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25 May 2023

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LRP02PLA000 _0359/20230508

Dear Mr. Sibaya


LETHABO POWER STATION EMISSION MONTHLY REPORT FOR APRIL 2023

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

Also attached are the Ambient Air Quality Monitoring Report, Complaints Register and the Fugitive Dust Fallout Monitoring Report for April 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 name: **Lethabo Power Station
April 2023
Emission Report**

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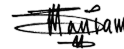
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LETHABO POWER STATION MONTHLY EMISSIONS REPORT

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 Apr-2023
	Coal	Tons	2 000 000	986 271
	Fuel Oil	Tons	1 700	810.29
Production Rates	Product / By-Product Name	Units	Maximum Production Capacity Permitted	Production Rate Apr-2023
	Energy	GWh	2743.2	1 346.01
	Ash	Tons	770 000	378 037.5
	RE Ash	kg/MWh	Not Specified	280.86

2. ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.656 (Standard)	0.670
Ash Content	%	37.37 (Standard)	38.330

*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/Nm³)

Associated Unit/Stack	PM	SO ₂	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 Apr-2023	Technology Type	SO ₃ Utilization Apr-2023
Unit 1	<i>Electrostatic Precipitator (ESP)</i>	<i>Unit Off-line</i>	SO ₃	<i>Off-line</i>
Unit 2	<i>Electrostatic Precipitator (ESP)</i>	99.89%	SO ₃	99.7%
Unit 3	<i>Electrostatic Precipitator (ESP)</i>	99.73%	SO ₃	100.0%
Unit 4	<i>Electrostatic Precipitator (ESP)</i>	99.85%	SO ₃	98.9%
Unit 5	<i>Electrostatic Precipitator (ESP)</i>	99.65%	SO ₃	94.6%
Unit 6	<i>Electrostatic Precipitator (ESP)</i>	<i>Unit Off-line</i>	SO ₃	<i>Off-line</i>

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

5. MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO ₂	NO
Unit 1	OFF	OFF	OFF
Unit 2	99.4	100.0	100.0
Unit 3	98.6	99.9	99.9
Unit 4	99.6	99.9	99.9
Unit 5	94.3	100.0	100.0
Unit 6	OFF	OFF	OFF

Note: NOx emissions is measured as NO in PPM. Final NOx value is expressed as total NO₂

6. EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of April 2023 Before

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO _x (tons)
Unit 1	0.0	0	0
Unit 2	80.8	2 706	1 176
Unit 3	246.8	3 816	1 746
Unit 4	113.3	3 009	1 476
Unit 5	338.8	4840	1513
Unit 6	0.0	0	0
SUM	779.8	14 371	5 912

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

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance	Average PM (mg/Nm ³)
Unit 1	0	0	0	0	0	
Unit 2	20	2	0	0	2	62.6
Unit 3	18	12	0	0	12	123.7
Unit 4	20	4	0	0	4	83.5
Unit 5	15	15	0	0	15	143.4
Unit 6	0	0	0	0	0	
SUM	73	33	0	0	33	

Table 6.3: Operating days in compliance to SO₂ AEL Limit - April 2023

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance	Average SO ₂ (mg/Nm ³)
Unit 1	0	0	0	0	0	
Unit 2	24	0	0	0	0	1 901.6
Unit 3	30	0	0	0	0	1 907.3
Unit 4	25	0	0	0	0	1 898.8
Unit 5	30	0	0	0	0	2 050.2
Unit 6	0	0	0	0	0	
SUM	109	0	0	0	0	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance	Average NOx (mg/Nm³)
Unit 1	0	0	0	0	0	
Unit 2	24	0	0	0	0	819.2
Unit 3	30	0	0	0	0	871.4
Unit 4	25	0	0	0	0	915.9
Unit 5	30	0	0	0	0	639.8
Unit 6	0	0	0	0	0	
SUM	109	0	0	0	0	

Note: NOx emissions is measured as NO in PPM. Final NOx value is expressed as total NO₂

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 1: Lethabo Unit 1 PM Emissions - April 2023

