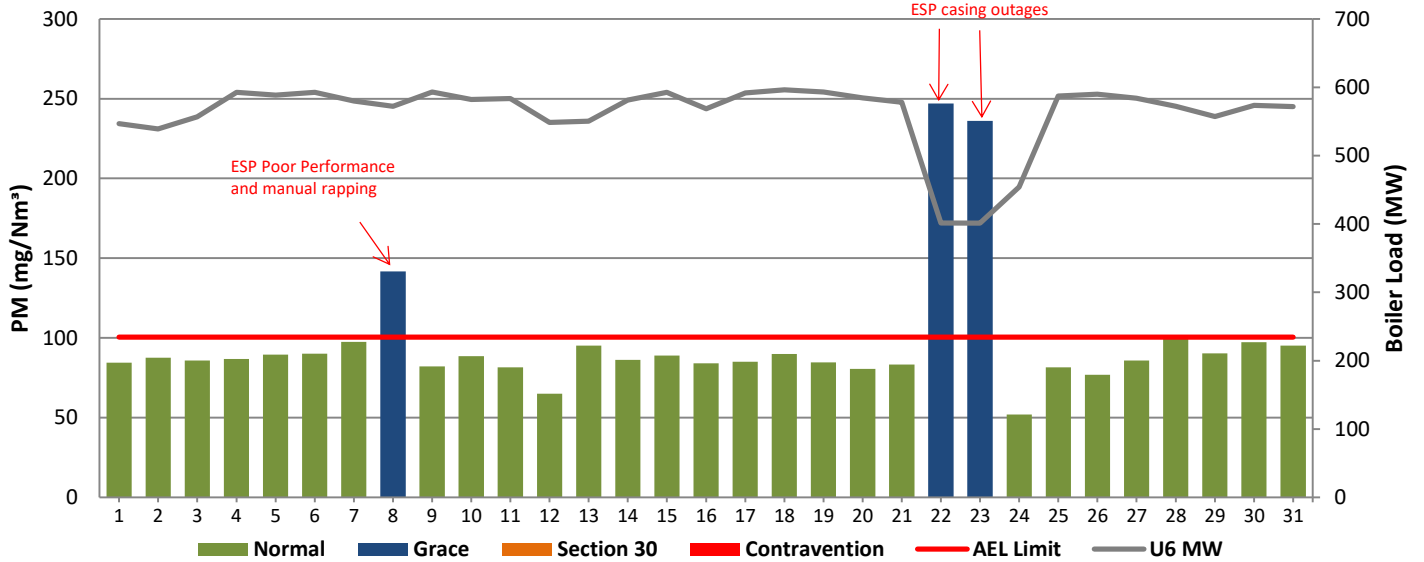


**Figure 5: Lethabo Unit 5 PM Emissions - January 2023**

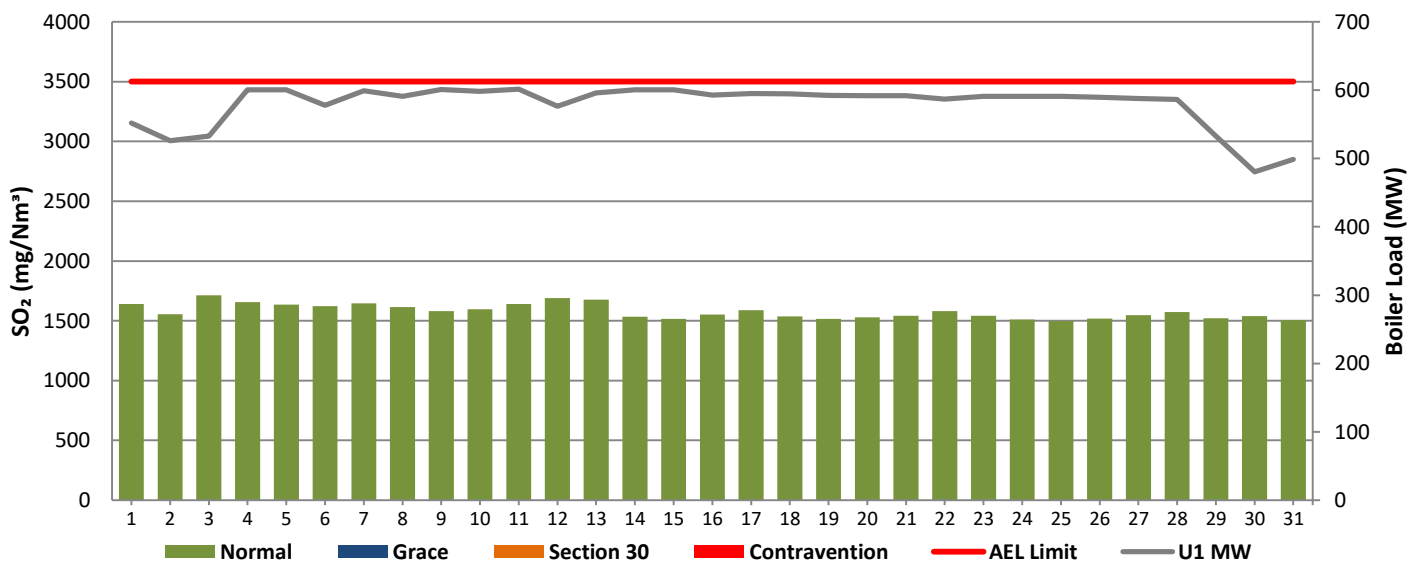




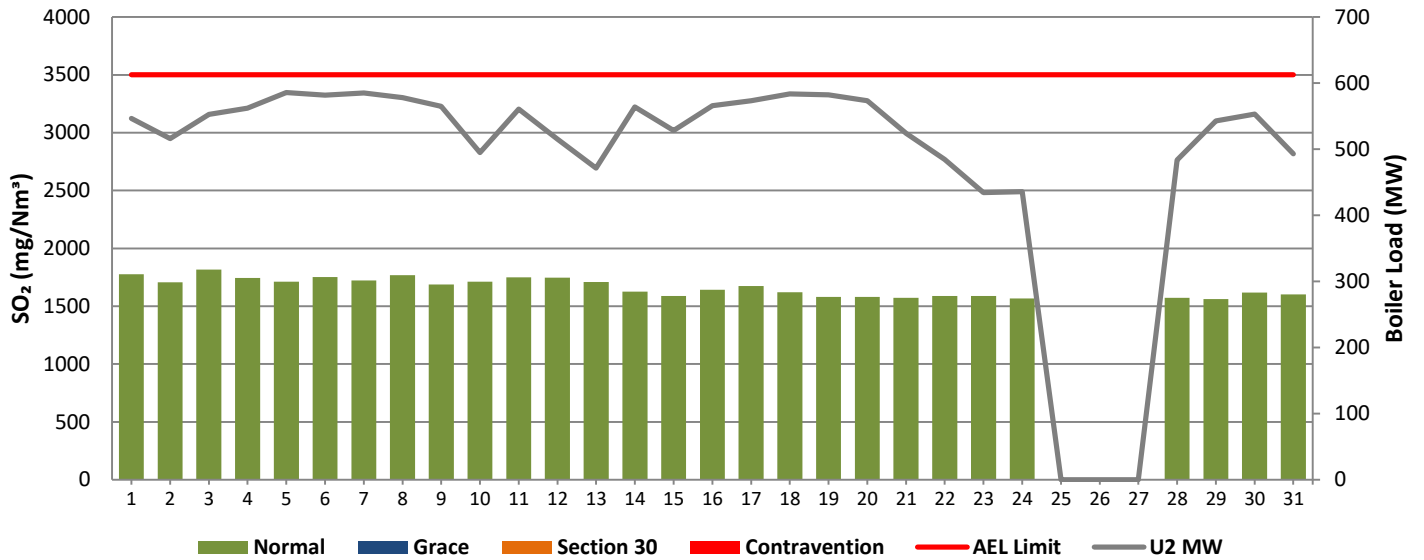
**Figure 6: Lethabo Unit 6 PM Emissions - January 2023**



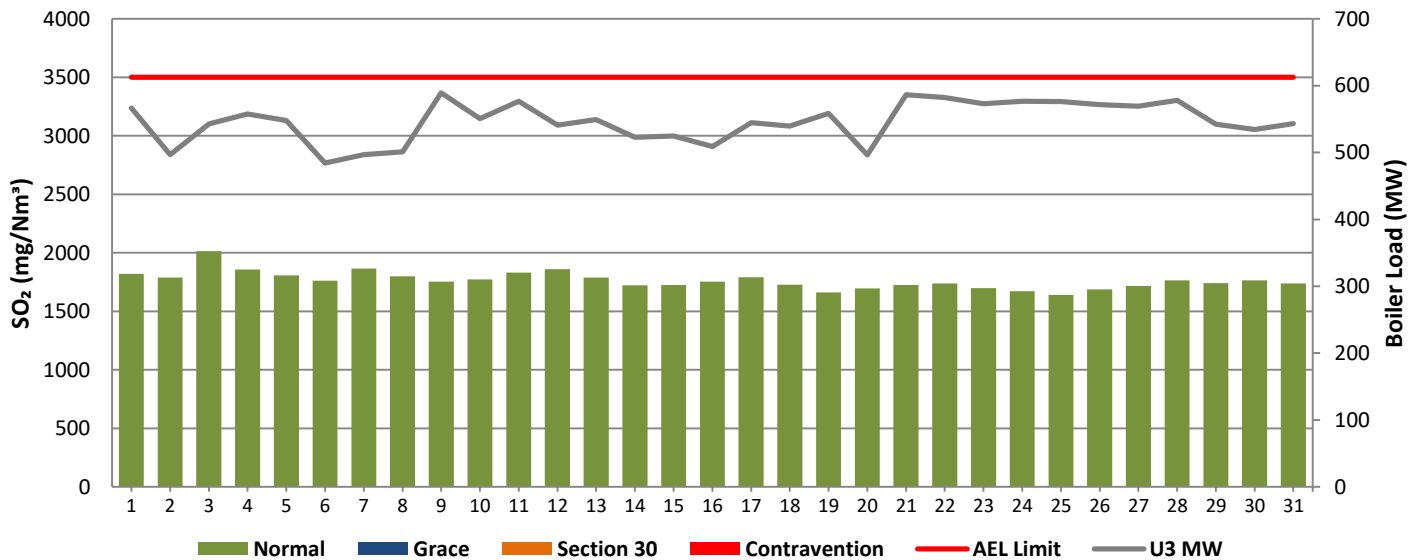
**Figure 7: Lethabo Unit 1 SO<sub>2</sub> Emissions - January 2023**



