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Date: 25 April 2022

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LRP01PLA000 _0291/20220411

Dear Mr. Sibaya

LETHABO POWER STATION EMISSION MONTHLY REPORT FOR MARCH 2022

Please find attached Lethabo Power Station emission report for the month of March 2022.

Also attached are the Ambient Air Quality Monitoring Report, Complaints Register and the Fugitive Dust Fallout Monitoring Report for March 2022.

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

Yours sincerely

Karabo Rakgolela
GENERAL MANAGER

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Eskom Holdings SOC Ltd Reg No 2002/015527/30



Report

Lethabo Power Station

Report name: **Lethabo Power Station
March 2022
Emission Report**

Reference number: **LRP01PLA000_0291/20220411**
Document Type: **Report**
Area of Applicability: **Environment**
Report Date: **April-2022**
Classification: **Controlled Disclosure**

Signatures:

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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 Mar-2022
	Coal	Tons	2 000 000	1 277 159
	Fuel Oil	Tons	1 700	1645.04
Production Rates	Product / By-Product Name	Units	Maximum Production Capacity Permitted	Production Rate Mar-2022
	Energy	GWh	2834.64	2 044.87
	Ash	Tons	770 000	505 627.1
	RE Ash	kg/MWh	not specified	247.27

2. ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.656 (Standard)	0.550
Ash Content	%	37.37 (Standard)	39.590

*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	SOx	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. ABATEMET TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Mar-2022
Unit 1	<i>Electrostatic Precipitator (ESP)</i>	99.73%
Unit 2	<i>Electrostatic Precipitator (ESP)</i>	99.62%
Unit 3	<i>Electrostatic Precipitator (ESP)</i>	99.73%
Unit 4	<i>Electrostatic Precipitator (ESP)</i>	99.77%
Unit 5	<i>Electrostatic Precipitator (ESP)</i>	99.86%
Unit 6	<i>Electrostatic Precipitator (ESP)</i>	99.82%

5. MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO ₂	NO
Unit 1	94.3	98.3	98.3
Unit 2	95.8	98.9	99.1
Unit 3	95.6	99.1	99.3
Unit 4	99.7	99.8	100.0
Unit 5	98.4	98.9	98.9
Unit 6	98.8	98.8	98.7

6. EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of March 2022

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO _x (tons)
Unit 1	167.6	2 081	1 124
Unit 2	174.7	4 337	1 919
Unit 3	236.6	4 201	2 116
Unit 4	208.3	3 408	1 550
Unit 5	116.1	2 697	1 213
Unit 6	161.3	4 008	1 792
SUM	1 064.7	20 733	9 714

Table 6.2: Operating days in compliance to PM AEL Limit - March 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance	Average PM (mg/Nm ³)
Unit 1	5	14	0	0	14	182.0
Unit 2	24	7	0	0	7	81.1
Unit 3	16	15	0	0	15	109.6
Unit 4	16	9	0	0	9	129.3
Unit 5	24	2	0	0	2	91.0
Unit 6	29	2	0	0	2	84.1
SUM	114	49	0	0	49	

Table 6.3: Operating days in compliance to SO_x AEL Limit - March 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance	Average SO _x (mg/Nm ³)
Unit 1	21	0	0	0	0	1 842.0
Unit 2	31	0	0	0	0	2 032.3
Unit 3	31	0	0	0	0	1 953.7
Unit 4	26	0	0	0	0	1 919.3
Unit 5	26	0	0	0	0	1 949.0
Unit 6	31	0	0	0	0	2 091.3
SUM	166	0	0	0	0	

Table 6.4: Operating days in compliance to NOx AEL Limit - March 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance	Average NOx (mg/Nm ³)
Unit 1	21	0	0	0	0	989.8
Unit 2	31	0	0	0	0	895.7
Unit 3	31	0	0	0	0	983.8
Unit 4	26	0	0	0	0	865.2
Unit 5	26	0	0	0	0	870.9
Unit 6	31	0	0	0	0	934.9
SUM	166	0	0	0	0	