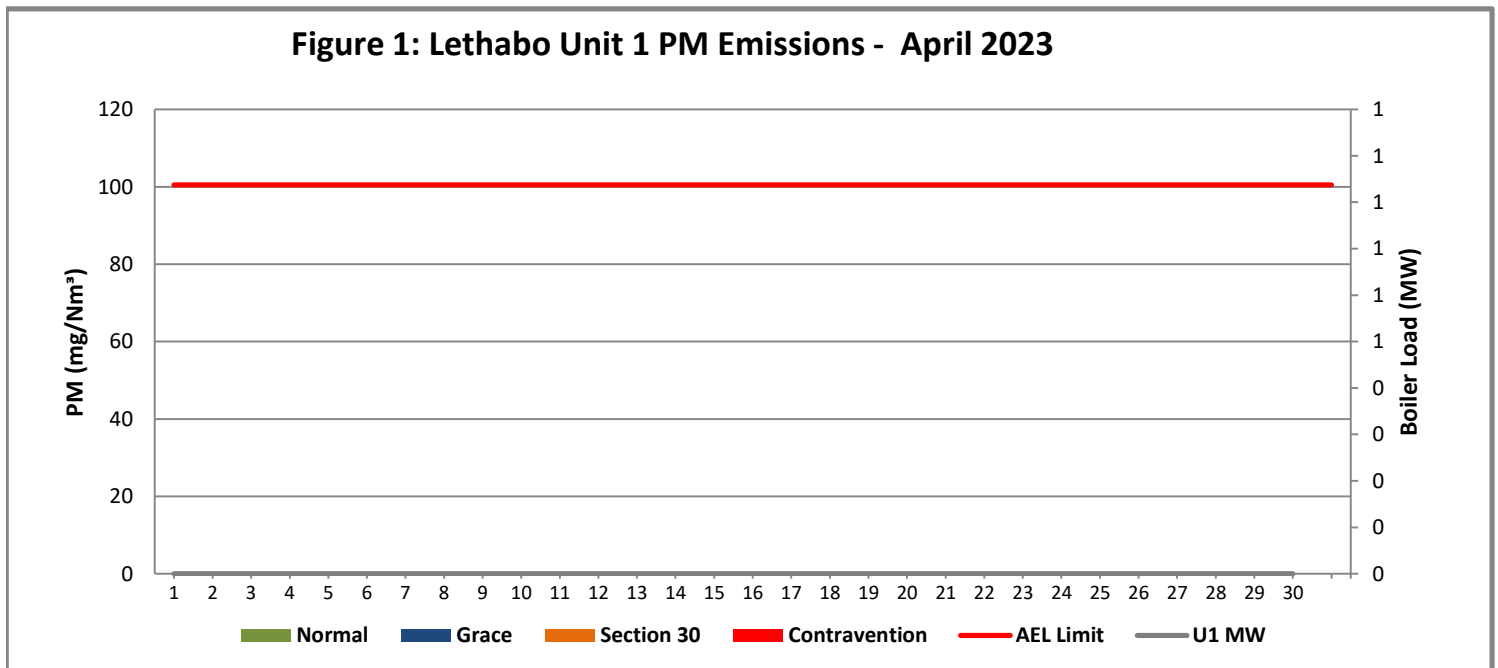


Figure 2: Lethabo Unit 2 PM Emissions - April 2023

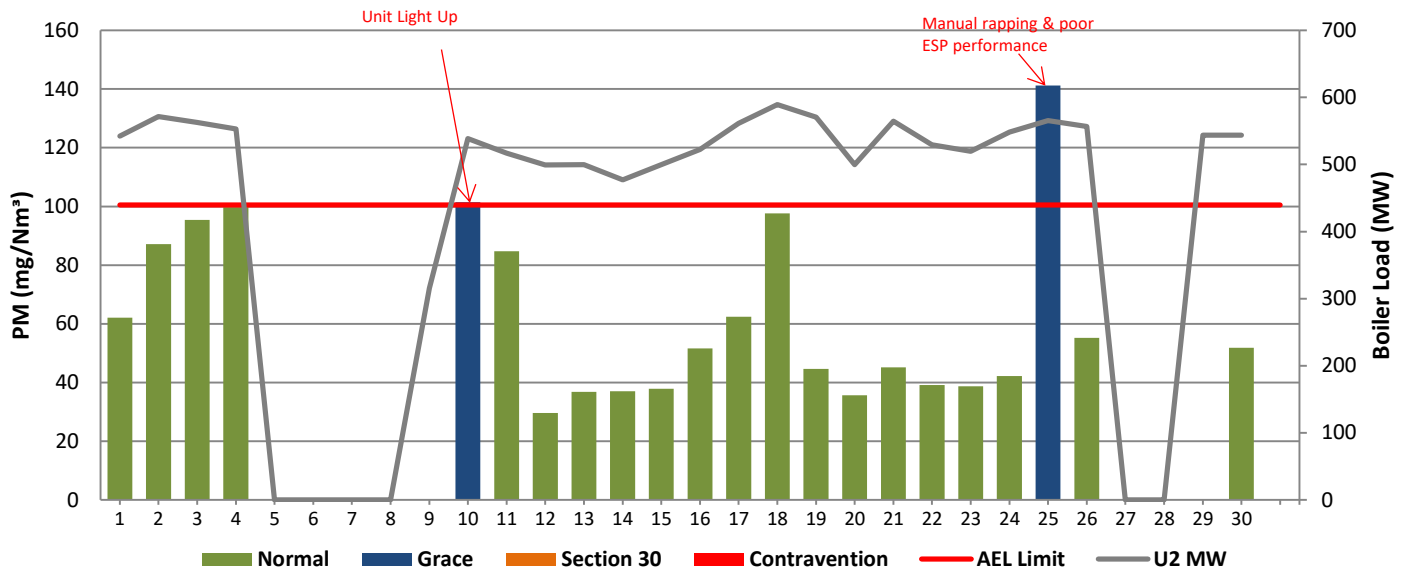


Figure 3: Lethabo Unit 3 PM Emissions - April 2023

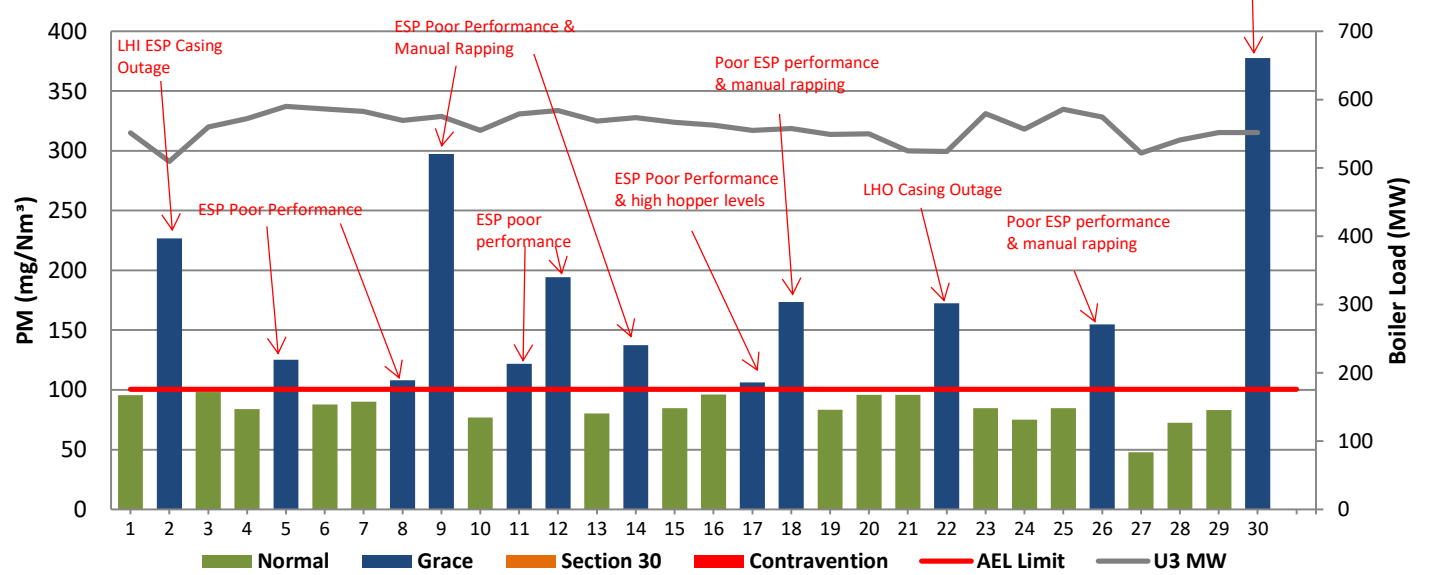


Figure 4: Lethabo Unit 4 PM Emissions - April 2023

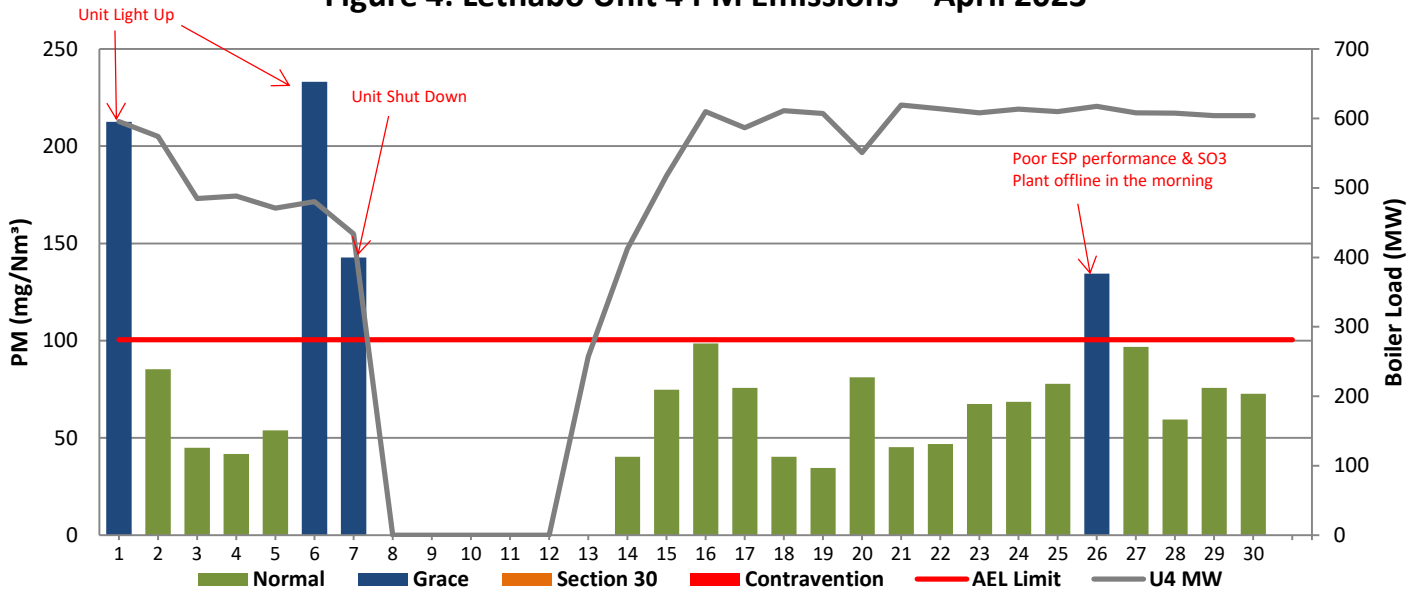


Figure 5: Lethabo Unit 5 PM Emissions - April 2023

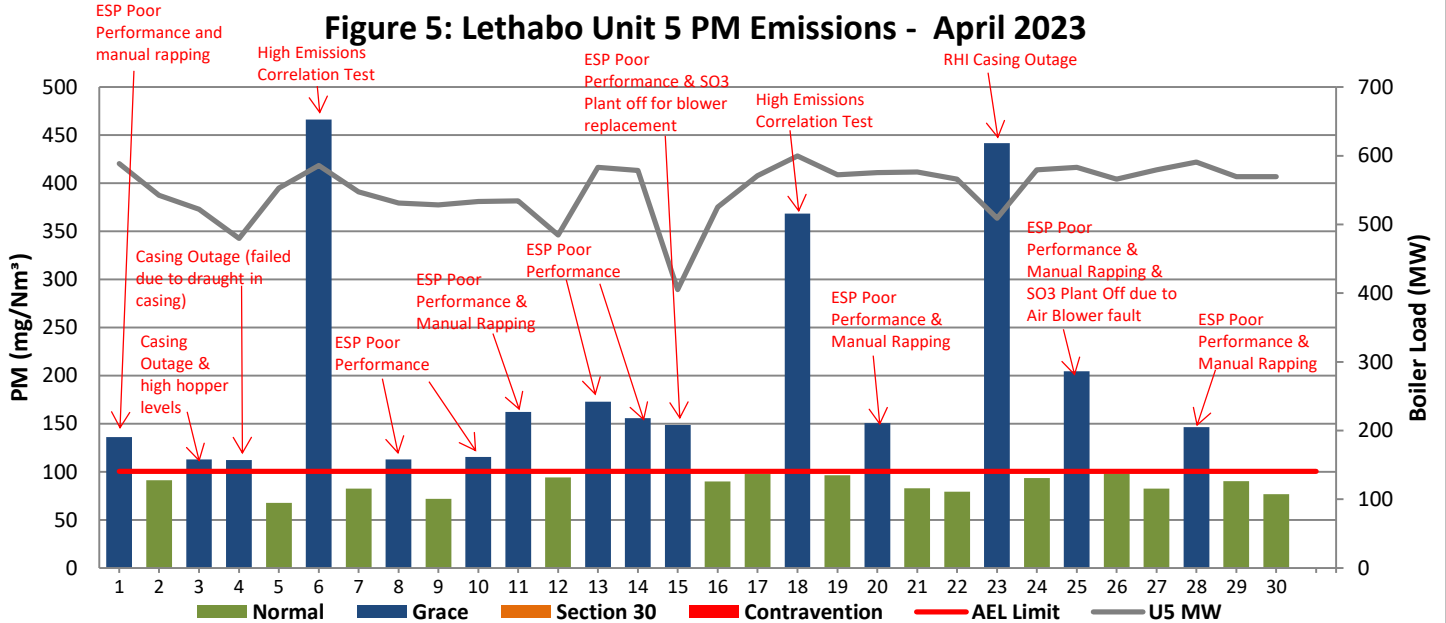


Figure 6: Lethabo Unit 6 PM Emissions - April 2023

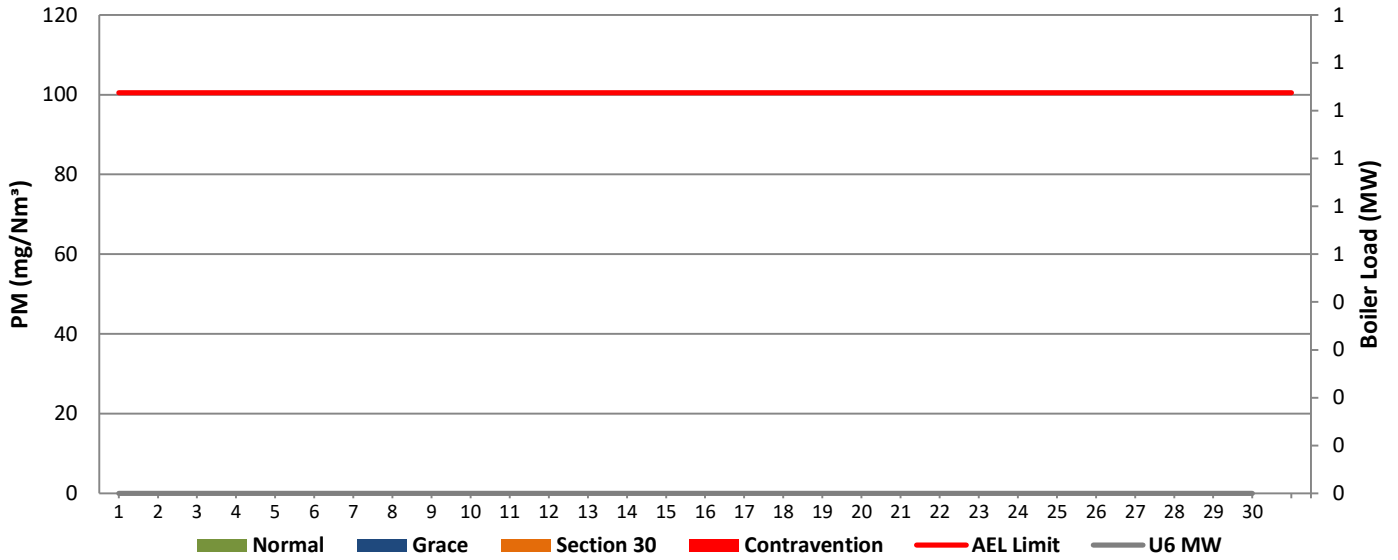


Figure 7: Lethabo Unit 1 SO₂ Emissions - April 2023

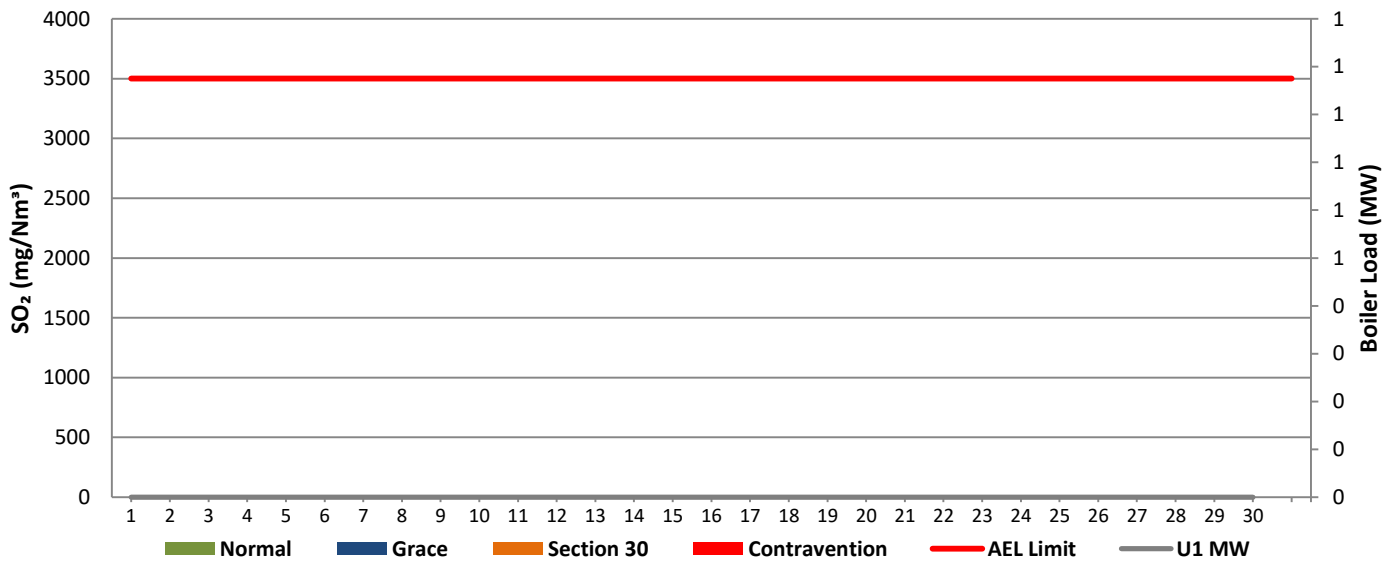


Figure 8: Lethabo Unit 2 SO₂ Emissions - April 2023

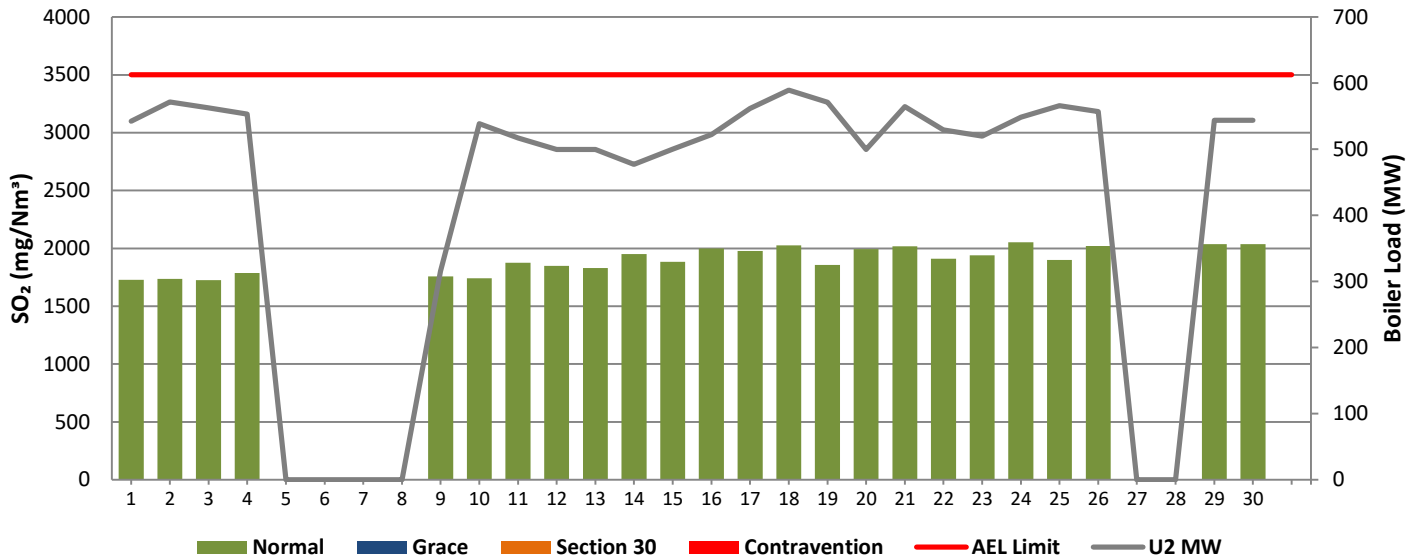


Figure 9: Lethabo Unit 3 SO₂ Emissions - April 2023

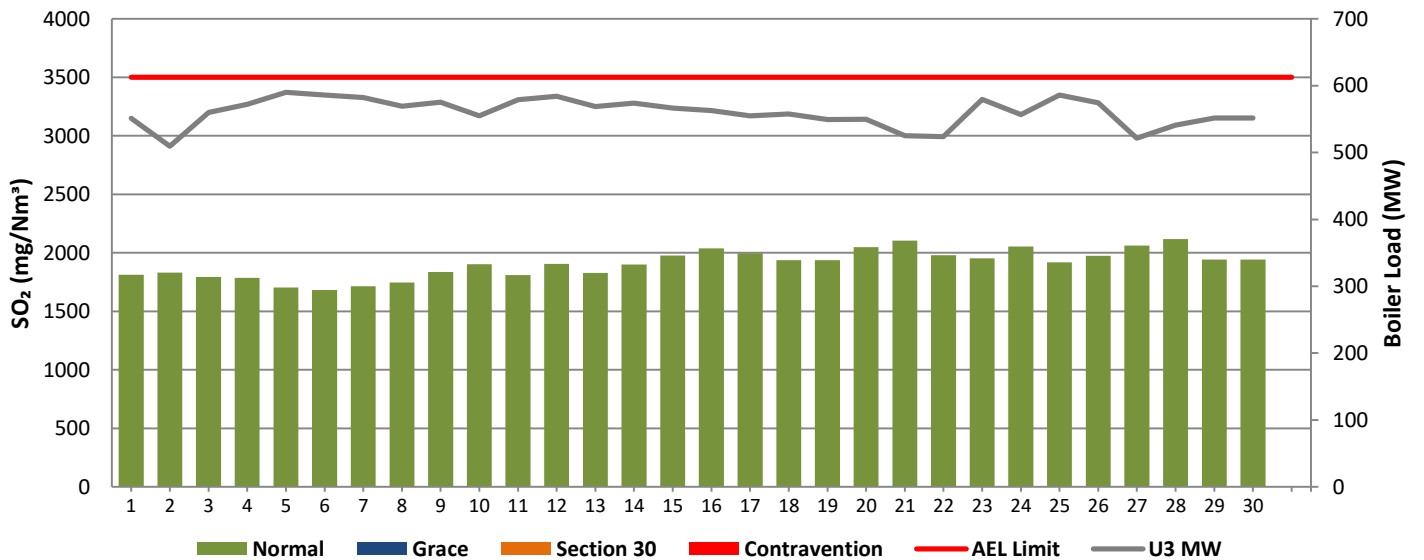


Figure 10: Lethabo Unit 4 SO₂ Emissions - April 2023

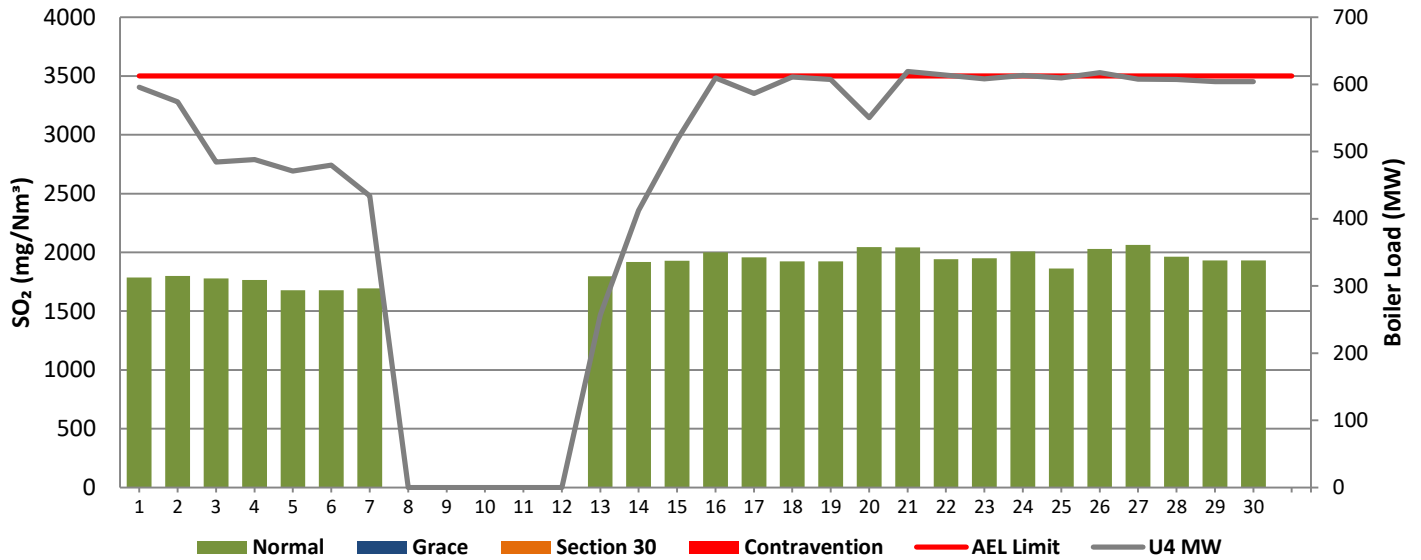


Figure 11: Lethabo Unit 5 SO₂ Emissions - April 2023

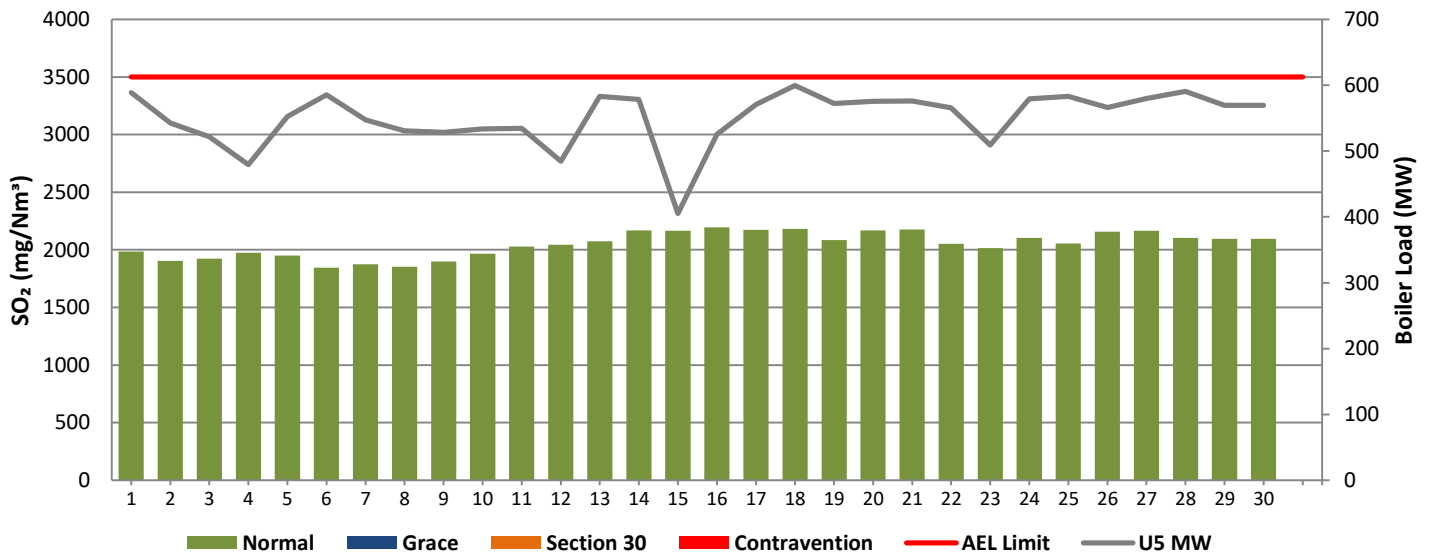


Figure 12: Lethabo Unit 6 SO₂ Emissions - April 2023

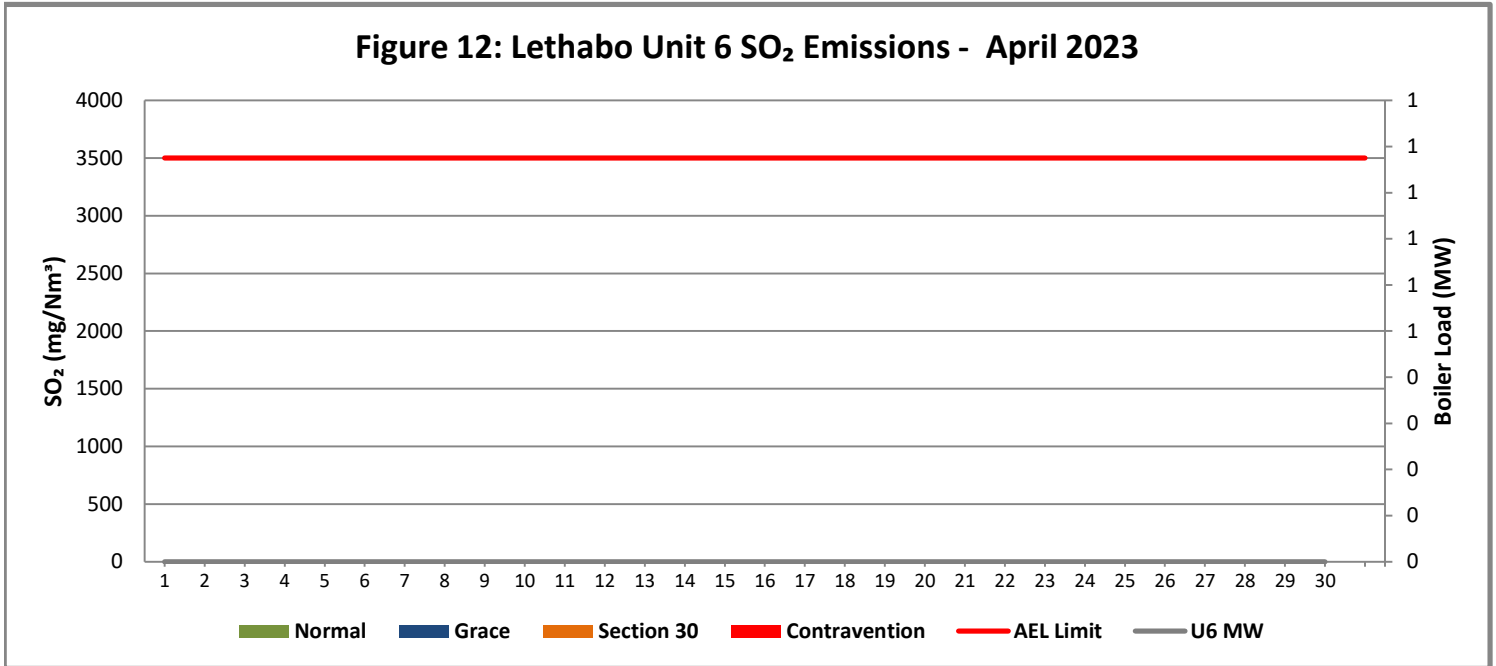