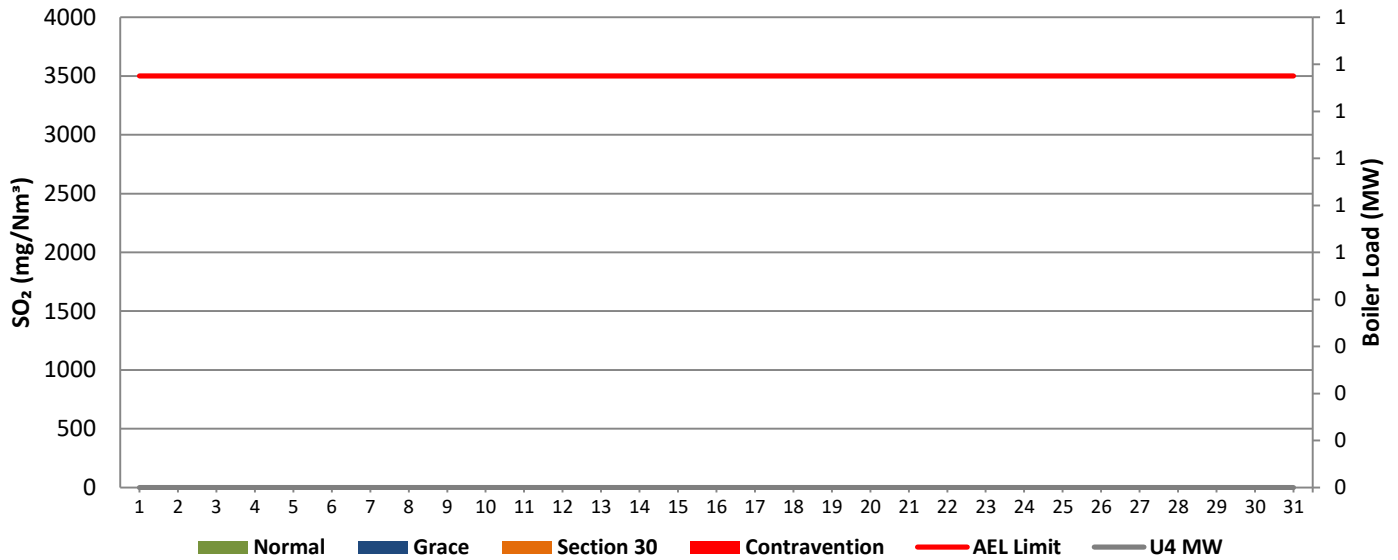
**Figure 8: Lethabo Unit 2 SO<sub>2</sub> Emissions - January 2023**



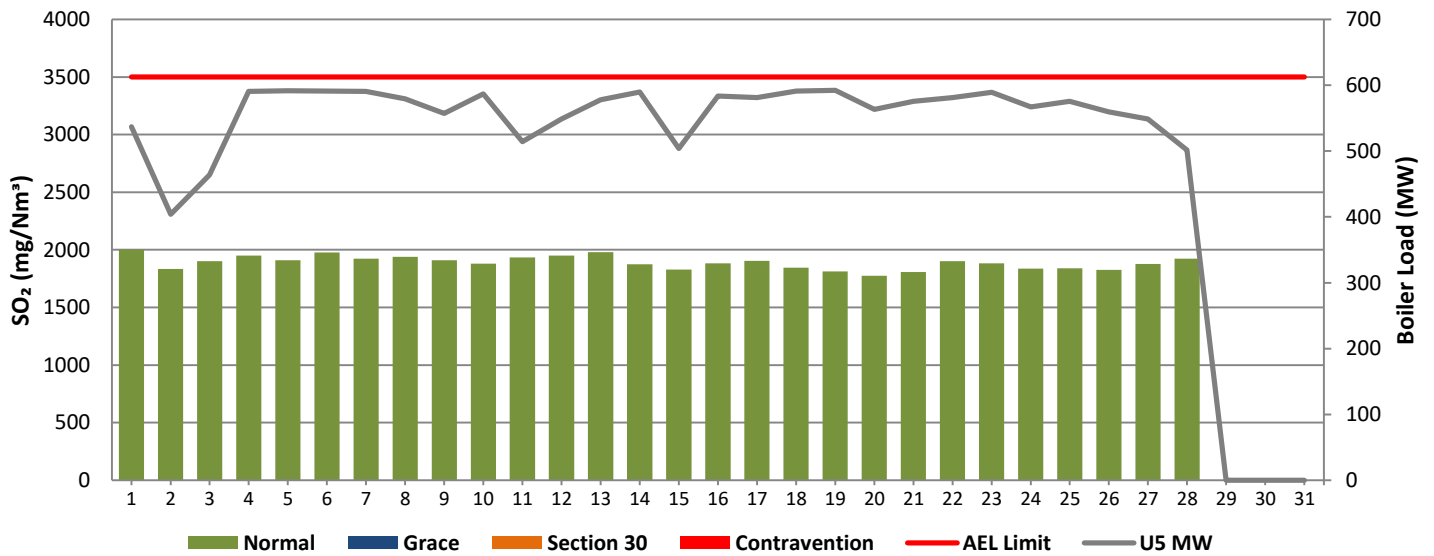
**Figure 9: Lethabo Unit 3 SO<sub>2</sub> Emissions - January 2023**



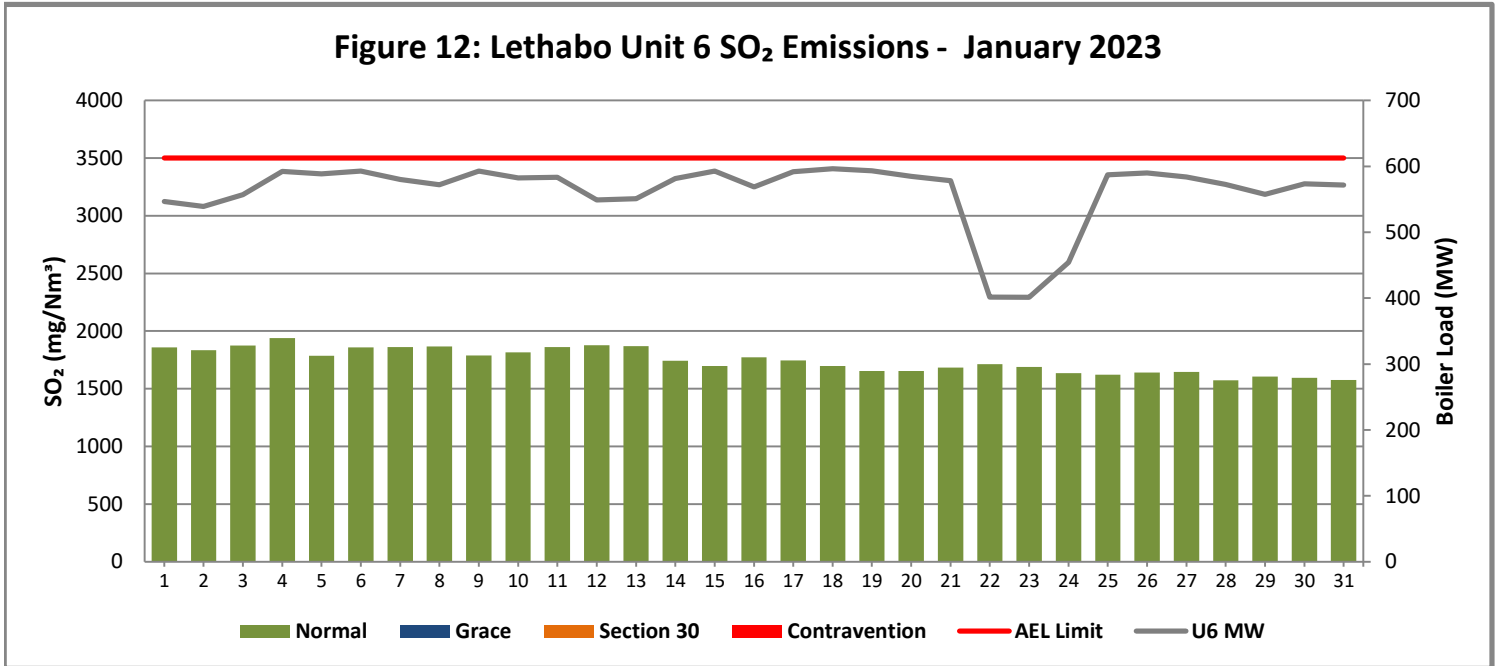
**Figure 10: Lethabo Unit 4 SO<sub>2</sub> Emissions - January 2023**