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

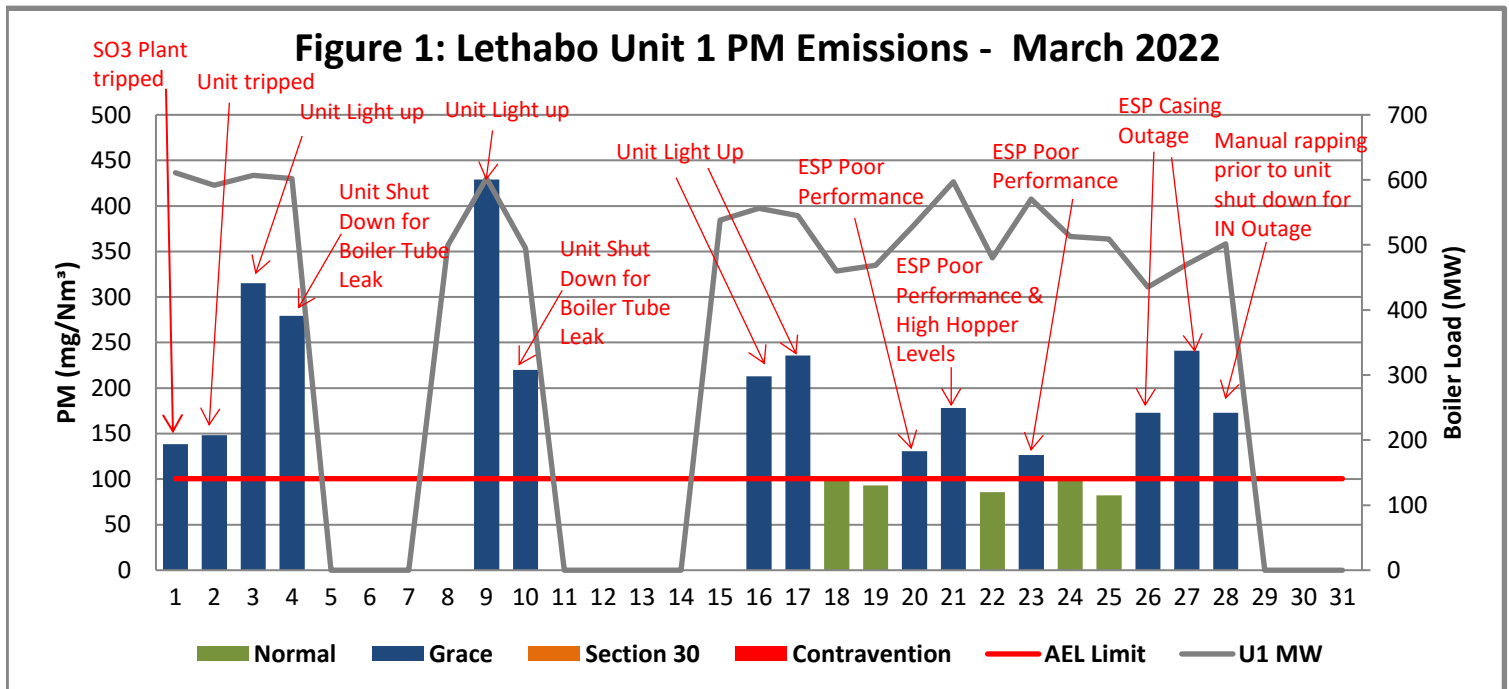


Figure 2: Lethabo Unit 2 PM Emissions - March 2022

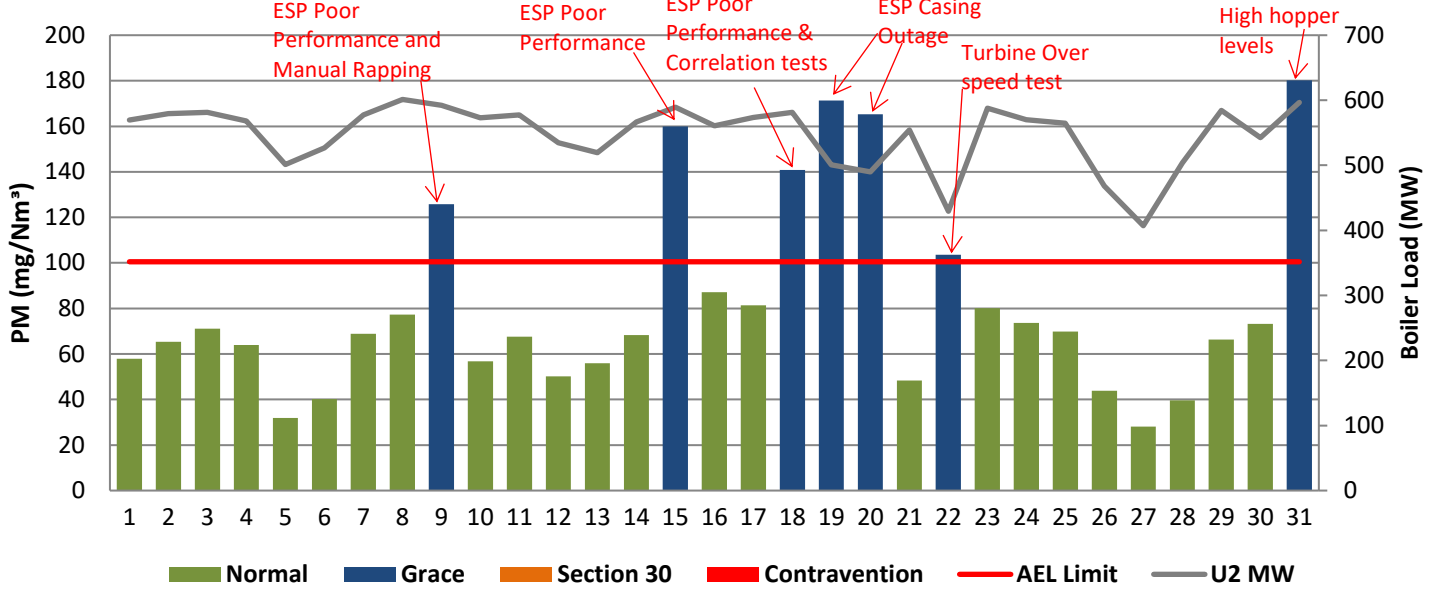


Figure 3: Lethabo Unit 3 PM Emissions - March 2022

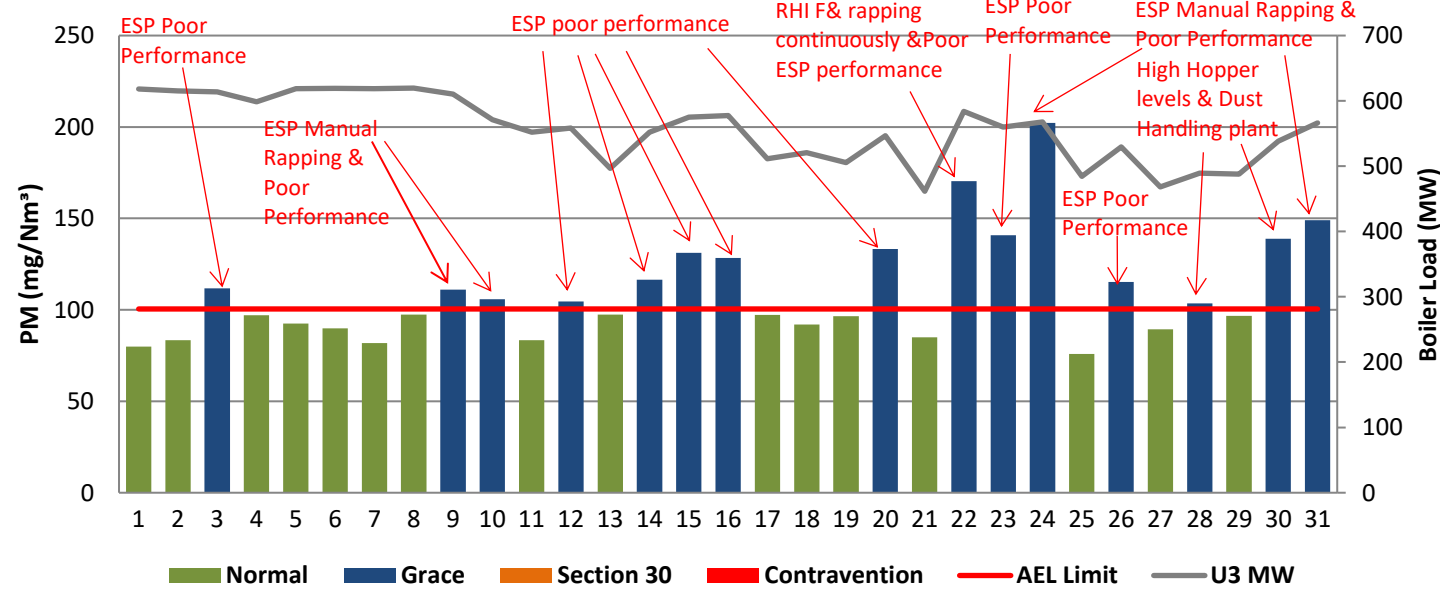


Figure 4: Lethabo Unit 4 PM Emissions - March 2022

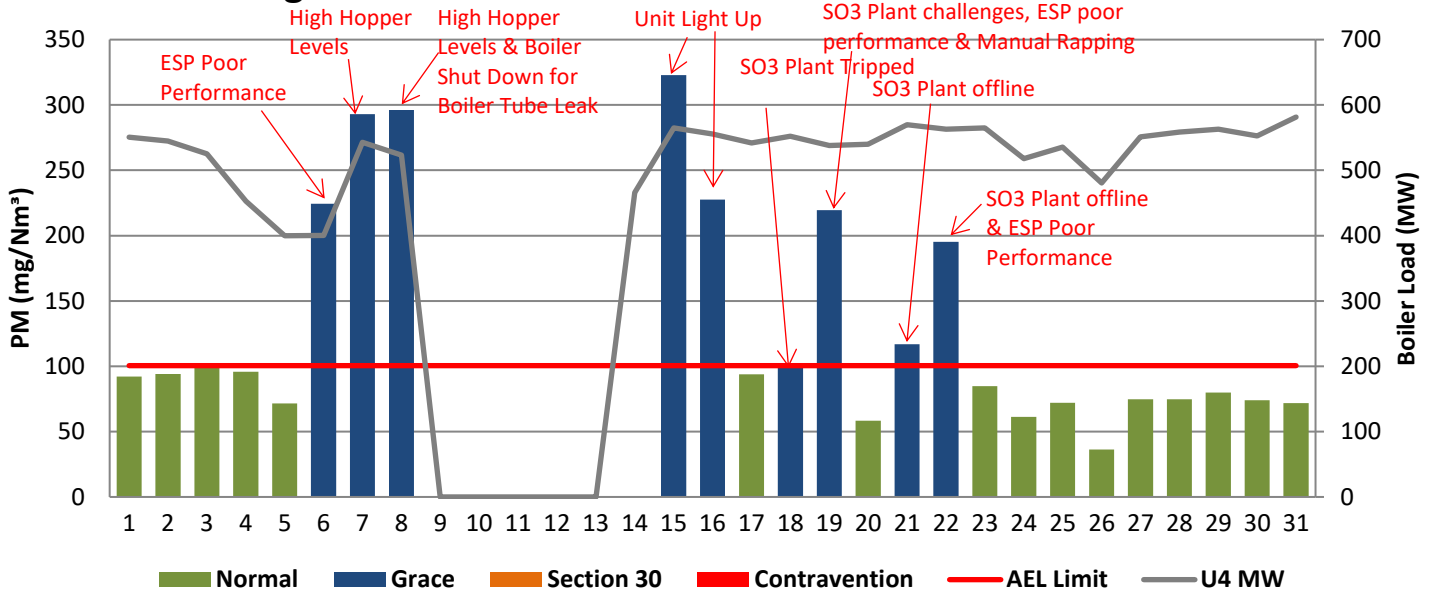


Figure 5: Lethabo Unit 5 PM Emissions - March 2022

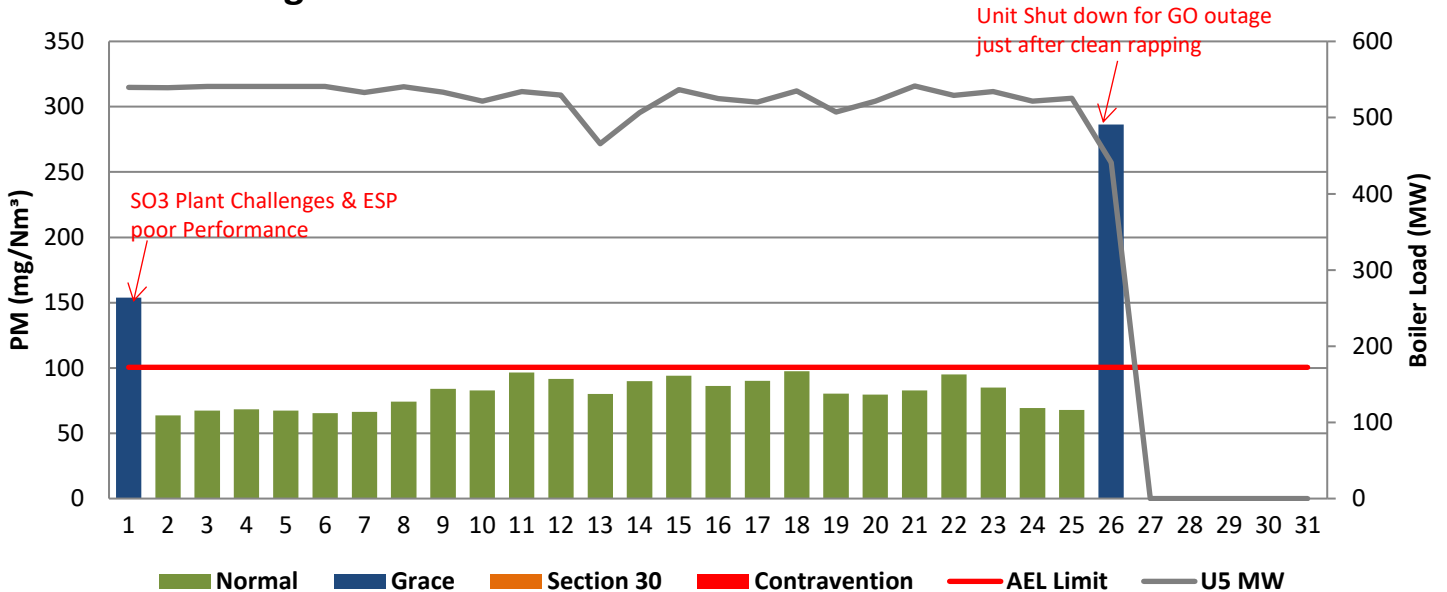


Figure 6: Lethabo Unit 6 PM Emissions - March 2022

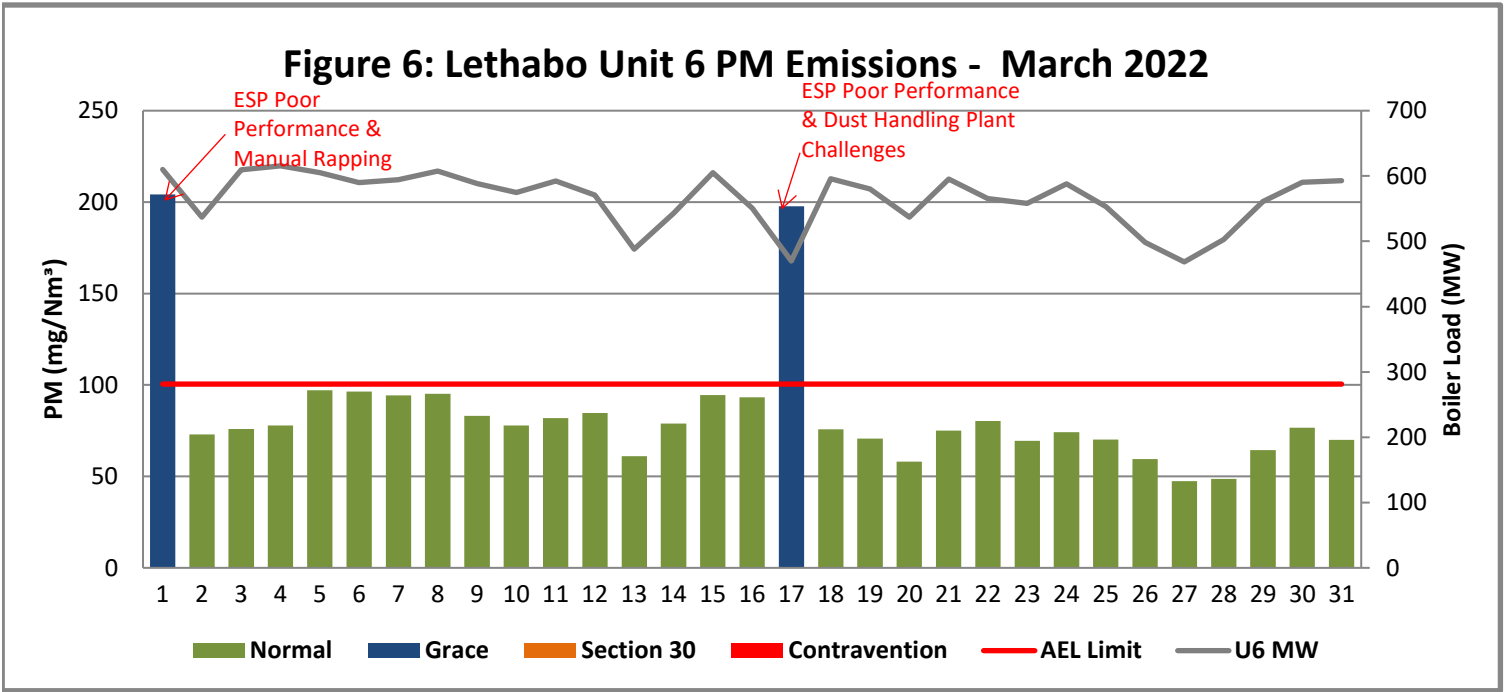


Figure 7: Lethabo Unit 1 SOx Emissions - March 2022

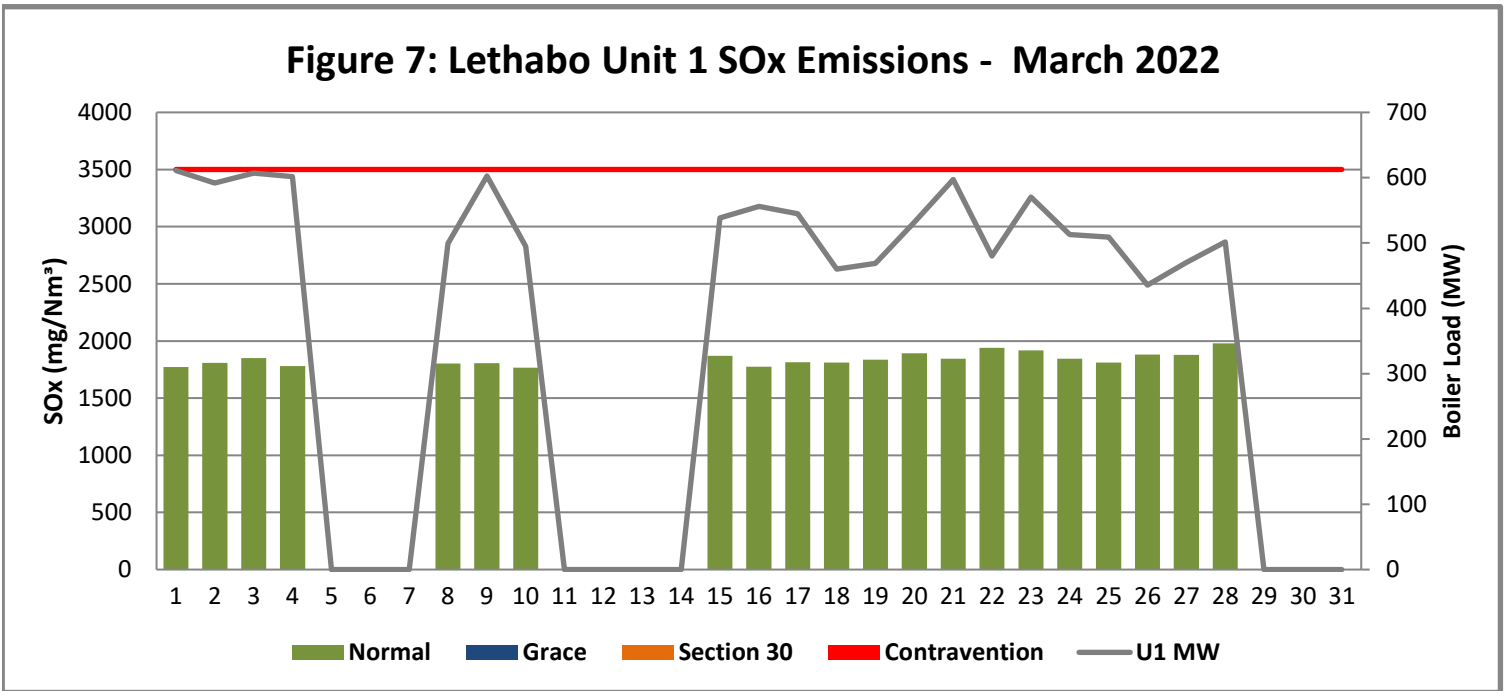


Figure 8: Lethabo Unit 2 SOx Emissions - March 2022