Figure 13: Lethabo Unit 1 NO_x Emissions - April 2023

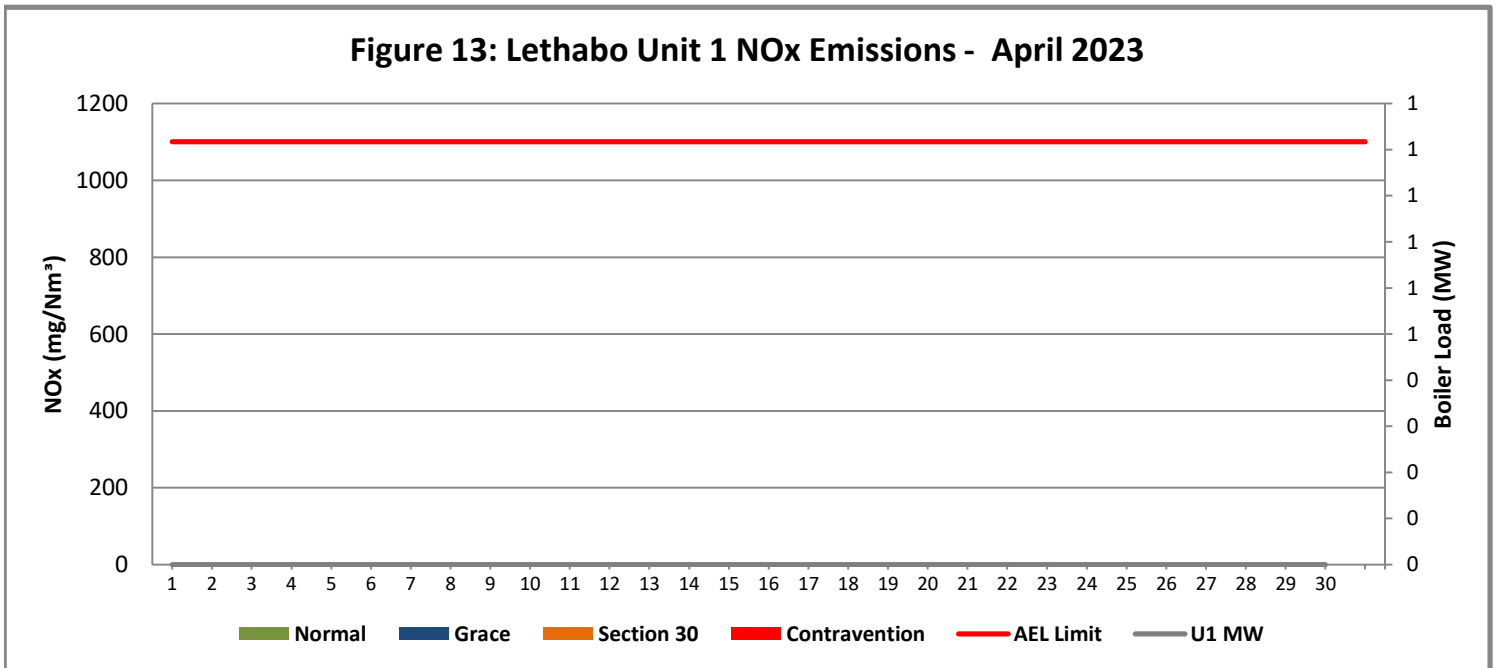


Figure 14: Lethabo Unit 2 NOx Emissions - April 2023

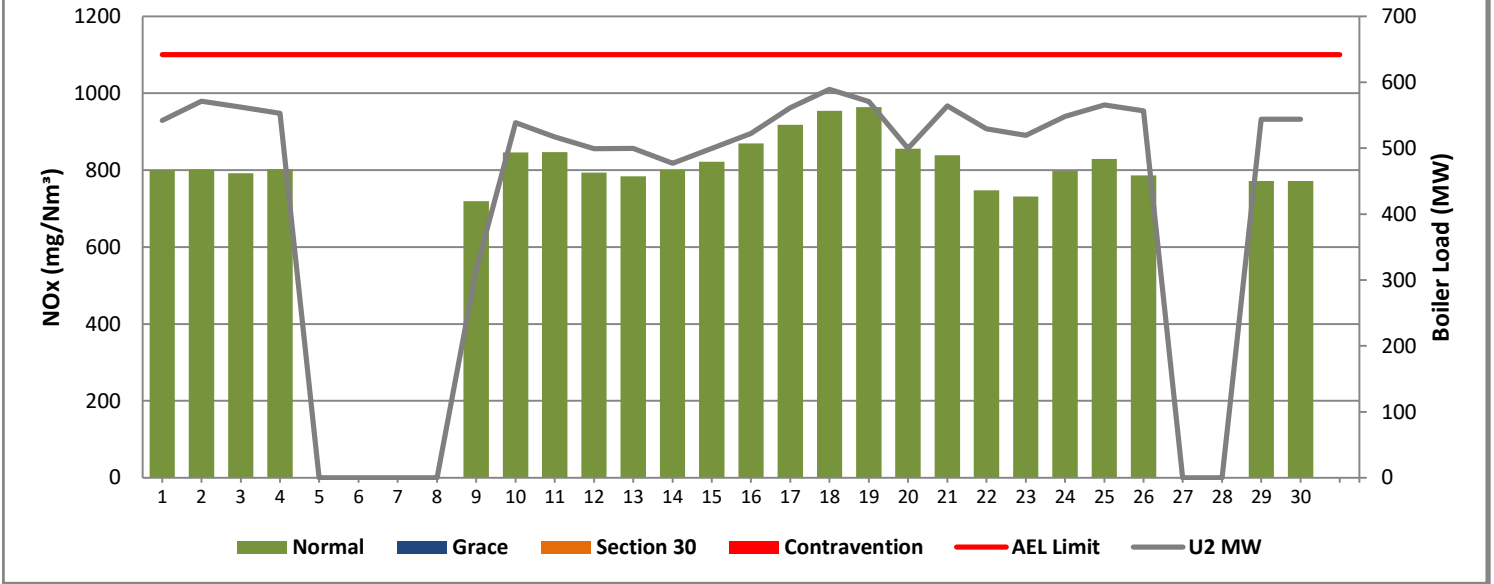


Figure 15: Lethabo Unit 3 NOx Emissions - April 2023

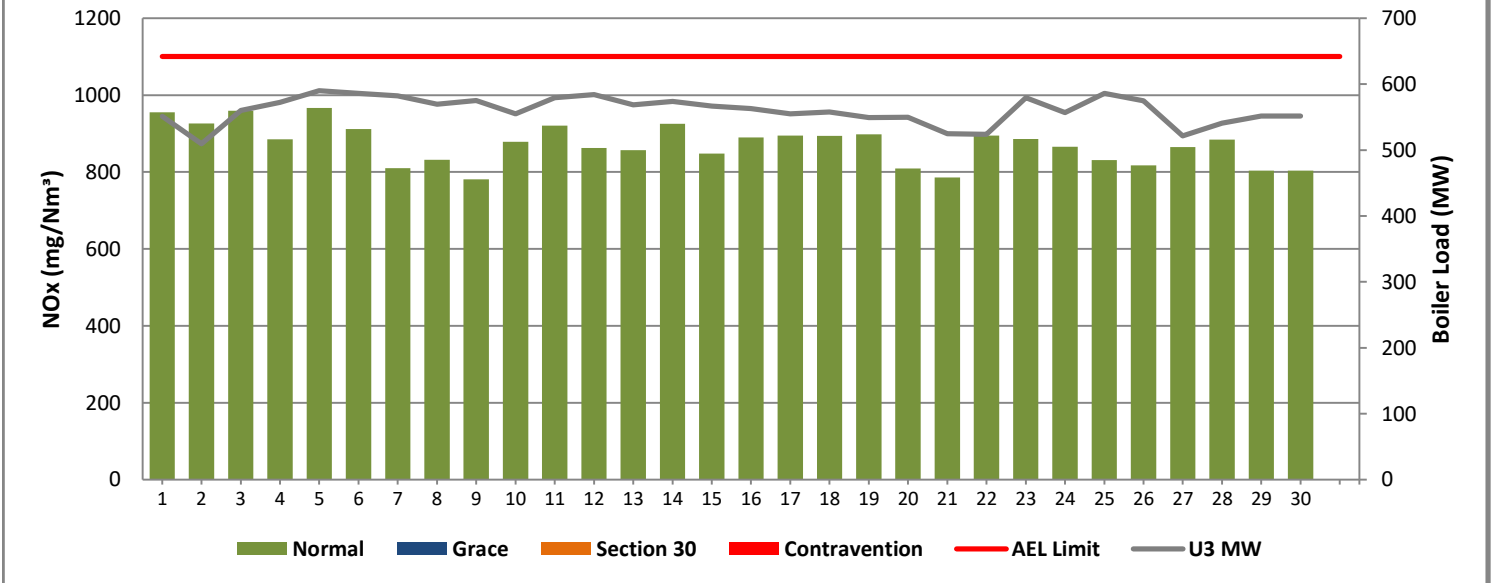


Figure 16: Lethabo Unit 4 NOx Emissions - April 2023

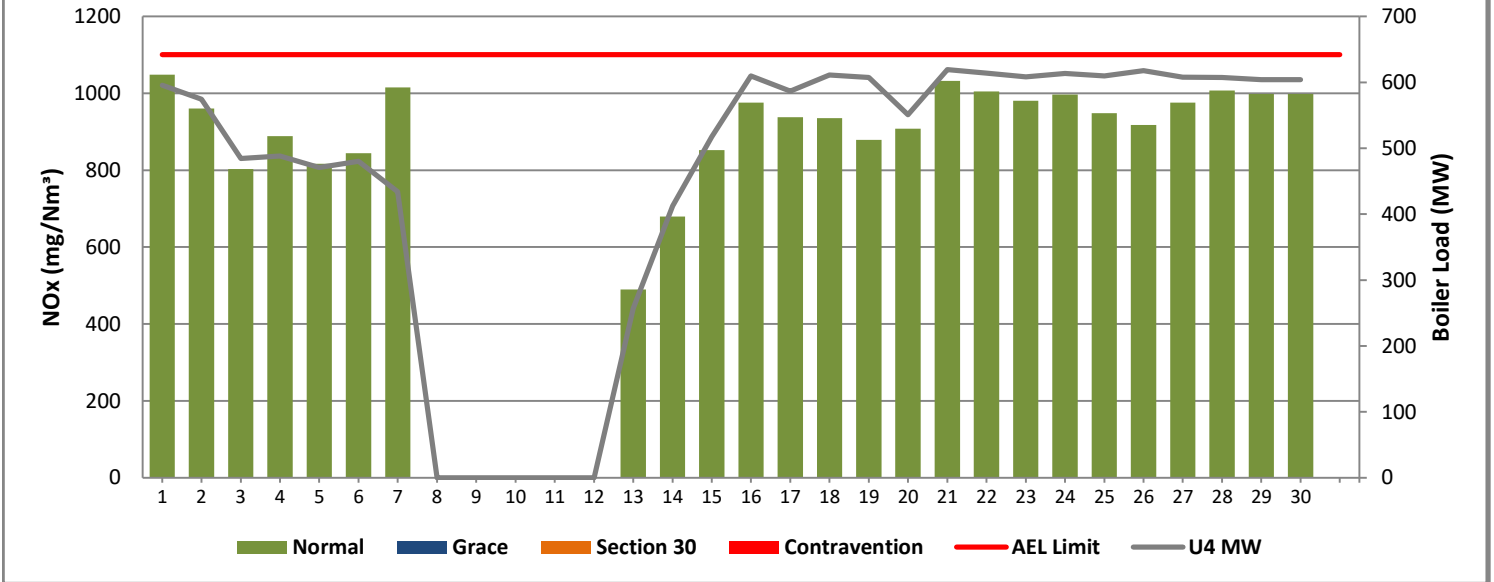


Figure 17: Lethabo Unit 5 NOx Emissions - April 2023

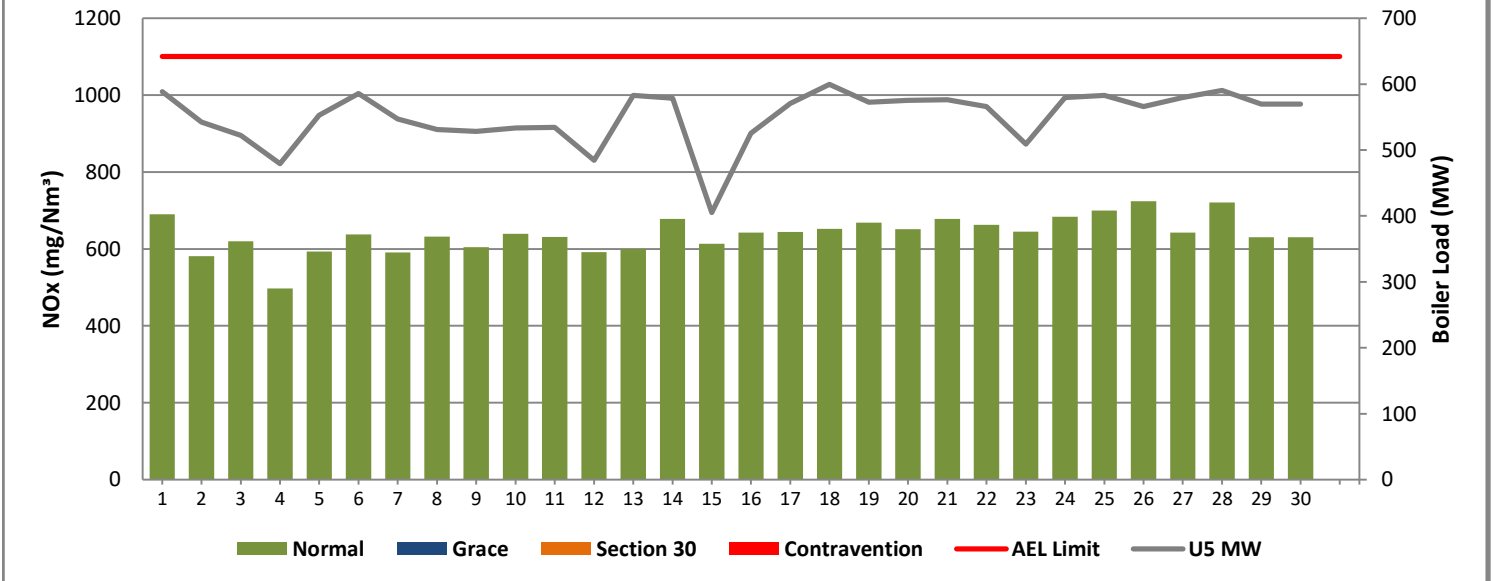
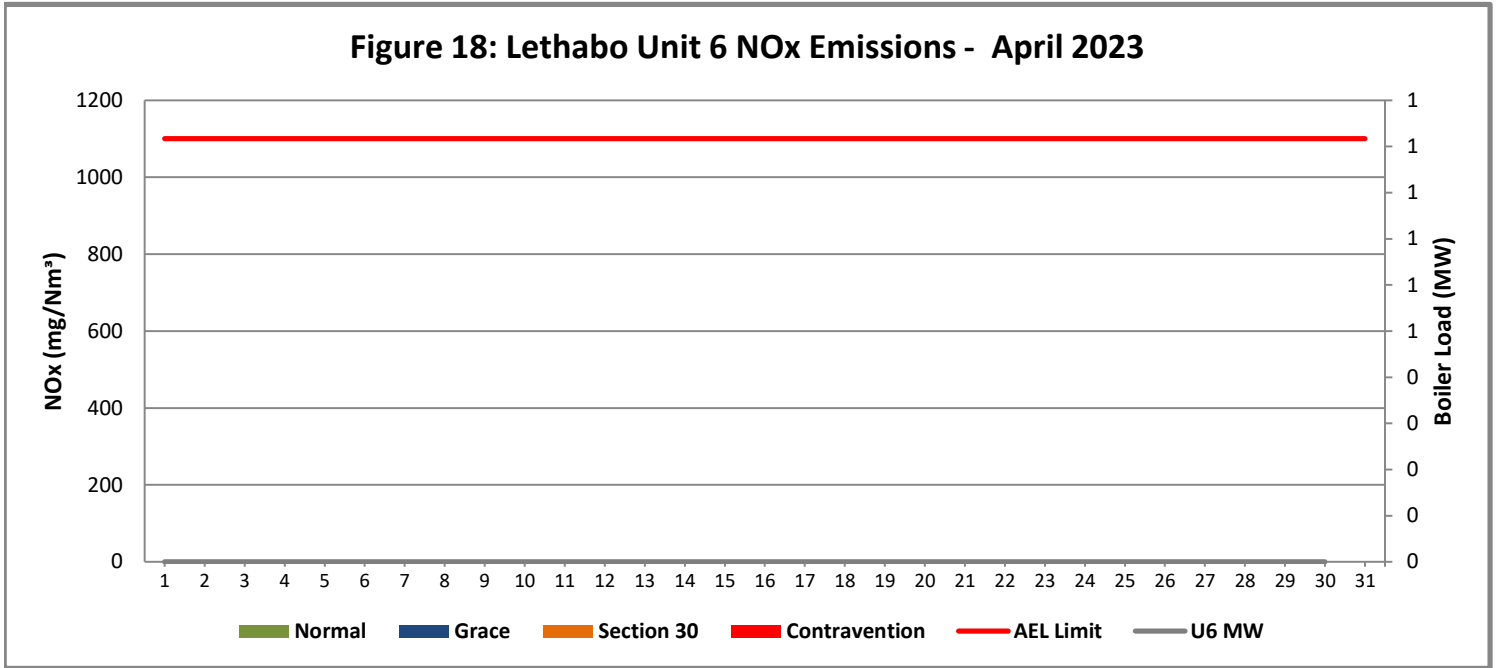


Figure 18: Lethabo Unit 6 NOx Emissions - April 2023



7 SHUT DOWN AND LIGHT UP INFORMATION

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

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

Unit No.2	<i>Boiler tube leak</i>		<i>Demin water contamination & Cold reheat NRV leaking on the flange</i>		<i>Boiler tube leak</i>		
Breaker Open (BO)	4:36 PM	2023/04/04	12:12 PM	2023/04/26	11:45 AM	2023/04/30	
Draught Group (DG) Shut Down (SD)	7:36 AM	2023/04/05	1:07 PM	2023/04/26	12:37 AM	2023/05/01	