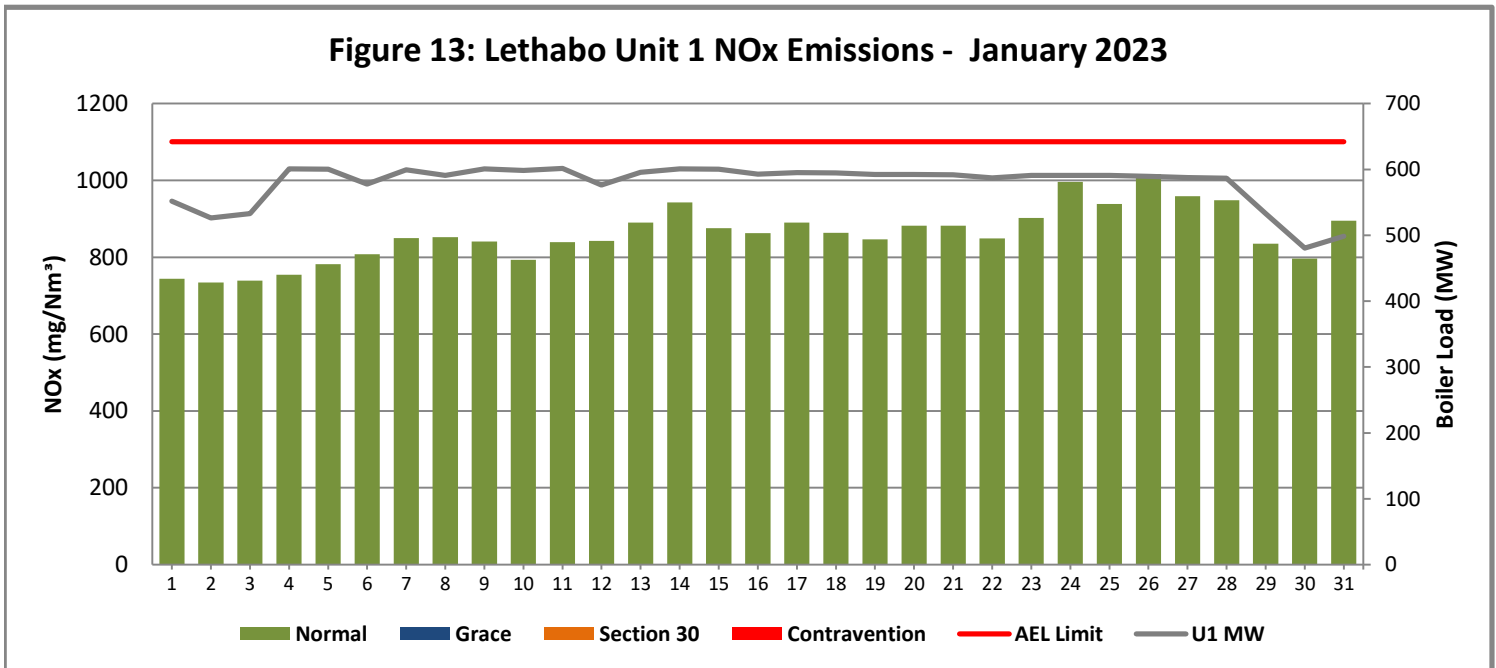
**Figure 11: Lethabo Unit 5 SO<sub>2</sub> Emissions - January 2023**



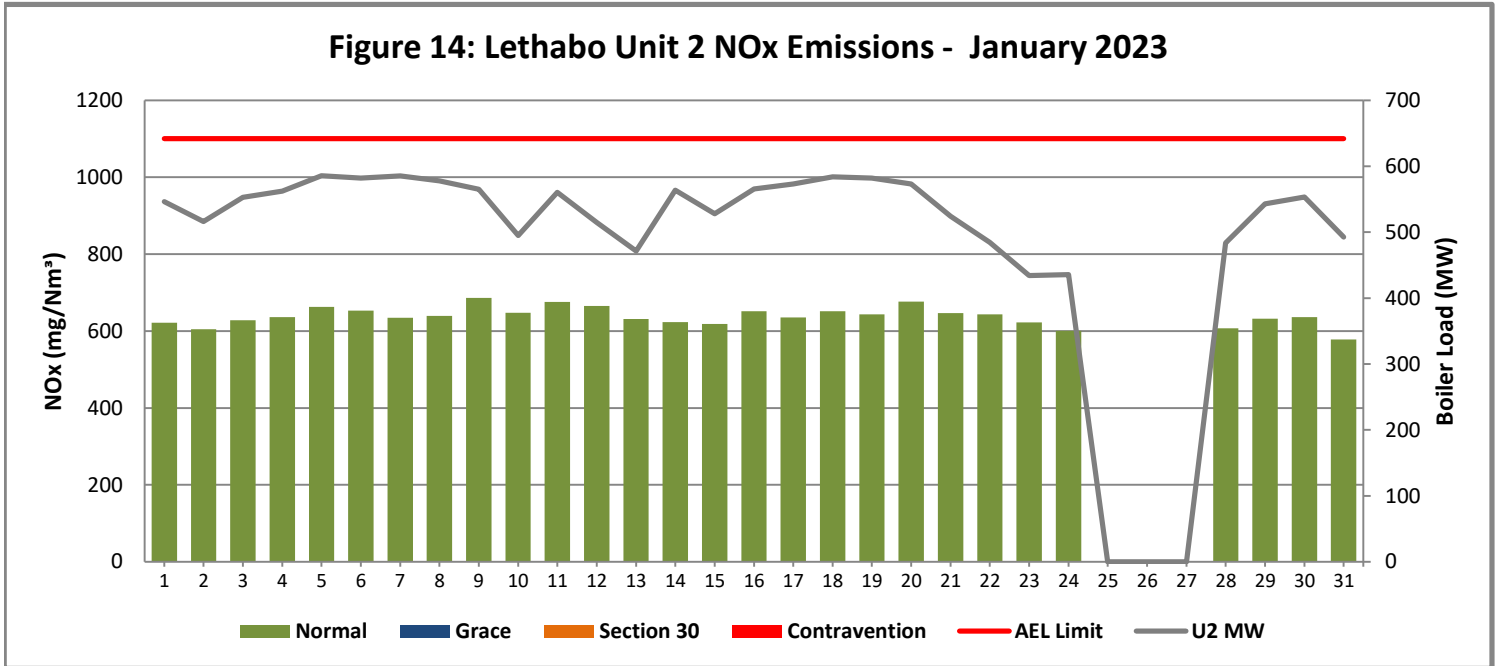
**Figure 12: Lethabo Unit 6 SO<sub>2</sub> Emissions - January 2023**



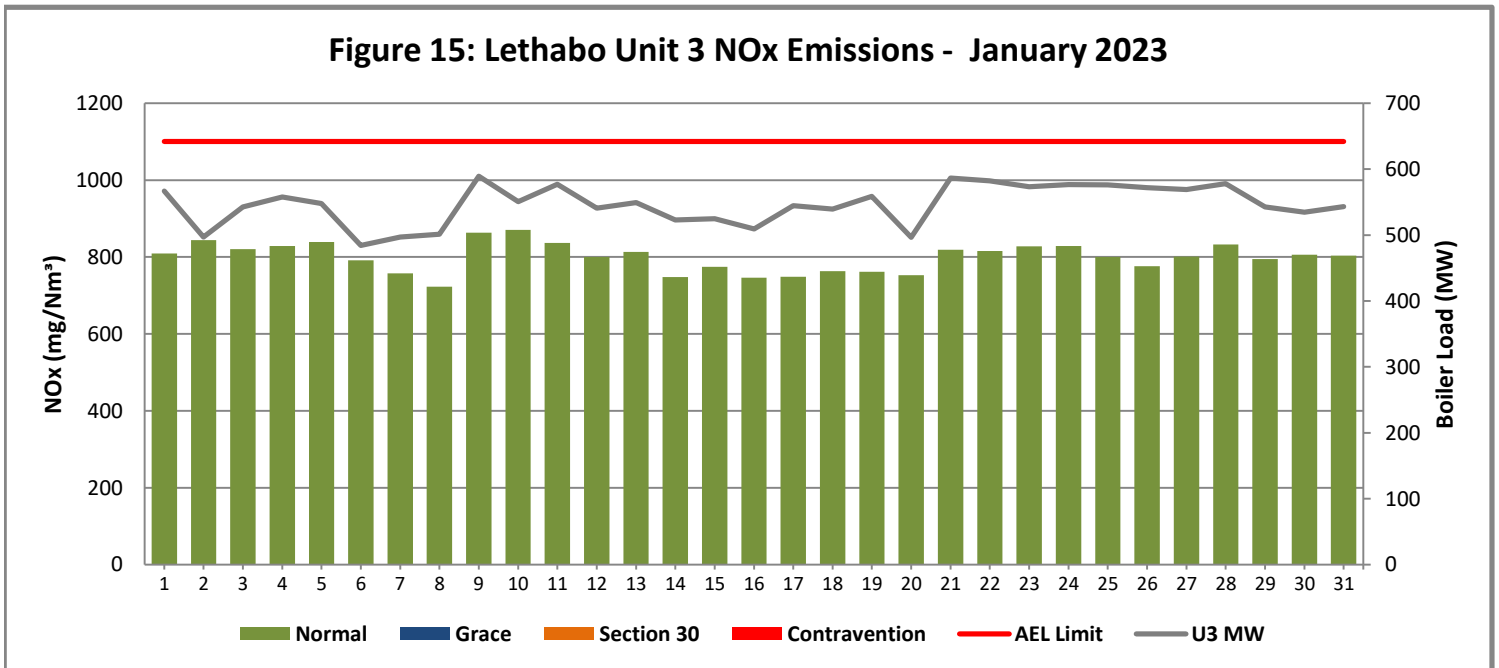
**Figure 13: Lethabo Unit 1 NO<sub>x</sub> Emissions - January 2023**