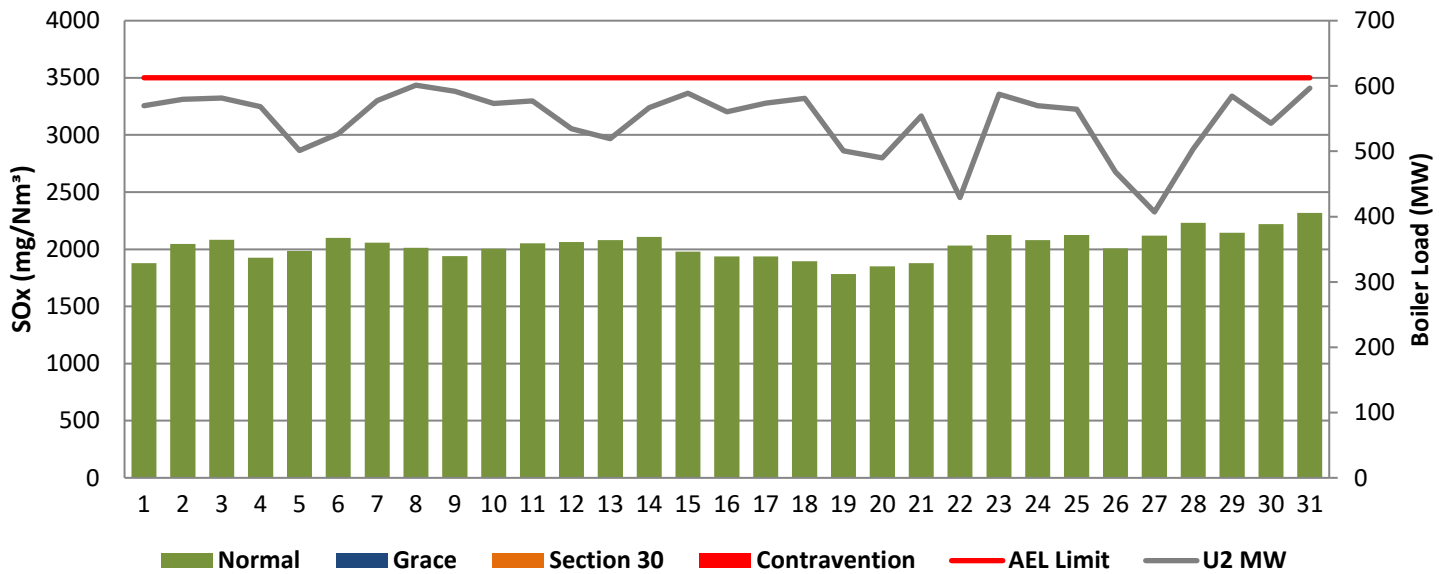


Figure 9: Lethabo Unit 3 SOx Emissions - March 2022

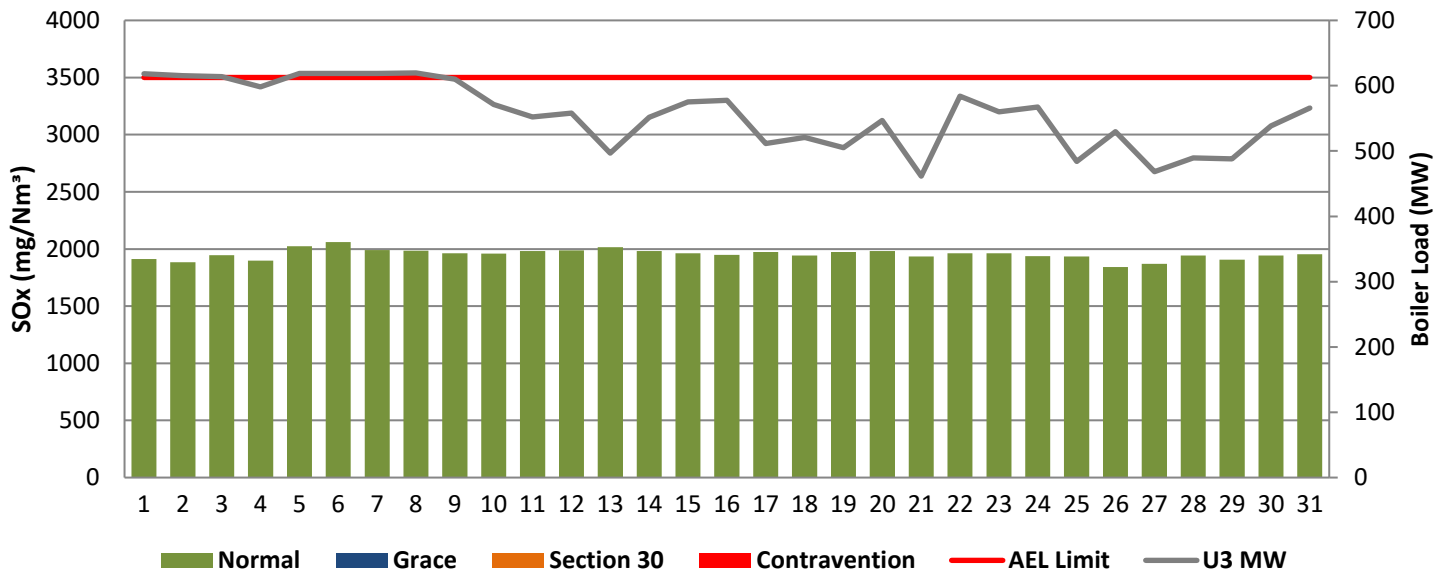


Figure 10: Lethabo Unit 4 SOx Emissions - March 2022

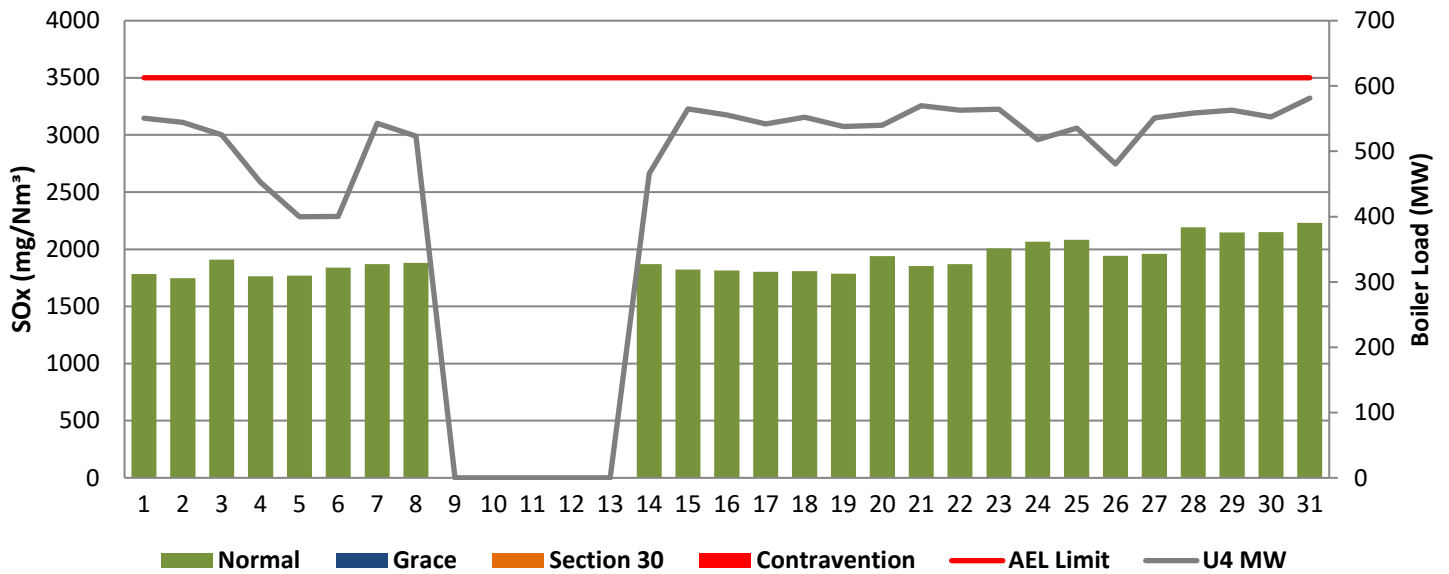


Figure 11: Lethabo Unit 5 SOx Emissions - March 2022

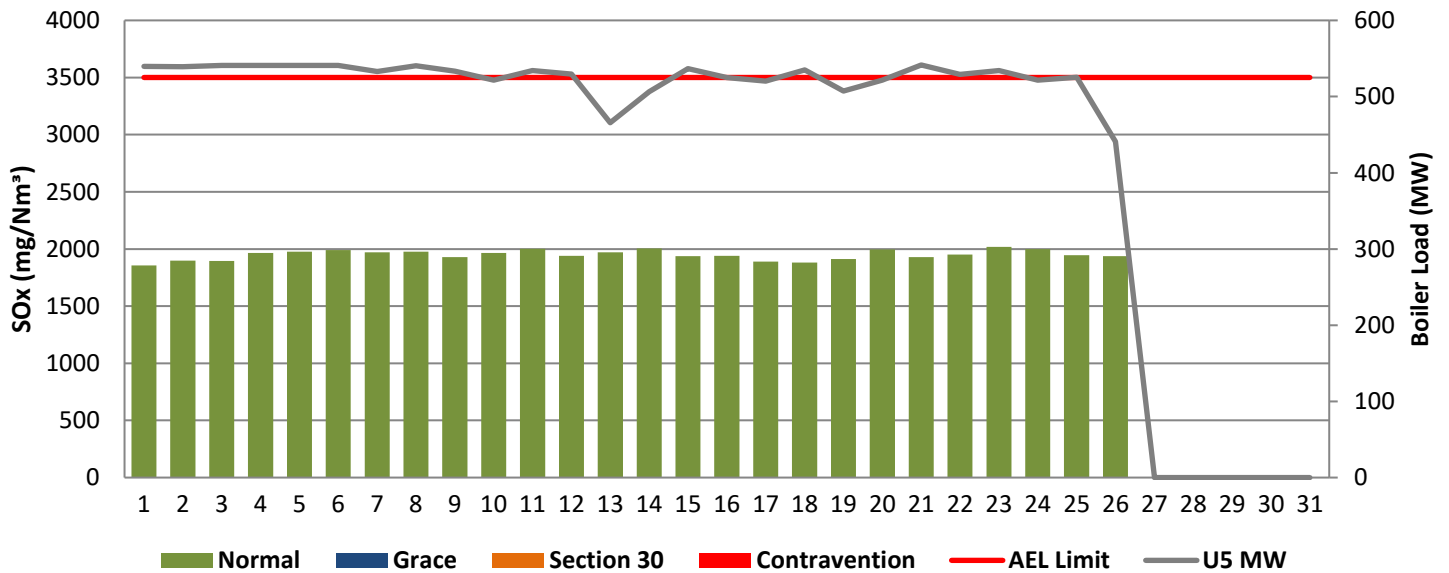


Figure 12: Lethabo Unit 6 SOx Emissions - March 2022

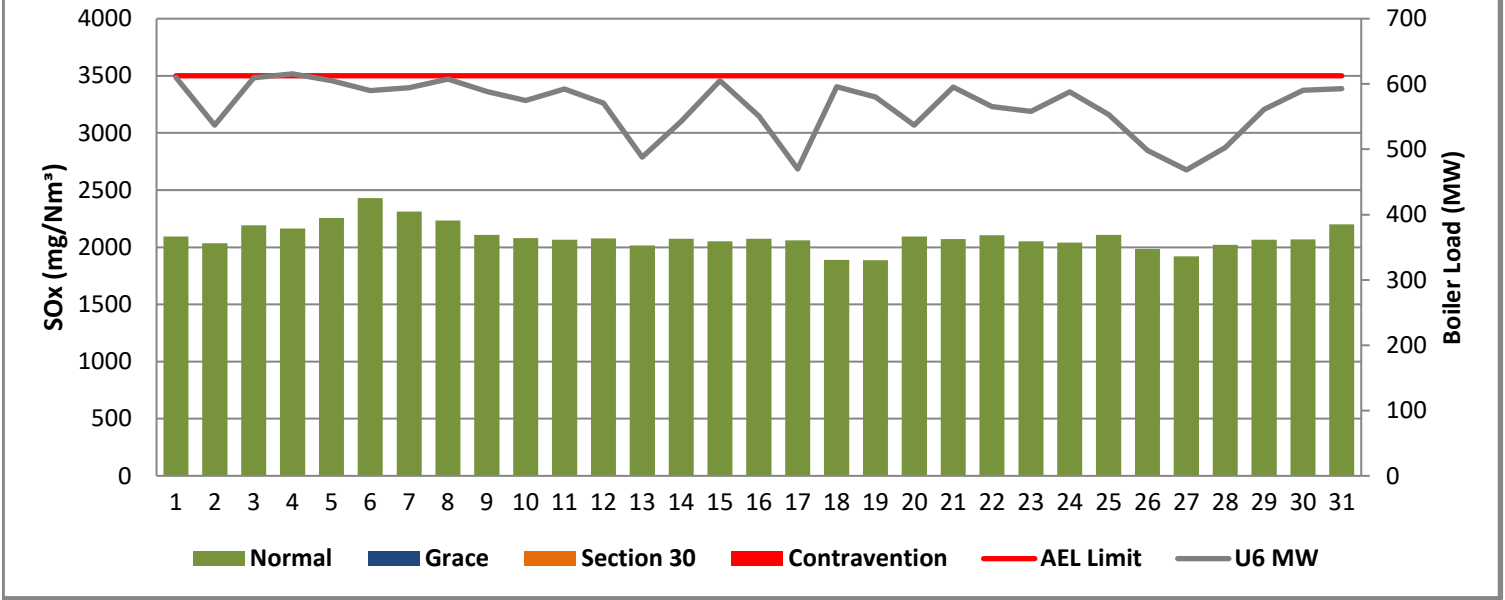


Figure 13: Lethabo Unit 1 NOx Emissions - March 2022

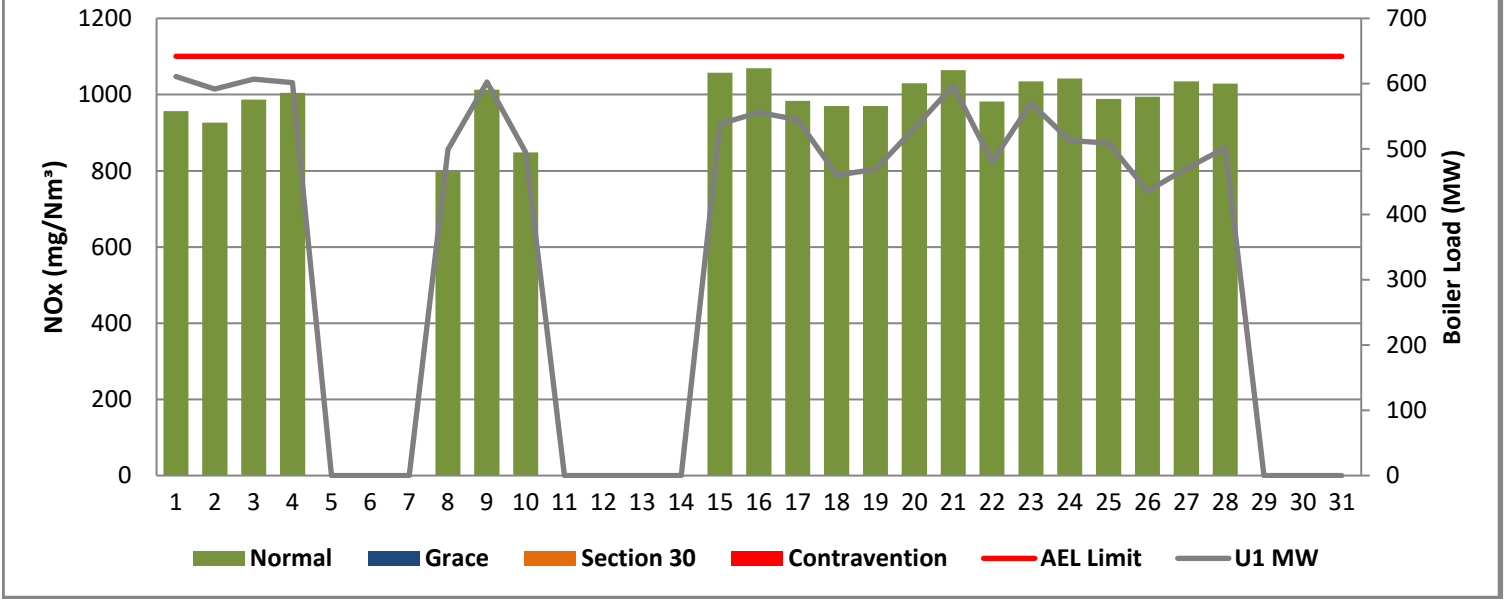


Figure 14: Lethabo Unit 2 NOx Emissions - March 2022

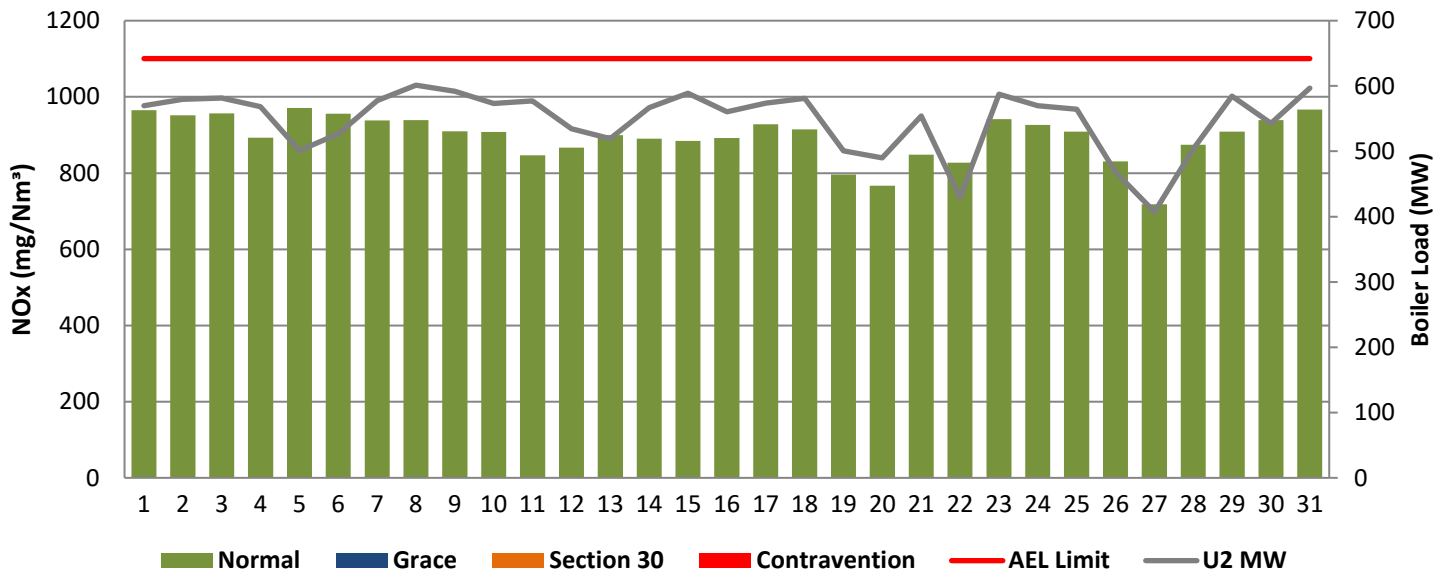


Figure 15: Lethabo Unit 3 NOx Emissions - March 2022

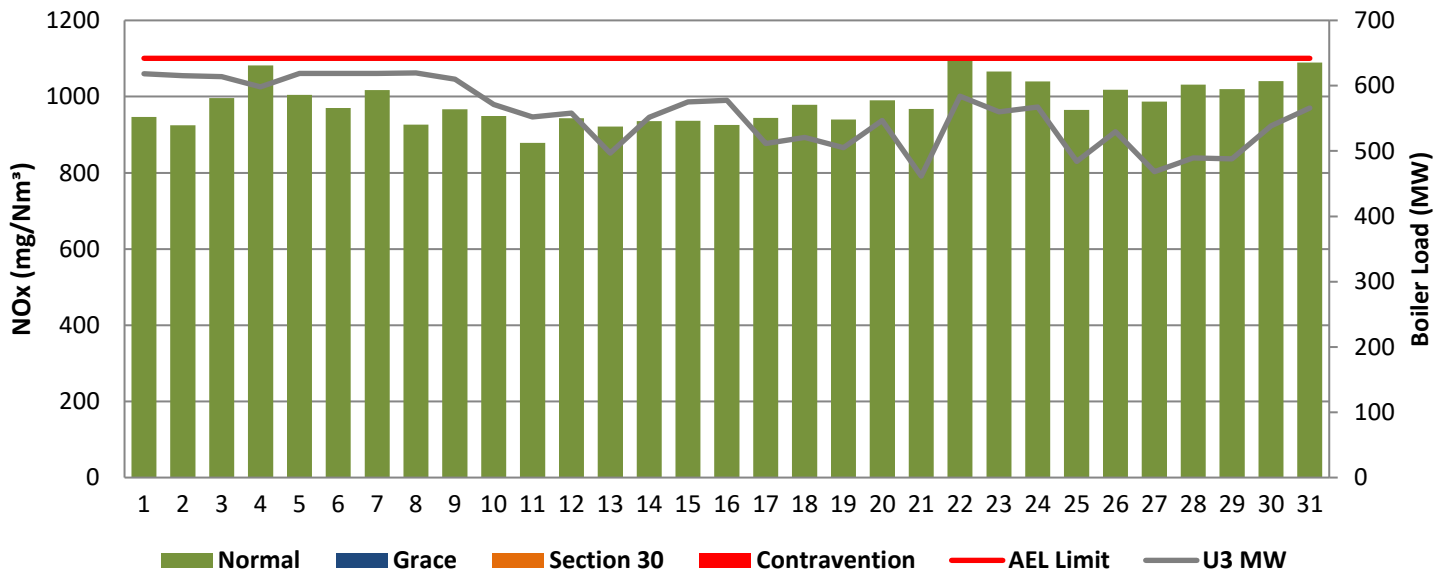