BO to DG SD (duration)	00:15:00	DD:HH:MM	00:00:55	DD:HH:MM	00:12:52	DD:HH:MM	DD:HH:MM
Fires in time	3:24 PM	2023/04/09	2:14 AM	2023/04/29			
Synch. to Grid (or BC)	4:07 PM	2023/04/09	3:06 AM	2023/04/29			
Fires in to BC (duration)	00:00:43	DD:HH:MM	00:00:52	DD:HH:MM		DD:HH:MM	DD:HH:MM
Emissions below limit from BC (end date)	3:00 AM	2023/04/11	4:00 PM	2023/05/01			
Emissions below limit from BC (duration)	01:10:53	DD:HH:MM	02:12:54	DD:HH:MM		DD:HH:MM	DD:HH:MM

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

Unit No.4	<i>HP exhaust temps high</i>		<i>Water leak valve repairs.</i>		<i>Turbine tripped on HP delta T's</i>		
Breaker Open (BO)	3:32 PM	2023/04/05	9:04 PM	2023/04/07	9:33 PM	2023/04/14	
Draught Group (DG) Shut Down (SD)	<i>DG did not trip or SD</i>	<i>DG did not trip or SD</i>	1:54 PM	2023/04/08	<i>DG did not trip or SD</i>	<i>DG did not trip or SD</i>	
BO to DG SD (duration)	<i>n/a</i>	DD:HH:MM	00:16:50	DD:HH:MM	<i>n/a</i>	DD:HH:MM	DD:HH:MM
Fires in time	7:39 PM	2023/04/05	12:56 PM	2023/04/13			
Synch. to Grid (or BC)	8:22 PM	2023/04/05	1:12 PM	2023/04/13			