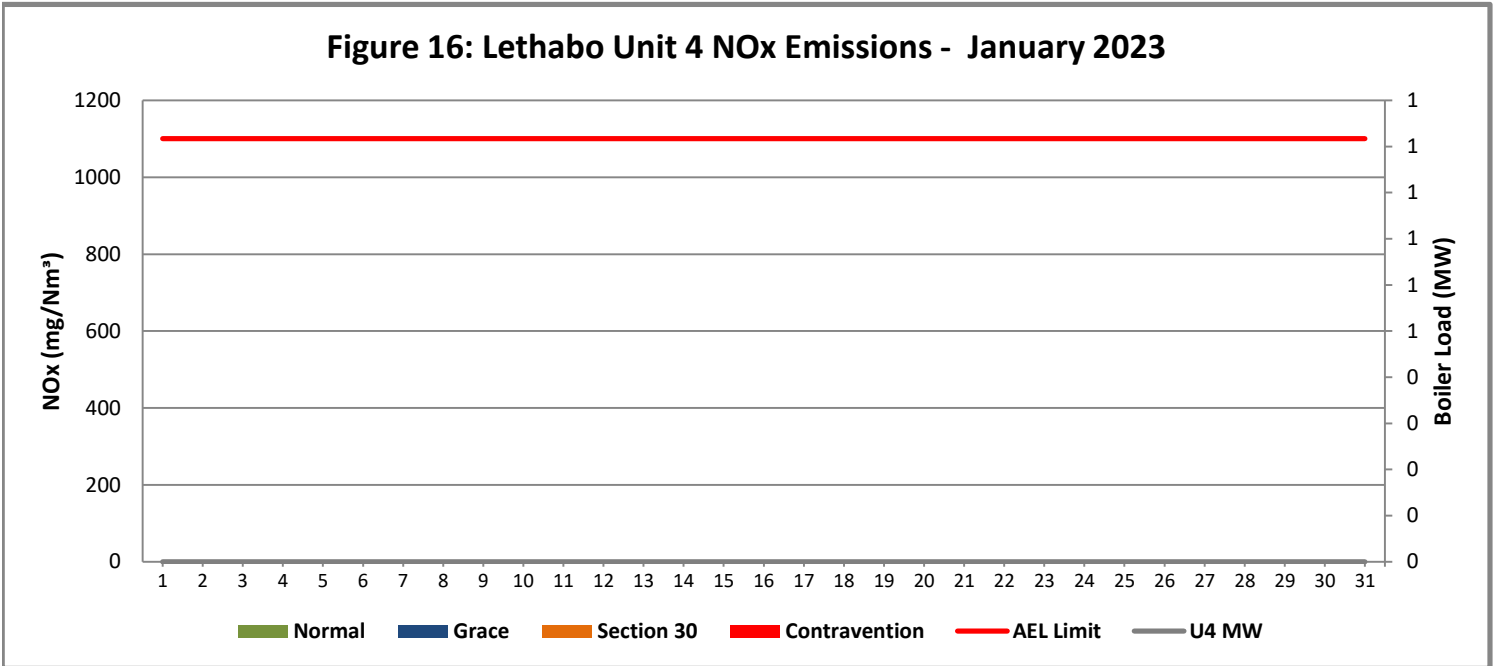
**Figure 14: Lethabo Unit 2 NOx Emissions - January 2023**



**Figure 15: Lethabo Unit 3 NOx Emissions - January 2023**



**Figure 16: Lethabo Unit 4 NOx Emissions - January 2023**



**Figure 17: Lethabo Unit 5 NOx Emissions - January 2023**

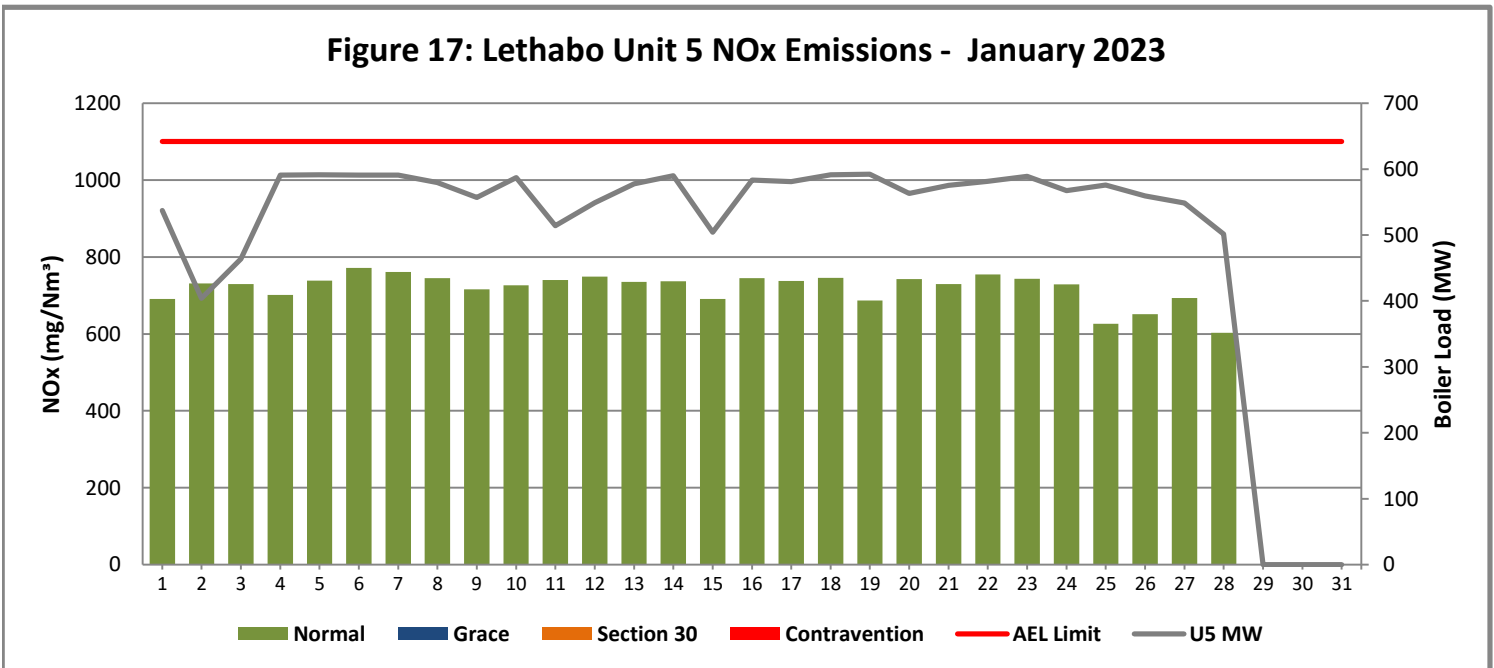
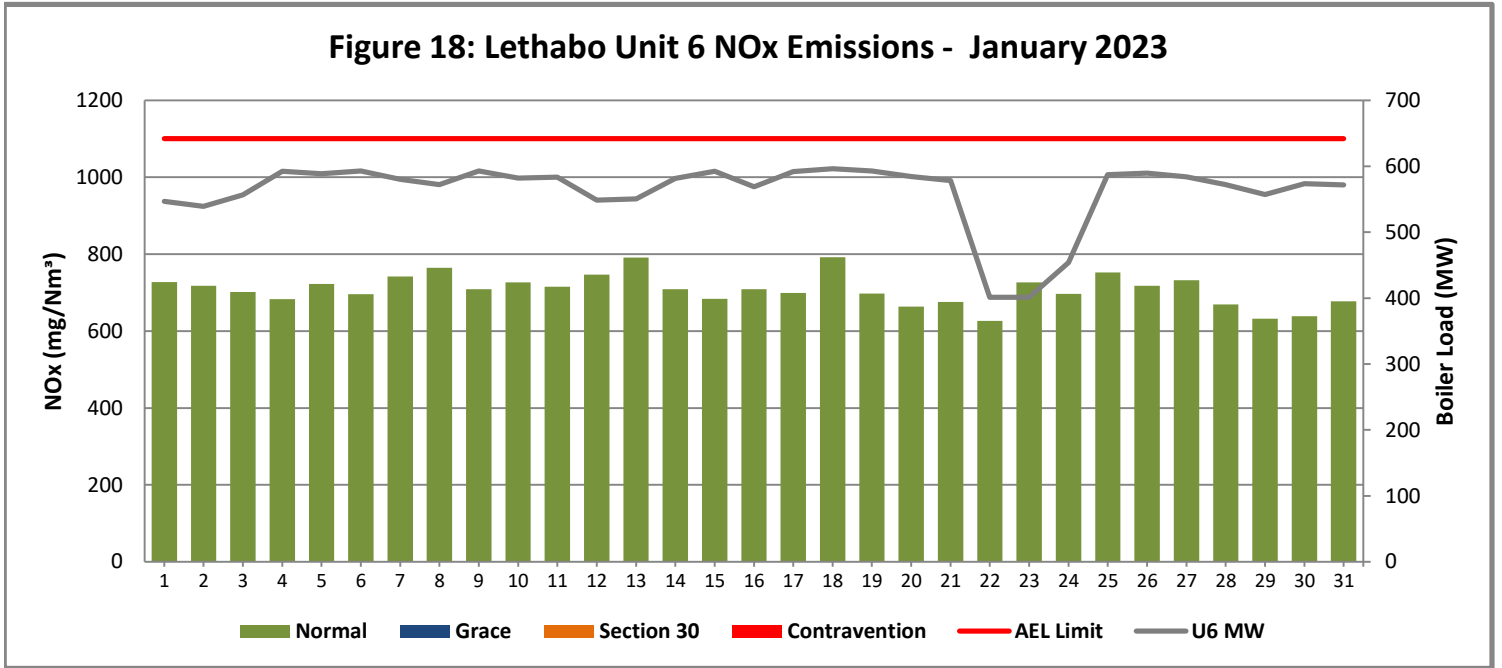