Figure 16: Lethabo Unit 4 NOx Emissions - March 2022

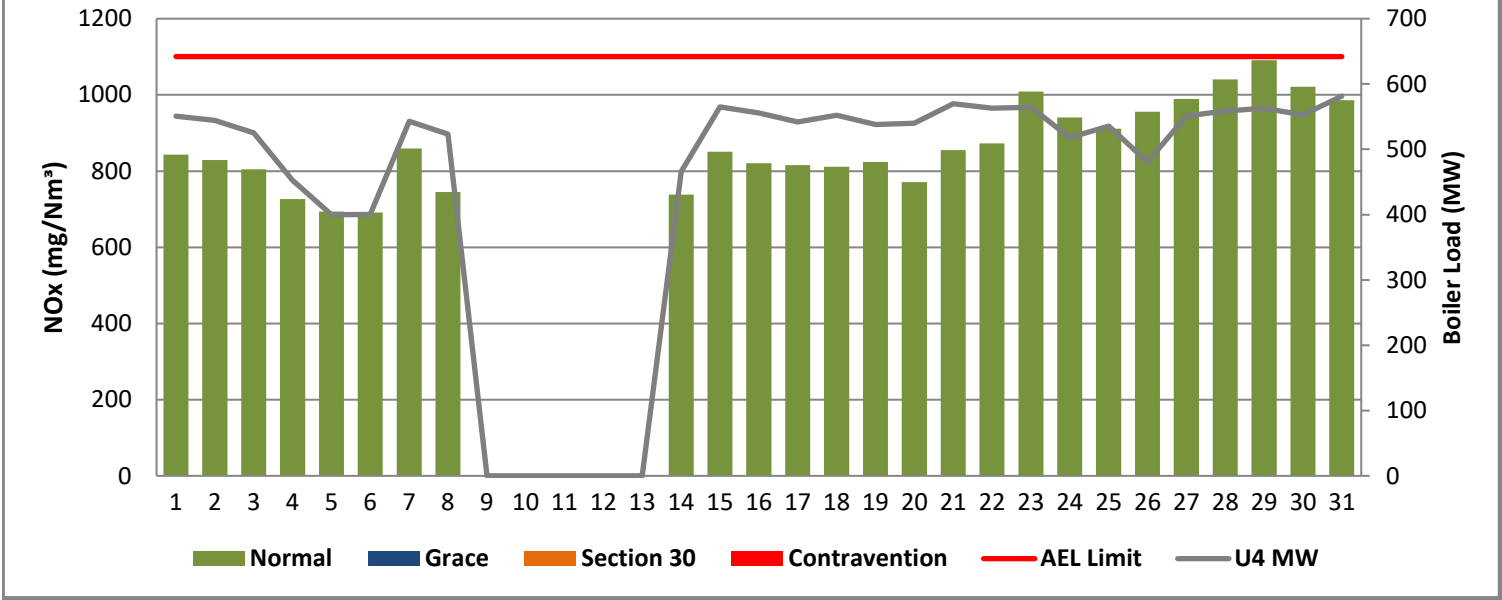


Figure 17: Lethabo Unit 5 NOx Emissions - March 2022

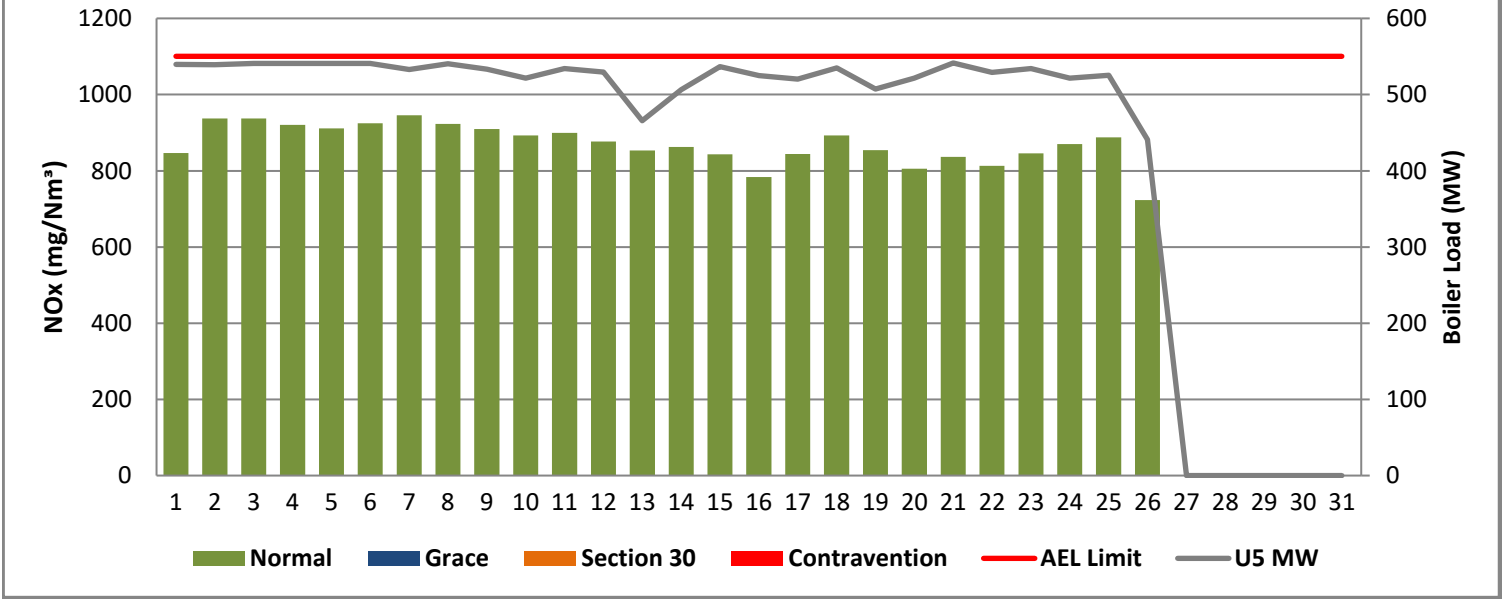
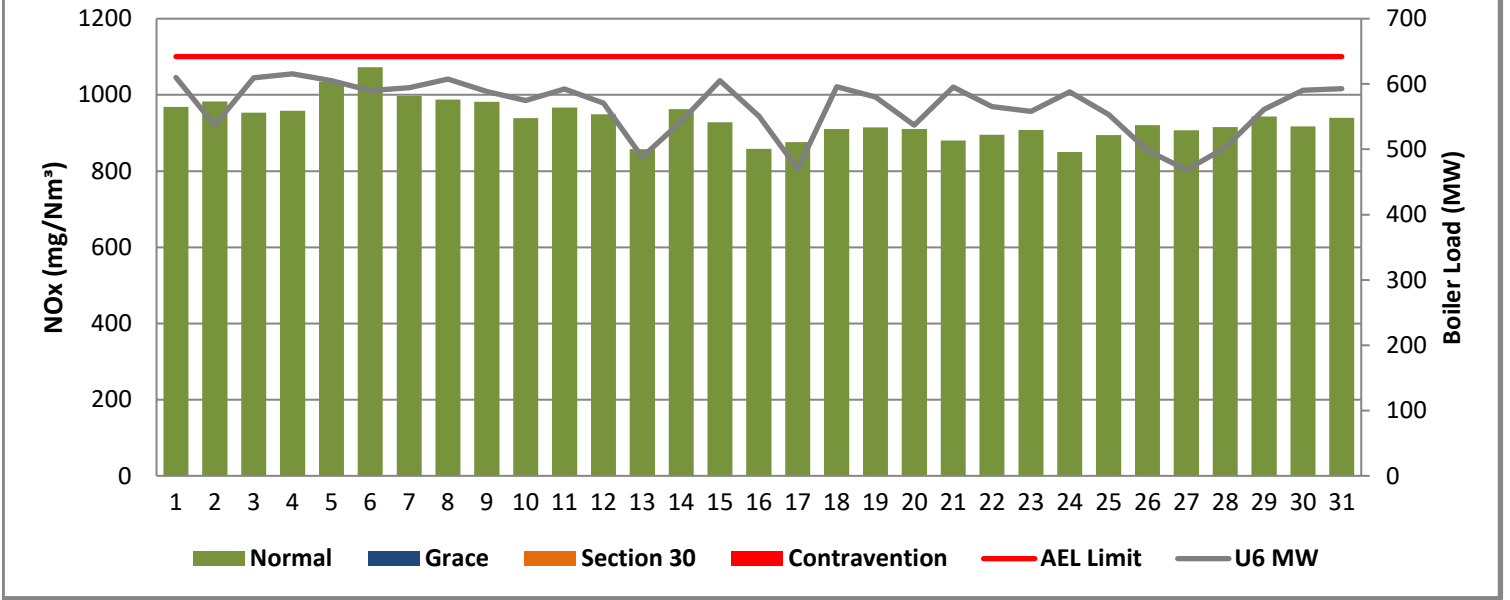


Figure 18: Lethabo Unit 6 NOx Emissions - March 2022



7 SHUT DOWN AND LIGHT UP INFORMATION

Table 7.1: PM Start-up information for the month of March 2022

Unit No.1	<i>Loss of 220V AC supply to excitation panel</i>		<i>Boiler tube leak rimary reheater R/H side rear</i>		<i>Boiler tube leak repairs</i>		<i>Internal inspection</i>	
Breaker Open (BO)	12:20 PM	2022/03/02	10:25 PM	2022/03/04	2:00 PM	2022/03/10	11:00 PM	2022/03/28
Draught Group (DG) Shut Down (SD)	<i>DG did not trip or SD</i>	<i>DG did not trip or SD</i>	1:50 PM	2022/03/05	3:30 AM	2022/03/11	12:25 PM	2022/03/29