Fires in to BC (duration)	00:00:43	DD:HH:MM	00:00:16	DD:HH:MM		DD:HH:MM	DD:HH:MM
Emissions below limit from BC (end date)	12:00 AM	2023/04/09	5:00 AM	2023/04/14			
Emissions below limit from BC (duration)	03:03:38	DD:HH:MM	00:15:48	DD:HH:MM		DD:HH:MM	DD:HH:MM

Unit No.5							
Breaker Open (BO)							
Draught Group (DG) Shut Down (SD)							
BO to DG SD (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM	DD:HH:MM
Fires in time							
Synch. to Grid (or BC)							
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM	DD:HH:MM
Emissions below limit from BC (end date)							
Emissions below limit from BC (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM	DD:HH:MM

Unit No.6	<i>Off load due to fire on R/H side ducting</i>					
Breaker Open (BO)						
Draught Group (DG) Shut Down (SD)						
BO to DG SD (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time						
Synch. to Grid (or BC)						
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)						
Emissions below limit from BC (duration)		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 April 2023 in mg/Nm³

8. MAINTENANCE

Unit 1				
Beginning of				
Reason for Maintenance				
End (Time):				
Duration				

Unit 2				
Beginning of				
Reason for Maintenance				
End (Time):				
Duration				

Unit 3				
Beginning of	2023/04/01 18:12:00	2023/04/01 19:59	2023/04/22 00:00	2023/04/30 00:01
Reason for Maintenance	LHI Casing Outage	LHI Casing Outage	LHO Casing Outage	RHI Casing Outage
End (Time):	2023/04/01 19:59:00	2023/04/02 21:01	2023/04/22 17:15	2023/04/30 16:00
Duration	1:47:00	25:02:00	17:15:00	15:59:00

Unit 4				
Beginning of				
Reason for Maintenance				
End (Time):				
Duration				

Unit 5				
Beginning of	2023/04/23 00:00:00			
Reason for Maintenance	RHI precip casing repairs.			
End (Time):	2023/04/23 21:58:00			
Duration	21:58:00			

Unit 6				
Beginning of				
Reason for Maintenance				
End (Time):				
Duration				

9. GENERAL

Unit 5 Monitor Reliability

06/04/2023: PM Monitor Reliability low (70.8%) due to monitors reading maximum

28/04/2023: PM Monitor Reliability Low (79.2%) due to monitors reading maximum

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.