Figure 18: Lethabo Unit 6 NOx Emissions - January 2023



## 7 SHUT DOWN AND LIGHT UP INFORMATION

Table 7.1: PM Start-up information for the month of January 2023

<b>Unit No.1</b>							
<b>Breaker Open (BO)</b>							
<b>Draught Group (DG) Shut Down (SD)</b>							
<b>BO to DG SD (duration)</b>		DD:HH:MM		DD:HH:MM		DD:HH:MM	DD:HH:MM
<b>Fires in time</b>							
<b>Synch. to Grid (or BC)</b>							
<b>Fires in to BC (duration)</b>		DD:HH:MM		DD:HH:MM		DD:HH:MM	DD:HH:MM
<b>Emissions below limit from BC (end date)</b>							
<b>Emissions below limit from BC (duration)</b>		DD:HH:MM		DD:HH:MM		DD:HH:MM	DD:HH:MM

<b>Unit No.2</b>	<i>HPH 5A High level due to tube leak and sempell valve passing.</i>					
<b>Breaker Open (BO)</b>	10:15 PM	2023/01/24				
<b>Draught Group (DG) Shut Down (SD)</b>	10:55 AM	2023/01/25				
<b>BO to DG SD (duration)</b>	00:12:40	DD:HH:MM		DD:HH:MM		DD:HH:MM
<b>Fires in time</b>	2023/01/28 03h08	2023/01/28 03h08				
<b>Synch. to Grid (or BC)</b>	2:01 AM	2023/01/28				
<b>Fires in to BC (duration)</b>	#VALUE!	DD:HH:MM		DD:HH:MM		DD:HH:MM
<b>Emissions below limit from BC (end date)</b>	12:00 AM	2023/01/31				
<b>Emissions below limit from BC (duration)</b>	02:21:59	DD:HH:MM		DD:HH:MM		DD:HH:MM



<b>Unit No.3</b>							
<b>Breaker Open (BO)</b>							
<b>Draught Group (DG) Shut Down (SD)</b>							
<b>BO to DG SD (duration)</b>		DD:HH:MM		DD:HH:MM		DD:HH:MM	DD:HH:MM
<b>Fires in time</b>							
<b>Synch. to Grid (or BC)</b>							
<b>Fires in to BC (duration)</b>		DD:HH:MM		DD:HH:MM		DD:HH:MM	DD:HH:MM
<b>Emissions below limit from BC (end date)</b>							
<b>Emissions below limit from BC (duration)</b>		DD:HH:MM		DD:HH:MM		DD:HH:MM	DD:HH:MM

<b>Unit No.4</b>							
<b>Breaker Open (BO)</b>							
<b>Draught Group (DG) Shut Down (SD)</b>							
<b>BO to DG SD (duration)</b>		DD:HH:MM		DD:HH:MM		DD:HH:MM	DD:HH:MM
<b>Fires in time</b>							
<b>Synch. to Grid (or BC)</b>							
<b>Fires in to BC (duration)</b>		DD:HH:MM		DD:HH:MM		DD:HH:MM	DD:HH:MM
<b>Emissions below limit from BC (end date)</b>							
<b>Emissions below limit from BC (duration)</b>		DD:HH:MM		DD:HH:MM		DD:HH:MM	DD:HH:MM

<b>Unit No.5</b>	<i>AM: Boiler tube leak.</i>						
<b>Breaker Open (BO)</b>	11:45 PM	2023/01/28					
<b>Draught Group (DG) Shut Down (SD)</b>	5:22 PM	2023/01/29					
<b>BO to DG SD (duration)</b>	00:17:37	DD:HH:MM		DD:HH:MM		DD:HH:MM	DD:HH:MM
<b>Fires in time</b>							
<b>Synch. to Grid (or BC)</b>							
<b>Fires in to BC (duration)</b>		DD:HH:MM		DD:HH:MM		DD:HH:MM	DD:HH:MM
<b>Emissions below limit from BC (end date)</b>							
<b>Emissions below limit from BC (duration)</b>		DD:HH:MM		DD:HH:MM		DD:HH:MM	DD:HH:MM

<b>Unit No.6</b>							
<b>Breaker Open (BO)</b>							
<b>Draught Group (DG) Shut Down (SD)</b>							
<b>BO to DG SD (duration)</b>		DD:HH:MM		DD:HH:MM		DD:HH:MM	DD:HH:MM
<b>Fires in time</b>							
<b>Synch. to Grid (or BC)</b>							
<b>Fires in to BC (duration)</b>		DD:HH:MM		DD:HH:MM		DD:HH:MM	DD:HH:MM
<b>Emissions below limit from BC (end date)</b>							
<b>Emissions below limit from BC (duration)</b>		DD:HH:MM		DD:HH:MM		DD:HH:MM	DD:HH:MM

7.2: Point Source emissions released during start-up (fires-in) and Shut-down (SD) for the month of January 2023 in mg/Nm<sup>3</sup>

## 8. MAINTENANCE

<b>Unit 1</b>				
<b>Beginning of</b>	2023/01/30 15:41			
<b>Reason for Maintenance</b>	RHO precip casing.			
<b>End (Time):</b>	2023/01/31 23:59			
<b>Duration</b>	32:18:59	0:00:00		

<b>Unit 2</b>				
<b>Beginning of</b>	2023/01/28 05:01:00			
<b>Reason for Maintenance</b>	RH inner precip casing			
<b>End (Time):</b>	2023/01/28 07:54:00			
<b>Duration</b>	2:53:00	0:00:00		

<b>Unit 3</b>				
<b>Beginning of</b>	2023/01/01 00:00:00	2023/01/07 00:19	2023/01/08 00:18	2023/01/20 00:29
<b>Reason for Maintenance</b>	LHO Precip casing repairs	RHO Precip Casing	RHI precip casing repairs	LHI Precip Casing repairs
<b>End (Time):</b>	2023/01/01 00:37:00	2023/01/08 00:18	2023/01/08 23:59	2023/01/21 00:00
<b>Duration</b>	0:37:00	23:59:00	23:41:00	23:31:00

<b>Unit 4</b>				
<b>Beginning of</b>				
<b>Reason for Maintenance</b>				
<b>End (Time):</b>				
<b>Duration</b>				

<b>Unit 5</b>				
<b>Beginning of</b>	2023/01/15 00:11:00			
<b>Reason for Maintenance</b>	RHO precip casing repairs.			
<b>End (Time):</b>	2023/01/15 23:12:00			
<b>Duration</b>	23:01:00			

<b>Unit 6</b>				
<b>Beginning of</b>	2023/01/22 00:10:00	2023/01/23 05:15		
<b>Reason for Maintenance</b>	RHI Casing Outage	LHO Casing Outage		
<b>End (Time):</b>	2023/01/23 01:46:00	2023/01/24 02:48		
<b>Duration</b>	25:36:00	21:33:00		

## 9. GENERAL

### Unit 2 Monitor Reliability

16/01/2023: Monitor Reliability low (79.2%) due to monitors reading maximum

29/01/2023: Monitor Reliability Low (4.6%) due to unit light up

### Unit 5:

The daily emissions average limit was exceeded from the 11th January to the 15th January 2023. This was not reported as a Section 30. This exceedance is being investigated with head office regarding insertion of max emission values. The reading in the S30 tab of the Emissions Reporting Tool was not accounting for the insertion of the surrogate values when emission monitors max out. It was found that there was a referencing issue on the Emissions Reporting Tool. These exceedances were true and missed by the station as a result. A flash report was sent out and will be reported as a legal contravention.

It is noted that the Emissions reporting tool was rectified promptly by head office and the new version of the tool is now in use by the Station.

### Unit 5:

The exceedance on 01/01/2023 and 02/01/2023 are continuing from the previous month's reported Section 30 event.

### CO2 and Velocity Monitors Low Reliability Units 1-6:

Due to correction of bad data as per internal emission data integrity review actions in 2021 and 2022. Bad Velocity data and Bad CO2 data were corrected/removed as per the review actions and findings.

**ADDENDUM TO MONTHLY EMISSIONS REPORT**

**10. S30 INCIDENT OR LEGAL CONTRAVENTION REGISTER**

To be completed in the case of a S30 incident or a legal contravention:

Unit no	Incident Start Date	Incident End Date	Incident Cause	Remedial action	S30 initial notification sent	Date S30 investigation report sent	Date DEA Acknowledgment	Date DEA Acceptable	Comments / Reference No.
5	20/12/2022	02/01/2023	Leaking steam on sulphur supply line and damage combustion chamber skin casing.	Repairs to the steam line, defective casing and various other defects found.	28/12/2022	05/01/2023			NEMA S30 Incident
5	11/01/2023	15/01/2023	Exceedances missed due to issues with reporting tool; thus S30 missed & legal contravention incurred.	Reporting tool correct by head office and new revision was obtained					Legal Contravention incurred

**11. PARTICULATE EMISSIONS**

**EMISSION RATE (ACTUAL EMISSION/MWh GENERATED - kg/MWh)**

MONTH	UNIT 1	UNIT 2	UNIT 3	UNIT 4	UNIT 5	UNIT 6	STATION
Feb-22	0.47	1.06	0.62	0.44	0.38	0.59	0.56
Mar-22	0.73	0.90	0.66	0.58	0.33	0.43	0.57
Apr-22	0.60	0.61	0.53	0.45	OFF	0.37	0.51
May-22	0.55	0.59	0.33	0.19	OFF	0.44	0.45
Jun-22	0.55	0.63	0.37	0.77	OFF	0.48	0.56
Jul-22	0.36	0.42	0.42	0.54	0.11	0.33	0.40
Aug-22	0.28	0.41	0.50	0.64	0.27	0.32	0.40
Sep-22	0.40	0.24	0.31	0.80	0.33	0.40	0.42
Oct-22	0.54	0.39	0.44	0.40	0.47	0.44	0.44
Nov-22	0.62	0.39	0.33	0.59	0.59	0.57	0.52
Dec-22	0.58	0.67	0.58	OFF	0.94	0.50	0.65
Jan-23	0.40	0.69	0.59	OFF	0.74	0.45	0.57