BO to DG SD (duration)	<i>n/a</i>	DD:HH:MM	00:15:25	DD:HH:MM	00:13:30	DD:HH:MM	00:13:25	DD:HH:MM
Fires in time			2:10 AM	2022/03/08	3:15 AM	2022/03/15		
Synch. to Grid (or BC)			4:20 AM	2022/03/08	7:15 AM	2022/03/15		
Fires in to BC (duration)		DD:HH:MM	00:02:10	DD:HH:MM	00:04:00	DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)			11:00 AM	2022/03/11	10:00 PM	2022/03/19		
Emissions below limit from BC (duration)		DD:HH:MM	03:06:40	DD:HH:MM	04:14:45	DD:HH:MM		DD:HH:MM

Unit No.2	<i>Main turbine over speed trip test</i>							
Breaker Open (BO)	11:10 PM	2022/03/21						
Draught Group (DG) Shut Down (SD)	<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						
Fires in time								
Synch. to Grid (or BC)								
Fires in to BC (duration)		DD:HH:MM						
Emissions below limit from BC (end date)								
Emissions below limit from BC (duration)		DD:HH:MM						

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

Unit No.4	<i>Boiler tube leak repairs & Inspection Outage</i>						
Breaker Open (BO)	4:35 AM	2022/03/08					
Draught Group (DG) Shut Down (SD)	5:50 PM	2022/03/08					
BO to DG SD (duration)	00:13:15	DD:HH:MM					
Fires in time	9:45 PM	2022/03/13					
Synch. to Grid (or BC)	4:35 AM	2022/03/14					
Fires in to BC (duration)	00:06:50	DD:HH:MM					
Emissions below limit from BC (end date)	3:00 AM	2022/03/18					
Emissions below limit from BC (duration)	03:22:25	DD:HH:MM					