Unit 1:

Unit 1 is offload for Interim Repairs (IR) outage from 2023/03/13.

Unit 6:

Unit 6 was shut down on 2023/03/28 for repairs after a plant fire that had occurred.

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.

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
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
Feb-23	0.51	0.48	0.53	OFF	0.83	0.63	0.59
Mar-23	0.51	0.37	0.52	0.54	0.63	0.39	0.50
Apr-23	OFF	0.29	0.61	0.35	0.86	OFF	0.56

ADDENDUM TO MONTHLY EMISSIONS REPORT

12. DAILY EMISSIONS FIGURES

Final Dust Concentration (mg/Nm³)

Date	U1	U2	U3	U4	U5	U6	Limit
31-Mar	OFF	41	96	OFF	80	OFF	100
01-Apr	OFF	62	96	212	136	OFF	100
02-Apr	OFF	87	227	85	91	OFF	100
03-Apr	OFF	95	98	45	113	OFF	100
04-Apr	OFF	100	84	42	112	OFF	100
05-Apr	OFF	OFF	125	54	68	OFF	100
06-Apr	OFF	OFF	88	233	466	OFF	100
07-Apr	OFF	OFF	90	143	83	OFF	100
08-Apr	OFF	OFF	108	OFF	113	OFF	100
09-Apr	OFF	OFF	297	OFF	72	OFF	100
10-Apr	OFF	101	77	OFF	115	OFF	100
11-Apr	OFF	85	122	OFF	162	OFF	100
12-Apr	OFF	30	194	OFF	94	OFF	100
13-Apr	OFF	37	80	OFF	173	OFF	100
14-Apr	OFF	37	137	40	156	OFF	100
15-Apr	OFF	38	85	75	149	OFF	100
16-Apr	OFF	52	96	99	90	OFF	100
17-Apr	OFF	62	106	76	98	OFF	100
18-Apr	OFF	98	173	40	368	OFF	100
19-Apr	OFF	45	83	34	97	OFF	100
20-Apr	OFF	36	96	81	151	OFF	100
21-Apr	OFF	45	96	45	83	OFF	100
22-Apr	OFF	39	172	47	79	OFF	100
23-Apr	OFF	39	85	67	442	OFF	100
24-Apr	OFF	42	75	69	93	OFF	100
25-Apr	OFF	141	85	78	204	OFF	100
26-Apr	OFF	55	155	134	98	OFF	100
27-Apr	OFF	OFF	48	97	82	OFF	100
28-Apr	OFF	OFF	73	60	147	OFF	100
29-Apr	OFF	OFF	83	76	90	OFF	100
30-Apr	OFF	52	378	73	77	OFF	100

ADDENDUM TO MONTHLY EMISSIONS REPORT

Final SOx Concentration (mg/Nm³)

Date	U1	U2	U3	U4	U5	U6	Limit
31-Mar	OFF	1725	1756	1751	1933	OFF	3500
01-Apr	OFF	1729	1813	1788	1986	OFF	3500
02-Apr	OFF	1737	1830	1800	1904	OFF	3500
03-Apr	OFF	1724	1793	1780	1923	OFF	3500
04-Apr	OFF	1787	1786	1764	1975	OFF	3500
05-Apr	OFF	OFF	1705	1678	1949	OFF	3500
06-Apr	OFF	OFF	1682	1679	1845	OFF	3500
07-Apr	OFF	OFF	1714	1693	1876	OFF	3500
08-Apr	OFF	OFF	1745	OFF	1854	OFF	3500
09-Apr	OFF	1759	1836	OFF	1899	OFF	3500
10-Apr	OFF	1740	1903	OFF	1965	OFF	3500
11-Apr	OFF	1876	1810	OFF	2028	OFF	3500
12-Apr	OFF	1847	1906	OFF	2045	OFF	3500
13-Apr	OFF	1831	1828	1796	2074	OFF	3500
14-Apr	OFF	1950	1900	1918	2168	OFF	3500
15-Apr	OFF	1883	1977	1930	2166	OFF	3500
16-Apr	OFF	2000	2038	1999	2195	OFF	3500
17-Apr	OFF	1978	1996	1959	2175	OFF	3500
18-Apr	OFF	2025	1936	1925	2181	OFF	3500
19-Apr	OFF	1858	1937	1923	2086	OFF	3500
20-Apr	OFF	1995	2049	2045	2169	OFF	3500
21-Apr	OFF	2019	2104	2042	2177	OFF	3500
22-Apr	OFF	1911	1979	1941	2052	OFF	3500
23-Apr	OFF	1941	1953	1949	2015	OFF	3500
24-Apr	OFF	2053	2053	2007	2102	OFF	3500
25-Apr	OFF	1899	1918	1863	2056	OFF	3500
26-Apr	OFF	2019	1973	2030	2158	OFF	3500
27-Apr	OFF	OFF	2060	2063	2166	OFF	3500
28-Apr	OFF	OFF	2116	1964	2104	OFF	3500
29-Apr	OFF	2036	1941	1931	2095	OFF	3500
30-Apr	OFF	2043	1938	2000	2120	OFF	3500

ADDENDUM TO MONTHLY EMISSIONS REPORT

Final NOx Concentration (mg/Nm³)

Date	U1	U2	U3	U4	U5	U6	Limit
31-Mar	OFF	823	990	731	694	OFF	1100
01-Apr	OFF	800	956	1048	690	OFF	1100
02-Apr	OFF	802	926	960	581	OFF	1100
03-Apr	OFF	792	959	803	620	OFF	1100
04-Apr	OFF	803	885	888	497	OFF	1100
05-Apr	OFF	OFF	966	817	593	OFF	1100
06-Apr	OFF	OFF	911	844	638	OFF	1100
07-Apr	OFF	OFF	810	1015	591	OFF	1100
08-Apr	OFF	OFF	832	OFF	632	OFF	1100
09-Apr	OFF	719	781	OFF	604	OFF	1100
10-Apr	OFF	847	879	OFF	639	OFF	1100
11-Apr	OFF	847	921	OFF	631	OFF	1100
12-Apr	OFF	793	863	OFF	592	OFF	1100
13-Apr	OFF	784	856	490	600	OFF	1100
14-Apr	OFF	801	926	680	678	OFF	1100
15-Apr	OFF	822	848	852	614	OFF	1100
16-Apr	OFF	870	890	975	642	OFF	1100
17-Apr	OFF	918	895	938	644	OFF	1100
18-Apr	OFF	955	894	935	652	OFF	1100
19-Apr	OFF	964	898	879	669	OFF	1100
20-Apr	OFF	856	809	908	651	OFF	1100
21-Apr	OFF	839	786	1032	678	OFF	1100
22-Apr	OFF	748	895	1005	663	OFF	1100
23-Apr	OFF	731	886	981	645	OFF	1100
24-Apr	OFF	798	865	997	684	OFF	1100
25-Apr	OFF	829	831	948	699	OFF	1100
26-Apr	OFF	787	817	917	724	OFF	1100
27-Apr	OFF	OFF	865	976	643	OFF	1100
28-Apr	OFF	OFF	885	1007	721	OFF	1100
29-Apr	OFF	772	804	998	630	OFF	1100
30-Apr	OFF	784	804	1005	648	OFF	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
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
Feb-23	99.19%	0.9	100.00%	0.0	96.88%	3.5	OFF	OFF	100.00%	0.0	99.16%	0.9
Mar-23	99.30%	0.9	99.19%	1.0	99.22%	1.0	100.00%	0.0	98.57%	1.8	99.19%	1.0
Apr-23	OFF	OFF	100.00%	0.0	97.91%	2.5	100.00%	0.0	99.24%	0.9	OFF	OFF

SO₃ 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
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
Feb-23	89.39%	3.0	100.00%	0.0	82.41%	4.9	OFF	OFF	79.69%	5.7	100.00%	0.0
Mar-23	100.00%	0.0	98.89%	0.3	95.16%	1.5	95.50%	1.4	99.33%	0.2	95.00%	1.6
Apr-23	OFF	OFF	99.66%	0.1	100.00%	0.0	98.93%	0.3	94.58%	1.6	OFF	OFF

ADDENDUM TO MONTHLY EMISSIONS REPORT

Particulate Emission Monitors

Availability						
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
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%
Feb-23	99.11%	96.87%	98.72%	OFF	93.83%	96.29%
Mar-23	99.68%	98.75%	99.06%	97.17%	97.33%	99.12%
Apr-23	OFF	99.43%	98.61%	99.57%	94.31%	OFF

Gaseous Emission Monitors

Month	Availability											
	Unit 1		Unit 2		Unit 3		Unit 4		Unit 5		Unit 6	
	SO _x	NO _x	SO _x	NO _x	SO _x	NO _x	SO _x	NO _x	SO _x	NO _x	SO _x	NO _x
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%
Feb-23	99.85%	99.85%	100.00%	100.00%	100.00%	100.00%	OFF	OFF	100.00%	99.28%	100.00%	100.00%
Mar-23	100.00%	100.00%	100.00%	100.00%	99.87%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Apr-23	OFF	OFF	100.00%	100.00%	99.86%	99.86%	99.95%	99.95%	100.00%	100.00%	OFF	OFF