**ADDENDUM TO MONTHLY EMISSIONS REPORT**

**12. DAILY EMISSIONS FIGURES**

**Final Dust Concentration (mg/Nm<sup>3</sup>)**

Date	U1	U2	U3	U4	U5	U6	Limit
01-Jan	226	59	162	OFF	259	84	100
02-Jan	55	52	87	OFF	239	88	100
03-Jan	18	64	84	OFF	86	86	100
04-Jan	23	63	95	OFF	79	87	100
05-Jan	38	88	91	OFF	85	90	100
06-Jan	83	79	79	OFF	122	90	100
07-Jan	51	82	166	OFF	84	97	100
08-Jan	55	99	271	OFF	85	142	100
09-Jan	59	287	86	OFF	201	82	100
10-Jan	65	94	85	OFF	76	89	100
11-Jan	71	370	118	OFF	144	82	100
12-Jan	59	94	95	OFF	256	65	100
13-Jan	61	278	96	OFF	138	95	100
14-Jan	86	339	91	OFF	135	86	100
15-Jan	95	94	92	OFF	175	89	100
16-Jan	86	66	91	OFF	82	84	100
17-Jan	87	94	226	OFF	87	85	100
18-Jan	72	93	80	OFF	135	90	100
19-Jan	86	81	95	OFF	119	85	100
20-Jan	75	234	277	OFF	112	81	100
21-Jan	75	121	86	OFF	82	83	100
22-Jan	69	158	89	OFF	80	247	100
23-Jan	66	61	84	OFF	137	236	100
24-Jan	71	221	77	OFF	87	52	100
25-Jan	67	OFF	75	OFF	72	81	100
26-Jan	66	OFF	66	OFF	77	77	100
27-Jan	72	OFF	90	OFF	87	86	100
28-Jan	101	OFF	136	OFF	84	100	100
29-Jan	101	214	218	OFF	OFF	90	100
30-Jan	94	291	86	OFF	OFF	97	100
31-Jan	135	53	146	OFF	OFF	95	100

**ADDENDUM TO MONTHLY EMISSIONS REPORT**

**Final SOx Concentration (mg/Nm<sup>3</sup>)**

Date	U1	U2	U3	U4	U5	U6	Limit
01-Jan	1639	1777	1820	OFF	2002	1860	3500
02-Jan	1555	1706	1788	OFF	1835	1833	3500
03-Jan	1713	1816	2013	OFF	1901	1874	3500
04-Jan	1657	1744	1858	OFF	1950	1939	3500
05-Jan	1634	1712	1807	OFF	1910	1786	3500
06-Jan	1622	1752	1761	OFF	1976	1858	3500
07-Jan	1646	1723	1865	OFF	1924	1861	3500
08-Jan	1614	1768	1798	OFF	1941	1865	3500
09-Jan	1581	1688	1755	OFF	1911	1790	3500
10-Jan	1596	1713	1771	OFF	1879	1816	3500
11-Jan	1641	1750	1830	OFF	1934	1861	3500
12-Jan	1689	1747	1859	OFF	1950	1878	3500
13-Jan	1677	1710	1788	OFF	1979	1871	3500
14-Jan	1533	1625	1723	OFF	1875	1742	3500
15-Jan	1516	1588	1724	OFF	1829	1698	3500
16-Jan	1553	1643	1754	OFF	1882	1772	3500
17-Jan	1588	1675	1791	OFF	1905	1745	3500
18-Jan	1536	1622	1728	OFF	1845	1697	3500
19-Jan	1516	1581	1662	OFF	1814	1653	3500
20-Jan	1529	1580	1697	OFF	1776	1655	3500
21-Jan	1543	1573	1724	OFF	1807	1683	3500
22-Jan	1581	1589	1737	OFF	1901	1714	3500
23-Jan	1541	1589	1697	OFF	1882	1688	3500
24-Jan	1510	1566	1673	OFF	1837	1636	3500
25-Jan	1498	OFF	1639	OFF	1841	1621	3500
26-Jan	1520	OFF	1688	OFF	1826	1642	3500
27-Jan	1546	OFF	1715	OFF	1878	1646	3500
28-Jan	1574	1572	1764	OFF	1923	1574	3500
29-Jan	1520	1562	1740	OFF	OFF	1605	3500
30-Jan	1538	1617	1765	OFF	OFF	1596	3500
31-Jan	1506	1601	1737	OFF	OFF	1576	3500

**ADDENDUM TO MONTHLY EMISSIONS REPORT**

**Final NOx Concentration (mg/Nm<sup>3</sup>)**

Date	U1	U2	U3	U4	U5	U6	Limit
01-Jan	744	621	809	OFF	691	727	1100
02-Jan	734	605	844	OFF	731	718	1100
03-Jan	739	628	820	OFF	729	701	1100
04-Jan	754	636	828	OFF	702	683	1100
05-Jan	781	663	839	OFF	739	722	1100
06-Jan	808	653	791	OFF	772	696	1100
07-Jan	850	635	757	OFF	761	742	1100
08-Jan	852	640	723	OFF	745	765	1100
09-Jan	841	687	863	OFF	716	709	1100
10-Jan	793	648	871	OFF	726	726	1100
11-Jan	839	676	836	OFF	740	716	1100
12-Jan	842	665	800	OFF	749	747	1100
13-Jan	890	631	813	OFF	735	791	1100
14-Jan	943	624	748	OFF	737	709	1100
15-Jan	876	618	775	OFF	691	684	1100
16-Jan	862	652	746	OFF	745	709	1100
17-Jan	890	635	749	OFF	738	699	1100
18-Jan	863	651	763	OFF	746	792	1100
19-Jan	847	643	761	OFF	687	698	1100
20-Jan	882	677	753	OFF	742	664	1100
21-Jan	882	647	819	OFF	730	676	1100
22-Jan	849	643	816	OFF	755	627	1100
23-Jan	902	623	828	OFF	744	726	1100
24-Jan	996	601	828	OFF	729	697	1100
25-Jan	938	OFF	800	OFF	626	752	1100
26-Jan	1016	OFF	776	OFF	652	717	1100
27-Jan	959	OFF	801	OFF	694	732	1100
28-Jan	948	607	832	OFF	603	670	1100
29-Jan	835	633	795	OFF	OFF	632	1100
30-Jan	796	636	806	OFF	OFF	639	1100
31-Jan	895	578	803	OFF	OFF	677	1100



**ADDENDUM TO MONTHLY EMISSIONS REPORT**

**13. AVAILABILITY**

ESP utilisation

Availability												
Month	Unit 1	Days Affected	Unit 2	Days Affected	Unit 3	Days Affected	Unit 4	Days Affected	Unit 5	Days Affected	Unit 6	Days Affected
Feb-22	100.00%	0.0	100.00%	0.0	100.00%	0.0	100.00%	0.0	100.00%	0.0	98.54%	1.6
Mar-22	98.73%	1.6	98.70%	1.6	100.00%	0.0	100.00%	0.0	100.00%	0.0	100.00%	0.0
Apr-22	100.00%	0.0	98.63%	1.6	100.00%	0.0	98.46%	1.9	OFF	OFF	100.00%	0.0
May-22	98.73%	1.6	98.13%	2.3	100.00%	0.0	100.00%	0.0	OFF	OFF	100.00%	0.0
Jun-22	98.33%	2.0	99.05%	1.1	100.00%	0.0	100.00%	0.0	OFF	OFF	97.53%	3.0
Jul-22	99.37%	0.8	98.80%	1.5	100.00%	0.0	97.23%	3.4	100.00%	0.0	100.00%	0.0
Aug-22	99.42%	0.7	98.67%	1.6	100.00%	0.0	99.32%	0.8	100.00%	0.0	100.00%	0.0
Sep-22	98.86%	1.4	100.00%	0.0	100.00%	0.0	99.27%	0.9	98.44%	1.9	99.20%	1.0
Oct-22	98.80%	1.5	98.86%	1.4	100.00%	0.0	100.00%	0.0	99.24%	0.9	100.00%	0.0
Nov-22	99.29%	0.9	100.00%	0.0	100.00%	0.0	100.00%	0.0	98.86%	1.4	98.56%	1.7
Dec-22	99.29%	0.9	98.58%	1.8	98.66%	1.7	OFF	OFF	99.36%	0.8	98.46%	1.9
Jan-23	98.91%	1.3	99.90%	0.1	97.59%	3.0	OFF	OFF	99.23%	1.0	98.42%	2.0

SO<sub>3</sub> plant utilisation

Availability												
Month	Unit 1	Days Affected	Unit 2	Days Affected	Unit 3	Days Affected	Unit 4	Days Affected	Unit 5	Days Affected	Unit 6	Days Affected
Feb-22	99.40%	0.2	85.42%	4.1	97.47%	0.7	100.00%	0.0	100.00%	0.0	97.17%	0.8
Mar-22	87.77%	3.8	100.00%	0.0	100.00%	0.0	87.23%	4.0	100.00%	0.0	100.00%	0.0
Apr-22	99.72%	0.1	100.00%	0.0	95.69%	1.3	98.33%	0.5	OFF	OFF	100.00%	0.0
May-22	98.66%	0.4	100.00%	0.0	97.45%	0.8	98.92%	0.3	OFF	OFF	96.51%	1.1
Jun-22	97.78%	0.7	96.25%	1.1	98.19%	0.5	46.67%	16.0	OFF	OFF	98.06%	0.6
Jul-22	100.00%	0.0	100.00%	0.0	100.00%	0.0	100.00%	0.0	86.67%	4.0	98.61%	0.4
Aug-22	98.52%	0.5	100.00%	0.0	96.51%	1.1	65.19%	10.8	99.33%	0.2	100.00%	0.0
Sep-22	100.00%	0.0	99.58%	0.1	100.00%	0.0	94.27%	1.7	97.92%	0.6	100.00%	0.0
Oct-22	89.39%	3.3	100.00%	0.0	82.41%	5.5	99.73%	0.1	79.69%	6.3	100.00%	0.0
Nov-22	100.00%	0.0	100.00%	0.0	97.21%	0.8	88.86%	3.3	100.00%	0.0	100.00%	0.0
Dec-22	85.12%	4.6	98.28%	0.5	99.88%	0.0	OFF	OFF	62.90%	11.5	100.00%	0.0
Jan-23	90.05%	3.1	93.82%	1.9	100.00%	0.0	OFF	OFF	91.52%	2.6	100.00%	0.0