Unit No.5	G.O.						
Breaker Open (BO)	2:25 AM	2022/03/26					
Draught Group (DG) Shut Down (SD)	7:30 PM	2022/03/26					
BO to DG SD (duration)	00:17:05	DD:HH:MM					
Fires in time							
Synch. to Grid (or BC)							
Fires in to BC (duration)		DD:HH:MM					
Emissions below limit from BC (end date)							
Emissions below limit from BC (duration)		DD:HH:MM					

Unit No.6	Rotor Earth brush replacement						
Breaker Open (BO)	10:50 PM	2022/03/16					
Draught Group (DG) Shut Down (SD)	DG did not trip or SD	DG did not trip or SD					
BO to DG SD (duration)	n/a	DD:HH:MM					
Fires in time							
Synch. to Grid (or BC)							
Fires in to BC (duration)		DD:HH:MM					
Emissions below limit from BC (end date)							
Emissions below limit from BC (duration)		DD:HH:MM					

7.2: Point Source emissions released during start-up (fires-in) and Shut-down (SD) for the month of March 2022 in mg/Nm³

8. MAINTENANCE

Unit 1				
Beginning of	2022/03/26 00:00	2022/03/27 00:03		
Reason for Maintenance	RHO Precip. casing	RHI precip casing		
End (Time):	2022/03/26 21:05	2022/03/27 16:47		
Duration	21:05:00	16:44:00		

Unit 2				
Beginning of	2022/03/19 00:02	2022/03/20 00:00:00		
Reason for Maintenance	LHO precip casing	RHI precip casing repairs		
End (Time):	2022/03/19 21:35:00	2022/03/20 17:03:00		
Duration	21:33:00	17:03:00		

Unit 3				
Beginning of				
Reason for Maintenance				
End (Time):				
Duration				

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

Unit 5				
Beginning of				
Reason for Maintenance				
End (Time):				
Duration				

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

9. GENERAL

Unit 1 :

PM Monitor Availability on 04/03/2022: The monitor availability was 70% due to Unit Light up.

PM Monitor Availability on 10/03/2022: The monitor availability was 50% due to the Unit Shut Down and the electrical boards were being worked on by maintenance.

Gaseous Monitor Availability on 10/03/2022: The monitor availability was 64.3% due to the electrical boards were being worked on by maintenance.

Unit 2 :

PM Monitor Availability on 10/03/2022: The monitor availability was 75% due to the electrical boards were being worked on by maintenance.

PM Monitor Availability on 16/03/2022: The monitor availability was 16.7% due to the electrical boards were being worked on by maintenance.

Gaseous Monitor Availability on 10/03/2022: The monitor availability was 75% due to the electrical boards were being worked on by maintenance.

Unit3:

PM Monitor Availability on 10/03/2022: The monitor availability was 75% due to the electrical boards were being worked on by maintenance.

PM Monitor Availability on 16/03/2022: The monitor availability was 20.8% due to the electrical boards were being worked on by maintenance.

Gaseous Monitor Availability on 10/03/2022: The monitor availability was 75% due to the electrical boards were being worked on by maintenance.

Unit 4:

Gaseous Monitor Availability on 08/03/2022: The monitor availability was 75% due to the electrical boards were being worked on by maintenance.

Unit 5:

Gaseous Monitor Availability on 08/03/2022: The monitor availability was 75% due to the electrical boards were being worked on by maintenance.

Unit 6:

Gaseous Monitor Availability on 08/03/2022: The monitor availability was 75% due to the electrical boards were being worked on by maintenance.

Unit 1:

Unit was on Day 3 on the 02/03/2022, the unit tripped on AVR fault on 02/03/2022 at 12:11 pm (Boiler off). The Unit synchronized on 2022/03/02 at 15:45, unit to be below the limit on Saturday 2022/03/05 at 15:45. The Unit had to be shut down on 04/03/2022 at 22:21 for a boiler tube leak. No Section 30 was incurred based on these events.

Unit 2:

There was a Turbine over speed Test on the 21/03/2022 to 22/03/2022 from 23:05-07:20 where the unit was not synchronised (0MW). The Boiler was still on load during this test, a value of 150MW was inserted for the period so as to not discount the reporting hours.

Unit 6:

Unit was off load for maintenance on the generator on the 16/03/2022 to 17/03/2022 from 22:45-05:20 where the unit was not synchronised (0MW). The Boiler was still on load during this test, a value of 150MW was inserted for the period so as to not discount the reporting hours.

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
Apr-21	0.78	0.49	0.52	0.43	0.31	0.48	0.47
May-21	0.33	0.45	0.42	0.53	0.49	0.49	0.46
Jun-21	0.26	0.63	0.37	0.36	0.35	0.33	0.38
Jul-21	0.23	0.55	0.43	0.31	0.27	0.29	0.35
Aug-21	0.24	0.73	0.41	0.55	0.24	0.28	0.41
Sep-21	0.38	0.92	0.52	0.33	0.26	OFF	0.47
Oct-21	0.63	0.53	0.50	0.50	0.40	OFF	0.51
Nov-21	0.34	0.59	0.52	0.52	0.41	0.41	0.46
Dec-21	0.39	OFF	0.55	0.57	0.34	0.29	0.42
Jan-22	0.37	OFF	0.52	0.46	0.47	0.36	0.44
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

ADDENDUM TO MONTHLY EMISSIONS REPORT

12. DAILY EMISSIONS FIGURES

Final Dust Concentration (mg/Nm³)

Date	U1	U2	U3	U4	U5	U6	Limit
01-Mar	138	58	80	92	154	204	100
02-Mar	148	65	83	94	64	73	100
03-Mar	315	71	112	100	67	76	100
04-Mar	279	64	97	96	68	78	100
05-Mar	OFF	32	93	72	67	97	100
06-Mar	OFF	40	90	224	65	96	100
07-Mar	OFF	69	82	293	66	94	100
08-Mar	OFF	77	97	296	74	95	100
09-Mar	429	126	111	OFF	84	83	100
10-Mar	220	57	106	OFF	83	78	100
11-Mar	OFF	68	83	OFF	97	82	100
12-Mar	OFF	50	105	OFF	92	85	100
13-Mar	OFF	56	97	OFF	80	61	100
14-Mar	OFF	68	117	OFF	90	79	100
15-Mar	OFF	160	131	323	94	94	100
16-Mar	213	87	128	228	86	93	100
17-Mar	236	81	97	94	90	198	100
18-Mar	98	141	92	101	97	76	100
19-Mar	93	171	97	219	80	71	100
20-Mar	131	165	133	58	80	58	100
21-Mar	178	48	85	117	83	75	100
22-Mar	86	104	170	195	95	80	100
23-Mar	127	80	141	85	85	69	100
24-Mar	98	74	202	61	69	74	100
25-Mar	82	70	76	72	68	70	100
26-Mar	173	44	115	36	286	60	100
27-Mar	241	28	89	75	OFF	47	100
28-Mar	173	40	104	75	OFF	49	100
29-Mar	OFF	66	97	80	OFF	64	100
30-Mar	OFF	73	139	74	OFF	77	100
31-Mar	OFF	180	149	72	OFF	70	100

ADDENDUM TO MONTHLY EMISSIONS REPORT

Final SOx Concentration (mg/Nm³)

Date	U1	U2	U3	U4	U5	U6	Limit
01-Mar	1771	1880	1911	1783	1856	2093	3500
02-Mar	1810	2046	1884	1746	1897	2035	3500
03-Mar	1850	2083	1945	1909	1896	2193	3500
04-Mar	1779	1927	1899	1764	1964	2163	3500
05-Mar	OFF	1986	2024	1769	1976	2257	3500
06-Mar	OFF	2101	2061	1839	1991	2430	3500
07-Mar	OFF	2058	1991	1871	1970	2311	3500
08-Mar	1803	2014	1985	1882	1976	2233	3500
09-Mar	1805	1940	1962	OFF	1928	2107	3500
10-Mar	1767	2004	1961	OFF	1965	2079	3500
11-Mar	OFF	2053	1983	OFF	2001	2067	3500
12-Mar	OFF	2063	1989	OFF	1939	2076	3500
13-Mar	OFF	2079	2016	OFF	1970	2017	3500
14-Mar	OFF	2107	1983	1870	2004	2073	3500
15-Mar	1870	1978	1961	1821	1937	2053	3500
16-Mar	1776	1938	1948	1815	1940	2075	3500
17-Mar	1815	1937	1975	1803	1891	2059	3500
18-Mar	1810	1897	1942	1807	1882	1889	3500
19-Mar	1837	1782	1975	1786	1913	1886	3500
20-Mar	1891	1850	1981	1939	1995	2094	3500
21-Mar	1845	1878	1935	1852	1928	2071	3500
22-Mar	1940	2032	1962	1870	1952	2105	3500
23-Mar	1919	2125	1963	2008	2018	2051	3500
24-Mar	1846	2080	1937	2065	1998	2041	3500
25-Mar	1811	2126	1933	2083	1947	2107	3500
26-Mar	1881	2008	1842	1943	1938	1985	3500
27-Mar	1878	2119	1869	1959	OFF	1920	3500
28-Mar	1979	2230	1943	2191	OFF	2022	3500
29-Mar	OFF	2144	1905	2146	OFF	2065	3500
30-Mar	OFF	2219	1944	2149	OFF	2068	3500
31-Mar	OFF	2317	1954	2231	OFF	2200	3500

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Final NOx Concentration (mg/Nm³)