Oxygen Monitor Availability						
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
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%	OFF	99.87%	99.87%
Jan-23	97.45%	99.04%	99.87%	OFF	99.70%	99.73%
Feb-23	100.00%	100.00%	100.00%	OFF	99.51%	100.00%
Mar-23	100.00%	100.00%	100.00%	86.16%	99.87%	99.81%
Apr-23	OFF	99.83%	99.86%	99.83%	99.86%	OFF

ADDENDUM TO MONTHLY EMISSIONS REPORT

14. EFFICIENCY

ESP Efficiency (%)						
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
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%	OFF	99.637%	99.799%
Jan-23	99.848%	99.709%	99.766%	OFF	99.702%	99.813%
Feb-23	99.808%	99.800%	99.785%	OFF	99.669%	99.733%
Mar-23	99.797%	99.858%	99.780%	99.780%	99.745%	99.831%
Apr-23	OFF	99.893%	99.731%	99.854%	99.646%	OFF

15. REMARKS

UNIT	MWLOSS	REASON	ACTUALSTARTDATE	ACTUALENDDATE
1	593	Interim repairs	2023/04/01 00:00:00	2023/04/30 23:59:59
2	593	Boiler tube leak	2023/04/04 16:36:00	2023/04/09 16:07:00
2	297	System Generated Ramp Event for Event id : 1802997	2023/04/09 16:07:00	2023/04/09 19:07:00
2	147	Manual rapping	2023/04/25 22:05:00	2023/04/26 00:03:00
2	593	Demin water contamination.	2023/04/26 12:12:00	2023/04/27 09:10:00
2	593	Cold reheat NRV leaking on the flange	2023/04/27 09:10:00	2023/04/29 03:06:00
2	296	System Generated Ramp Event for Event id : 1809966 First Outage	2023/04/29 03:06:00	2023/04/29 05:36:00
2	298	System Generated Ramp Event for Event id : 1810293	2023/04/29 05:36:00	2023/04/29 06:06:00
2	593	Boiler tube leak	2023/04/30 11:45:00	2023/04/30 23:59:59
3	45	EF: High stack emissions	2023/04/01 00:00:00	2023/04/01 00:31:00
3	96	High stack emissions	2023/04/01 14:03:00	2023/04/01 18:12:00
3	44	LH inner casing	2023/04/01 18:12:00	2023/04/01 19:59:00
3	100	LH inner casing	2023/04/01 19:59:00	2023/04/02 21:01:00
3	93	High stack emissions.	2023/04/03 20:50:00	2023/04/04 01:02:00
3	98	AM: Man. precip. rapping.	2023/04/09 21:00:00	2023/04/10 05:01:00
3	96	High stack emissions	2023/04/13 00:25:00	2023/04/13 04:18:00
3	98	AM: High stack emissions.	2023/04/18 11:38:00	2023/04/18 16:11:00
3	100	high stack emissions	2023/04/20 19:36:00	2023/04/21 00:01:00
3	97	High stack emissions.	2023/04/21 09:00:00	2023/04/22 00:00:00
3	100	LH Outer precip casing repairs	2023/04/22 00:00:00	2023/04/22 17:15:00
3	100	Manual rapping.	2023/04/26 21:00:00	2023/04/27 00:11:00
3	98	AM: RHI Precip. casing repairs.	2023/04/30 00:01:00	2023/04/30 16:00:00
4	118	Manual rapping	2023/04/01 21:09:00	2023/04/01 23:30:00
4	220	High stack emissions.	2023/04/01 23:30:00	2023/04/02 03:01:00
4	123	High stack emissions.	2023/04/02 03:01:00	2023/04/02 04:23:00
4	593	HP exhaust temps high	2023/04/05 15:32:00	2023/04/05 20:22:00
4	297	System Generated Ramp Event for Event id : 1803563	2023/04/05 20:22:00	2023/04/05 21:52:00
4	593	Water leak valve repairs.	2023/04/07 21:04:00	2023/04/10 21:04:00
4	593	System Generated Slip Event linked to PCLF Event : 1804235	2023/04/10 21:04:00	2023/04/13 13:12:00
4	297	System Generated Ramp Event for Event id : 1804235	2023/04/13 13:12:00	2023/04/13 16:12:00
4	593	tripped on HP delta T's	2023/04/14 21:33:00	2023/04/14 22:56:00
4	297	System Generated Ramp Event for Event id : 1806279	2023/04/14 22:56:00	2023/04/15 00:26:00
4	34	high stack emissions.	2023/04/16 22:13:00	2023/04/16 23:16:00
4	62	High stack emissions	2023/04/16 23:16:00	2023/04/17 00:13:00

UNIT	MWLOSS	REASON	ACTUALSTARTDATE	ACTUALENDDATE
5	195	Manual rapping	2023/04/01 21:36:00	2023/04/01 23:03:00
5	76	Casing swiping.	2023/04/07 00:08:00	2023/04/07 03:31:00
5	100	Manual rapping	2023/04/11 20:55:00	2023/04/11 23:10:00
5	74	High stack emissions	2023/04/12 08:13:00	2023/04/12 12:03:00
5	175	High stack emissions	2023/04/12 12:03:00	2023/04/12 16:24:00
5	93	high stack emissions	2023/04/12 16:24:00	2023/04/12 19:28:00
5	135	High stack emissions.	2023/04/12 19:28:00	2023/04/12 20:10:00
5	174	High stack emissions.	2023/04/12 20:10:00	2023/04/13 00:59:00
5	200	Clean rapping	2023/04/15 00:41:00	2023/04/16 05:40:00
5	100	SO3 plant	2023/04/16 05:40:00	2023/04/16 06:36:00
5	96	High stack emission	2023/04/16 13:37:00	2023/04/16 17:55:00
5	50	high stack emissions.	2023/04/16 20:07:00	2023/04/16 23:30:00
5	47	High stack emission	2023/04/17 21:14:00	2023/04/17 22:19:00
5	98	high stack emissions.	2023/04/17 22:19:00	2023/04/18 00:28:00
5	98	High stack emissions.	2023/04/19 19:42:00	2023/04/19 21:21:00
5	199	High stack emissions.	2023/04/19 21:21:00	2023/04/20 02:33:00
5	100	High stack emissions.	2023/04/20 02:33:00	2023/04/20 03:17:00
5	95	High stack emissions	2023/04/21 00:15:00	2023/04/21 04:38:00
5	97	High stack emissions	2023/04/21 22:22:00	2023/04/22 04:01:00
5	98	High stack emissions	2023/04/22 19:35:00	2023/04/23 00:00:00
5	100	AM: RHI precip casing repairs	2023/04/23 00:00:00	2023/04/23 21:58:00
5	97	AM: Hi emissions.	2023/04/24 19:42:00	2023/04/25 02:33:00
5	77	High stack emissions	2023/04/25 02:33:00	2023/04/25 03:05:00
5	68	High stack emissions.	2023/04/26 19:23:00	2023/04/27 00:14:00
5	97	High stack emissions	2023/04/29 19:54:00	2023/04/30 00:09:00
6	593	Off load due to fire on R/H side ducting	2023/04/01 00:00:00	2023/04/30 23:59:59

PM Exceedances		
U2.	Unit synchronised on 2023/04/09 @ 16:07, emissions to be below the limit by 2023/04/12 @ 16:07 and remain below the limit by 2023/04/13 @ 23:59	10-Apr
U2.	ESP Poor Performance and Manual Rapping	25-Apr
U3.	LHI Casing Outage	02-Apr
U3.	ESP Poor Performance	08-Apr
U3.	ESP Poor Performance and Manual rapping	09-Apr
U3.	ESP Poor performance	11-Apr
U3.	ESP Poor Performance	12-Apr
U3.	ESP Poor Performance Manual Rapping	14-Apr
U3.	One High Hopper Level ESP Poor Performance	17-Apr
U3.	ESP Poor Performance Manual Rapping	18-Apr
U3.	LHO Casing Outage	22-Apr
U3.	ESP Poor Performance and Manual Rapping	26-Apr
U3.	RHI Precip Casing Repairs	30-Apr
U4.	Unit Light Up	01-Apr
U4.	Unit Tripped The unit synchronised 2023/04/05 @ 20:22, emissions need to be below the limit by 2023/04/08 @ 20:22 and remain below the limit until 2023/04/09 @ 23:59	05-Apr
U4.	Unit Light Up	06-Apr
U4.	Unit Shut down for HP heater valve repair	07-Apr
U4.	The unit synchronised on 2023/04/13 @ 13:12, the emissions should be below by 2023/04/16 @ 13:12 and remain below until 2023/04/17 @ 23:59	13-Apr
U4.	ESP Poor Performance & SO3 Plant offline in the morning	26-Apr
U5.	ESP Poor Performance and Manual Rapping	01-Apr
U5.	Three high hoppers reported due to 15WX21 out due to thermal overload. Casing Outage opportunity taken due to load loss	03-Apr
U5.	Attempt to take out LHO casing for outage but not successful due to draught in precip casings	04-Apr
U5.	High Emission test conducted	06-Apr
U5.	ESP Poor Performance	08-Apr
U5.	ESP Poor Performance	10-Apr
U5.	ESP Poor Performance and manual rapping	11-Apr
U5.	ESP Poor performance	13-Apr
U5.	ESP Poor Performance	14-Apr
U5.	SO3 Plant off for blower on permit. ESP Poor Performance	15-Apr
U5.	High Emission Correlation Test	18-Apr
U5.	ESP Poor Performance Manual Rapping	20-Apr
U5.	RHI Casing Outage	23-Apr
U5.	ESP Poor Performance Manual Rapping SO3 Plant off due to air blower fault	25-Apr
U5.	ESP Poor Performance and Manual Rapping	28-Apr