**ADDENDUM TO MONTHLY EMISSIONS REPORT**

Particulate Emission Monitors

Availability						
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Feb-22	98.28%	95.56%	99.67%	100.00%	99.85%	99.40%
Mar-22	94.33%	95.83%	95.56%	99.67%	98.38%	98.79%
Apr-22	96.20%	94.58%	98.99%	99.57%	OFF	100.00%
May-22	97.32%	99.06%	99.65%	99.72%	OFF	100.00%
Jun-22	90.56%	97.50%	97.33%	98.56%	OFF	98.71%
Jul-22	98.92%	98.75%	100.00%	91.10%	100.00%	97.54%
Aug-22	99.85%	96.77%	100.00%	96.24%	98.61%	100.00%
Sep-22	98.69%	100.00%	92.89%	96.01%	99.31%	99.17%
Oct-22	96.61%	97.27%	99.38%	100.00%	95.14%	98.66%
Nov-22	94.72%	95.66%	97.08%	98.85%	98.92%	97.64%
Dec-22	99.09%	93.78%	98.73%	OFF	67.20%	98.66%
Jan-23	99.46%	90.07%	98.79%	OFF	96.28%	98.39%

## Gaseous Emission Monitors

Availability												
	Unit 1		Unit 2		Unit 3		Unit 4		Unit 5		Unit 6	
Month	SO <sub>x</sub>	NO <sub>x</sub>	SO <sub>x</sub>	NO <sub>x</sub>	SO <sub>x</sub>	NO <sub>x</sub>	SO <sub>x</sub>	NO <sub>x</sub>	SO <sub>x</sub>	NO <sub>x</sub>	SO <sub>x</sub>	NO <sub>x</sub>
Feb-22	100.00%	100.00%	100.00%	100.00%	99.85%	100.00%	99.40%	99.40%	99.26%	99.40%	99.55%	99.55%
Mar-22	98.30%	98.30%	98.92%	99.06%	99.06%	99.33%	99.84%	100.00%	98.88%	98.88%	98.79%	98.66%
Apr-22	99.31%	99.31%	99.58%	99.86%	100.00%	99.86%	99.44%	99.86%	OFF	OFF	100.00%	100.00%
May-22	99.71%	99.86%	99.60%	99.60%	99.83%	99.83%	90.93%	91.16%	OFF	OFF	99.83%	99.83%
Jun-22	99.86%	99.86%	99.86%	99.86%	100.00%	100.00%	98.92%	99.07%	OFF	OFF	98.89%	99.17%
Jul-22	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	99.87%	100.00%	100.00%	100.00%	98.96%	98.81%
Aug-22	100.00%	100.00%	100.00%	100.00%	99.83%	99.83%	99.87%	99.73%	99.70%	99.57%	99.60%	99.73%
Sep-22	100.00%	100.00%	100.00%	100.00%	99.62%	100.00%	93.83%	93.83%	94.86%	94.86%	94.86%	94.86%
Oct-22	98.95%	78.72%	99.87%	100.00%	99.86%	99.86%	100.00%	100.00%	99.86%	99.86%	99.87%	99.87%
Nov-22	99.86%	99.86%	99.72%	99.86%	99.81%	99.81%	100.00%	100.00%	99.72%	99.72%	99.44%	99.44%
Dec-22	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	OFF	OFF	100.00%	99.87%	99.87%	100.00%
Jan-23	97.85%	97.85%	99.69%	99.69%	100.00%	100.00%	OFF	OFF	99.85%	99.85%	99.60%	99.60%

Oxygen Monitor Availability						
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Feb-22	100.00%	100.00%	98.74%	99.55%	99.40%	99.55%
Mar-22	98.30%	98.92%	99.19%	99.84%	98.88%	98.52%
Apr-22	99.13%	100.00%	100.00%	81.67%	OFF	99.72%
May-22	100.00%	99.73%	99.83%	99.75%	OFF	99.83%
Jun-22	99.72%	97.22%	99.52%	98.77%	OFF	98.75%
Jul-22	99.87%	99.87%	99.46%	99.87%	100.00%	98.96%
Aug-22	99.73%	99.60%	99.67%	99.73%	99.40%	99.60%
Sep-22	99.72%	99.71%	99.62%	93.67%	94.72%	94.44%
Oct-22	99.27%	99.87%	99.57%	99.73%	99.72%	99.60%
Nov-22	99.72%	99.72%	99.62%	98.82%	99.44%	99.58%
Dec-22	99.65%	99.72%	99.72%	#VALUE!	99.87%	99.87%
Jan-23	97.45%	99.04%	99.87%	#VALUE!	99.70%	99.73%

### ADDENDUM TO MONTHLY EMISSIONS REPORT

#### 14. EFFICIENCY

ESP Efficiency (%)						
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Feb-22	99.825%	99.561%	99.743%	99.823%	99.839%	99.745%
Mar-22	99.725%	99.623%	99.726%	99.768%	99.862%	99.816%
Apr-22	99.778%	99.748%	99.786%	99.822%	OFF	99.842%
May-22	99.672%	99.488%	99.880%	99.961%	OFF	99.844%
Jun-22	99.769%	99.712%	99.833%	99.657%	OFF	99.778%
Jul-22	99.857%	99.812%	99.818%	99.768%	99.955%	99.850%
Aug-22	99.881%	99.804%	99.768%	99.708%	99.873%	99.846%
Sep-22	99.834%	99.888%	99.868%	99.660%	99.857%	99.815%
Oct-22	99.772%	99.814%	99.807%	99.826%	99.795%	99.796%
Nov-22	99.761%	99.828%	99.859%	99.769%	99.752%	99.756%
Dec-22	99.788%	99.724%	99.768%	Unit Off-lin	99.637%	99.799%
Jan-23	99.848%	99.709%	99.766%	Unit Off-lin	99.702%	99.813%

15. REMARKS

UNIT	MWLOSS	REASON	ACTUALSTARTDATE	ACTUALENDDATE
1	182	AM: Manual rapping	2023/01/06 21:17:00	2023/01/07 00:33:00
1	98	Clean rapping.	2023/01/17 01:05:00	2023/01/17 02:26:00
1	86	EF: High stack emissions	2023/01/28 21:16:00	2023/01/28 22:20:00
1	88	EF: High stack emissions	2023/01/29 09:06:00	2023/01/29 16:58:00
1	188	EF: High stack emissions	2023/01/29 20:41:00	2023/01/30 03:17:00
1	190	High stack emissions.	2023/01/30 09:00:00	2023/01/30 15:41:00
1	90	RHO precip casing.	2023/01/30 15:41:00	2023/01/31 23:59:59
2	51	EF: High stack emissions	2023/01/09 10:08:00	2023/01/09 11:44:00
2	100	EF: High stack emissions	2023/01/09 11:44:00	2023/01/09 14:55:00
2	100	AM: Manual rapping	2023/01/09 21:00:00	2023/01/09 23:24:00
2	100	High stack emissions	2023/01/10 10:27:00	2023/01/10 12:11:00
2	152	High stack emissions	2023/01/10 12:11:00	2023/01/10 15:14:00
2	172	High stack emissions	2023/01/10 15:14:00	2023/01/11 00:45:00
2	99	AM: Precip. de-energised rapping.	2023/01/11 20:50:00	2023/01/12 00:06:00
2	102	Manual rapping.	2023/01/14 20:30:00	2023/01/14 23:12:00
2	100	EF: High stack emissions	2023/01/15 10:16:00	2023/01/16 02:03:00
2	50	High stack emissions	2023/01/17 19:29:00	2023/01/17 21:25:00
2	97	AM: Precip. manual rapping.	2023/01/20 19:56:00	2023/01/21 02:12:00
2	100	High stack emissions.	2023/01/21 08:39:00	2023/01/21 11:22:00
2	150	high stack emissions.	2023/01/21 11:22:00	2023/01/21 17:24:00
2	150	EF: High stack emissions	2023/01/21 19:19:00	2023/01/21 19:41:00
2	202	EF: High stack emissions	2023/01/21 19:41:00	2023/01/21 20:57:00
2	152	EF: High stack emissions	2023/01/22 01:01:00	2023/01/22 14:41:00
2	150	High stack emissions.	2023/01/22 19:31:00	2023/01/22 20:52:00
2	100	High stack emissions.	2023/01/24 18:14:00	2023/01/24 22:07:00
2	593	HPH 5A High level due to tube leak and sempell valve passing.	2023/01/24 22:07:00	2023/01/28 02:01:00
2	100	RH inner precip casing drying out	2023/01/28 05:01:00	2023/01/28 07:54:00
2	147	High stack emissions.	2023/01/30 08:23:00	2023/01/30 09:49:00
2	50	High stack emissions.	2023/01/31 10:00:00	2023/01/31 14:21:00
3	118	AM: LHO Precip casing repairs	2023/01/01 00:00:00	2023/01/01 00:37:00
3	118	LHO hopper(13 WX22 H1&H2) blocked	2023/01/01 09:31:00	2023/01/01 16:20:00
3	217	EF: High stack emissions	2023/01/02 13:40:00	2023/01/02 16:39:00
3	118	EF: High stack emissions	2023/01/02 16:39:00	2023/01/02 18:28:00
3	97	high stack emissions.	2023/01/02 20:28:00	2023/01/03 00:24:00
3	85	high stack emissions	2023/01/03 20:09:00	2023/01/04 00:39:00
3	115	AM: High stack emissions	2023/01/04 10:33:00	2023/01/04 15:46:00
3	168	High stack emissions.	2023/01/04 20:25:00	2023/01/05 02:50:00
3	118	EF: High stack emissions	2023/01/05 08:14:00	2023/01/05 16:27:00
3	117	High stack emissions.	2023/01/06 09:21:00	2023/01/06 13:30:00
3	216	High stack emissions.	2023/01/06 13:30:00	2023/01/07 00:19:00
3	118	RHO Precip Casing repairs	2023/01/07 00:19:00	2023/01/08 00:18:00
3	116	AM: RHI precip casing repairs	2023/01/08 00:18:00	2023/01/08 23:59:00
3	98	High stack emissions.	2023/01/11 03:30:00	2023/01/11 04:52:00
3	97	High stack emissions.	2023/01/12 00:16:00	2023/01/12 02:56:00
3	44	High stack emissions.	2023/01/12 11:22:00	2023/01/12 15:46:00
3	48	High stack emissions.	2023/01/12 20:35:00	2023/01/12 21:11:00
3	99	High stack emissions.	2023/01/12 21:11:00	2023/01/13 00:30:00
3	115	High stack emissions.	2023/01/13 11:28:00	2023/01/13 13:32:00
3	216	EF: High stack emissions	2023/01/13 13:32:00	2023/01/13 16:16:00
3	40	High stack emissions.	2023/01/13 22:23:00	2023/01/14 00:15:00
3	218	High stack emissions	2023/01/14 10:29:00	2023/01/14 17:40:00
3	89	High stack emissions.	2023/01/14 20:08:00	2023/01/14 20:32:00
3	142	High stack emissions.	2023/01/14 20:32:00	2023/01/14 22:06:00
3	92	High stack emissions.	2023/01/14 22:06:00	2023/01/15 00:30:00
3	150	EF: High stack emissions	2023/01/15 10:31:00	2023/01/15 14:37:00
3	200	EF: High stack emissions	2023/01/15 14:37:00	2023/01/15 17:35:00

UNIT	MWLOSS	REASON	ACTUALSTARTDATE	ACTUALENDDATE
3	90	High stack emissions.	2023/01/15 20:07:00	2023/01/16 01:59:00
3	91	High stack emissions	2023/01/16 09:13:00	2023/01/16 13:10:00
3	210	High stack emissions	2023/01/16 13:10:00	2023/01/16 16:15:00
3	192	High stack emissions.	2023/01/16 19:38:00	2023/01/17 03:08:00
3	190	Manual rapping	2023/01/17 21:15:00	2023/01/18 04:24:00
3	97	AM: High stack emissions.	2023/01/19 10:35:00	2023/01/19 13:28:00
3	148	EF: High stack emissions	2023/01/19 13:28:00	2023/01/19 16:55:00
3	100	EF: High stack emissions	2023/01/19 16:55:00	2023/01/19 19:11:00
3	98	LHI Precip Casing repairs.	2023/01/20 00:29:00	2023/01/21 00:00:00
3	50	AM: High stack emissions.	2023/01/20 20:15:00	2023/01/21 00:00:00
3	148	Clean rapping-high stack emissions	2023/01/21 00:00:00	2023/01/21 02:52:00
3	99	EF: High stack emissions	2023/01/29 20:11:00	2023/01/30 02:24:00
3	98	High stack emissions.	2023/01/30 18:34:00	2023/01/31 02:59:00
3	196	for manual rapping.	2023/01/31 20:26:00	2023/01/31 23:44:00
3	119	High stack emissions.	2023/01/31 23:44:00	2023/01/31 23:59:59
4	593	Unit shut down due to IR.	2023/01/01 00:00:00	2023/01/31 23:59:59
5	200	EF: High stack emissions	2023/01/02 09:25:00	2023/01/02 16:37:00
5	100	High stack emissions	2023/01/02 16:37:00	2023/01/02 16:51:00
5	198	EF: High stack emissions	2023/01/02 16:51:00	2023/01/03 14:21:00
5	150	High stack emissions	2023/01/03 14:21:00	2023/01/03 15:20:00
5	109	High stack emissions	2023/01/03 15:20:00	2023/01/03 16:31:00
5	50	EF: High stack emissions	2023/01/09 09:39:00	2023/01/09 11:39:00
5	90	EF: High stack emissions	2023/01/09 11:39:00	2023/01/09 16:20:00
5	86	AM: Manual rapping	2023/01/09 20:59:00	2023/01/09 23:54:00
5	186	Manual rapping.	2023/01/11 00:28:00	2023/01/11 04:54:00
5	187	High stack emissions.	2023/01/11 20:15:00	2023/01/11 21:52:00
5	213	High stack emissions.	2023/01/11 21:52:00	2023/01/12 00:14:00
5	49	High stack emissions.	2023/01/12 11:20:00	2023/01/12 15:37:00
5	90	RHO precip casing repairs.	2023/01/15 00:11:00	2023/01/15 23:12:00
5	86	Clean rapping	2023/01/16 00:25:00	2023/01/16 01:59:00
5	87	EF: High stack emissions	2023/01/20 12:51:00	2023/01/20 16:36:00
5	87	AM: High stack emissions.	2023/01/20 19:59:00	2023/01/21 02:12:00
5	46	high stack emissions.	2023/01/23 22:29:00	2023/01/24 00:02:00
5	186	Clean rapping.	2023/01/24 00:02:00	2023/01/24 02:41:00
5	49	High stack emissions.	2023/01/24 13:47:00	2023/01/24 16:51:00
5	188	Clean rapping.	2023/01/25 01:04:00	2023/01/25 02:47:00
5	186	Clean rapping.	2023/01/25 23:58:00	2023/01/26 02:33:00
5	187	Clean rapping	2023/01/26 23:52:00	2023/01/27 02:41:00
5	88	EF: High stack emissions	2023/01/27 20:14:00	2023/01/28 04:26:00
5	96	High stack emissions	2023/01/28 11:14:00	2023/01/28 14:57:00
5	187	EF: High stack emissions	2023/01/28 14:57:00	2023/01/28 17:08:00
5	593	AM: Boiler tube leak.	2023/01/28 23:39:00	2023/01/31 23:59:59
6	118	High stack emissions	2023/01/07 19:33:00	2023/01/07 23:57:00
6	118	Manual rapping	2023/01/08 21:26:00	2023/01/09 00:26:00
6	69	High stack emissions.	2023/01/13 22:24:00	2023/01/14 00:17:00
6	118	EF: High stack emissions	2023/01/28 20:26:00	2023/01/28 21:48:00
6	168	EF: High stack emissions	2023/01/28 21:48:00	2023/01/28 22:14:00
6	217	EF: High stack emissions	2023/01/28 22:14:00	2023/01/29 00:27:00
6	118	EF: High stack emissions	2023/01/29 00:27:00	2023/01/29 02:46:00
6	118	EF: High stack emissions	2023/01/29 13:31:00	2023/01/29 16:32:00
6	118	EF: High stack emissions	2023/01/29 19:42:00	2023/01/30 02:09:00
6	118	High stack emissions	2023/01/30 22:16:00	2023/01/31 03:16:00

PM Exceedances		
U1.	Unit Light Up	01-Jan
U1.	ESP Poor Performance	28-Jan
U1.	ESP Poor Performance	29-Jan
U1.	ESP Poor Performance and high hopper levels	31-Jan
U2.	ESP Poor Performance and High Hopper Levels	09-Jan
U2.	ESP Poor Performance and Manual Rapping	11-Jan
U2.	RHI Casing Outage High hopper levels	13-Jan
U2.	The SO3 plant tripped on Saturday due to the air blower faulty, and was off for the day	14-Jan
U2.	ESP Poor performance and manual rapping	20-Jan
U2.	ESP poor Performance	21-Jan
U2.	Manual Rapping and poor ESP performance SO3 plant tripped, and reset	22-Jan
U2.	Unit Shut Down for Boiler Tube Leak Repairs	24-Jan
U2.	Unit synchronised on 2023/01/28 @ 02:01, emissions to be below the limit by 2023/01/31 @ 02:01 and remain below the limit until 2023/02/01 @ 23:59	28-Jan
U2.	Unit synchronised on 2023/01/28 @ 02:01, emissions to be below the limit by 2023/01/31 @ 02:01 and remain below the limit until 2023/02/01 @ 23:59	29-Jan
U2.	Unit synchronised on 2023/01/28 @ 02:01, emissions to be below the limit by 2023/01/31 @ 02:01 and remain below the limit until 2023/02/01 @ 23:59	30-Jan
U3.	LHO Casing hoppers cleaned, casing out of service	01-Jan
U3.	RHO Casing Repairs	07-Jan
U3.	RHI Casing Repairs	08-Jan
U3.	ESP Poor Performance	11-Jan
U3.	ESP Poor Performance & Manual Rapping	17-Jan
U3.	LHI Casing outage High hopper levels	20-Jan
U3.	ESP Poor Performance	28-Jan
U3.	ESP Poor performance	29-Jan
U3.	ESP Poor Performance Manual rapping High Hopper levels	31-Jan
U5.	Unit Light Up SO3 Plant offline for repairs Still under Section 30	01-Jan
U5.	Unit Light Up SO3 Plant offline for repairs Still under Section 30	02-Jan