Date	U1	U2	U3	U4	U5	U6	Limit
01-Mar	957	965	947	844	847	968	1100
02-Mar	926	951	925	829	938	983	1100
03-Mar	987	957	996	804	937	953	1100
04-Mar	1004	893	1082	727	920	958	1100
05-Mar	OFF	971	1004	694	911	1035	1100
06-Mar	OFF	956	970	691	925	1073	1100
07-Mar	OFF	939	1017	859	946	997	1100
08-Mar	800	939	926	745	923	988	1100
09-Mar	1013	910	966	OFF	910	982	1100
10-Mar	848	908	949	OFF	893	939	1100
11-Mar	OFF	846	878	OFF	900	967	1100
12-Mar	OFF	866	944	OFF	877	949	1100
13-Mar	OFF	900	922	OFF	853	857	1100
14-Mar	OFF	891	935	739	863	962	1100
15-Mar	1058	885	936	851	843	928	1100
16-Mar	1070	892	925	820	784	859	1100
17-Mar	983	928	944	815	844	876	1100
18-Mar	970	915	978	811	893	911	1100
19-Mar	970	796	940	824	854	914	1100
20-Mar	1029	767	990	771	806	911	1100
21-Mar	1064	849	967	855	836	880	1100
22-Mar	982	828	1100	873	813	896	1100
23-Mar	1035	942	1065	1009	846	908	1100
24-Mar	1042	926	1040	941	870	850	1100
25-Mar	988	909	965	911	888	894	1100
26-Mar	995	830	1018	955	724	920	1100
27-Mar	1035	719	987	989	OFF	907	1100
28-Mar	1029	874	1031	1040	OFF	916	1100
29-Mar	OFF	909	1020	1091	OFF	943	1100
30-Mar	OFF	939	1041	1021	OFF	917	1100
31-Mar	OFF	966	1089	986	OFF	940	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
Apr-21	100.00%	0.0	100.00%	0.0	98%	2.7	99.23%	0.9	100.00%	0.0	98.48%	1.8
May-21	88.70%	2.0	100.00%	0.0	100%	0.0	100.00%	0.0	88.82%	1.9	100.00%	0.0
Jun-21	98.59%	1.7	99.28%	0.9	99%	1.0	100.00%	0.0	100.00%	0.0	100.00%	0.0
Jul-21	100.00%	0.0	100.00%	0.0	99.38%	0.8	100.00%	0.0	100.00%	0.0	100.00%	0.0
Aug-21	99.33%	0.8	100.00%	0.0	99.26%	0.9	100.00%	0.0	100.00%	0.0	100.00%	0.0
Sep-21	95.94%	1.0	96.00%	1.0	95.98%	1.0	95.97%	1.0	100.00%	0.0	OFF	OFF
Oct-21	97.32%	3.3	99.36%	0.8	99.33%	0.8	100.00%	0.0	100.00%	0.0	OFF	OFF
Nov-21	100.00%	0.0	100.00%	0.0	100.00%	0.0	96.26%	0.6	95.79%	1.2	100.00%	0.0
Dec-21	99.44%	0.7	OFF	OFF	98.24%	2.2	98.02%	2.5	100.00%	0.0	100.00%	0.0
Jan-22	98.50%	1.9	OFF	OFF	99.32%	0.8	100.00%	0.0	100.00%	0.0	100.00%	0.0
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

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
Apr-21	85.06%	4.5	100.00%	0.0	88.46%	3.5	100.00%	0.0	99.33%	0.2	100.00%	0.0
May-21	100.00%	0.0	100.00%	0.0	81.77%	2.7	76.09%	4.4	78.12%	3.8	100.00%	0.0
Jun-21	100.00%	0.0	100.00%	0.0	92.28%	2.3	100.00%	0.0	100.00%	0.0	100.00%	0.0
Jul-21	100.00%	0.0	100.00%	0.0	91.05%	2.7743056	100.00%	0.0	100.00%	0.0	100.00%	0.0
Aug-21	100.00%	0.0	47.45%	16.3	100.00%	0.0	99.08%	0.3	100.00%	0.0	100.00%	0.0
Sep-21	100.00%	0.0	71.12%	8.0	100.00%	0.0	100.00%	0.0	100.00%	0.0	OFF	OFF
Oct-21	99.75%	0.1	100.00%	0.0	100.00%	0.0	100.00%	0.0	100.00%	0.0	OFF	OFF
Nov-21	100.00%	0.0	100.00%	0.0	100.00%	0.0	88.62%	2.5	100.00%	0.0	90.27%	2.0
Dec-21	97.72%	0.7	OFF	OFF	96.64%	1.0	97.18%	0.9	99.87%	0.0	100.00%	0.0
Jan-22	95.79%	1.3	OFF	OFF	83.10%	5.2	100.00%	0.0	100.00%	0.0	100.00%	0.0
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

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Particulate Emission Monitors

Availability						
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Apr-21	83.69%	99.65%	99.28%	99.58%	99.86%	99.87%
May-21	99.01%	100.00%	94.83%	99.72%	97.31%	99.38%
Jun-21	99.72%	99.17%	99.31%	99.83%	99.86%	99.82%
Jul-21	98.12%	99.60%	99.87%	99.04%	98.22%	99.06%
Aug-21	100.00%	99.60%	99.60%	99.36%	100.00%	100.00%
Sep-21	98.61%	96.91%	99.03%	99.54%	99.72%	OFF
Oct-21	95.51%	99.06%	99.46%	99.87%	99.87%	OFF
Nov-21	99.60%	99.54%	99.86%	99.00%	98.61%	99.80%
Dec-21	98.39%	OFF	96.12%	96.81%	99.87%	100.00%
Jan-22	98.66%	OFF	99.19%	99.87%	99.70%	100.00%
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%

Gaseous Emission Monitors

Availability												
	Unit 1		Unit 2		Unit 3		Unit 4		Unit 5		Unit 6	
Month	SO _x	NO _x	SO _x	NO _x	SO _x	NO _x	SO _x	NO _x	SO _x	NO _x	SO _x	NO _x
Apr-21	99.47%	99.76%	99.83%	99.83%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	99.84%	99.84%
May-21	94.33%	94.33%	99.87%	100.00%	100.00%	100.00%	99.87%	99.87%	100.00%	100.00%	100.00%	100.00%
Jun-21	99%	99%	99.72%	99.86%	100%	100%	99.76%	99.76%	99.86%	99.86%	99.71%	99.71%
Jul-21	99.73%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	98.66%	98.66%	98.79%	98.92%
Aug-21	89.25%	89.78%	99.60%	99.73%	99.73%	99.73%	100.00%	100.00%	99.87%	99.87%	95.27%	95.27%
Sep-21	99.58%	99.58%	99.55%	99.55%	99.58%	99.72%	99.70%	99.70%	99.58%	99.72%	OFF	OFF
Oct-21	99.52%	99.36%	99.73%	99.87%	99.87%	99.87%	99.73%	99.87%	100.00%	100.00%	OFF	OFF
Nov-21	99.62%	99.81%	94.79%	94.79%	100.00%	99.86%	99.84%	99.84%	100.00%	100.00%	99.81%	99.81%
Dec-21	97.85%	97.85%	OFF	OFF	91.28%	91.42%	100.00%	99.87%	100.00%	100.00%	99.87%	100.00%
Jan-22	99.87%	100.00%	0.00%	0.00%	99.87%	100.00%	99.87%	100.00%	99.72%	100.00%	99.48%	99.48%
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%

Oxygen Monitor Availability						
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Apr-21	99.40%	98.91%	99.87%	99.72%	100.00%	99.37%
May-21	94.16%	99.87%	99.86%	99.87%	99.87%	98.63%
Jun-21	99.58%	99.79%	99.72%	99.76%	99.72%	99.55%
Jul-21	100.00%	99.87%	99.60%	99.52%	98.73%	98.79%
Aug-21	99.46%	99.87%	99.60%	100.00%	100.00%	95.45%
Sep-21	99.72%	99.13%	97.78%	99.55%	99.72%	OFF
Oct-21	99.84%	99.87%	97.04%	99.87%	99.73%	OFF
Nov-21	99.05%	89.58%	98.06%	100.00%	99.86%	99.81%
Dec-21	97.58%	OFF	91.28%	94.76%	99.86%	100.00%
Jan-22	100.00%	OFF	99.87%	98.25%	99.17%	99.22%
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%

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14. EFFICIENCY

ESP Efficiency (%)						
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Apr-21	99.679%	99.788%	99.777%	99.825%	99.858%	99.788%
May-21	99.866%	99.809%	99.825%	99.791%	99.782%	99.786%
Jun-21	99.894%	99.724%	99.844%	99.856%	99.839%	99.852%
Jul-21	99.916%	99.756%	99.819%	99.879%	99.887%	99.838%
Aug-21	99.894%	99.656%	99.810%	99.759%	99.883%	99.864%
Sep-21	99.836%	99.567%	99.756%	99.855%	99.873%	OFF
Oct-21	99.752%	99.776%	99.789%	99.800%	99.823%	OFF
Nov-21	99.870%	99.743%	99.780%	99.798%	99.820%	99.831%
Dec-21	99.834%	OFF	99.744%	99.757%	99.837%	99.864%
Jan-22	99.845%	OFF	99.765%	99.807%	99.788%	99.834%
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%

15. REMARKS

UNIT	MWLOSS	REASON	ACTUALSTARTDATE	ACTUALENDDATE
1	593	Loss of 220V AC supply to excitation panel	2022/03/02 12:11:00	2022/03/02 15:44:00
1	297	System Generated Ramp Event for Event id : 1663705	2022/03/02 15:44:00	2022/03/02 17:14:00
1	593	Boiler tube leak rimary reheater R/H side rear	2022/03/04 22:20:00	2022/03/08 04:21:00
1	297	System Generated Ramp Event for Event id : 1664724	2022/03/08 04:21:00	2022/03/08 07:21:00
1	593	Boiler tube leak repairs	2022/03/10 13:54:00	2022/03/15 07:16:00
1	297	System Generated Ramp Event for Event id : 1666537	2022/03/15 07:16:00	2022/03/15 10:16:00
1	200	AM:Correlation test	2022/03/17 21:48:00	2022/03/18 04:00:00
1	200	EF: High stack emissions.	2022/03/18 08:34:00	2022/03/18 18:43:00
1	100	High stack emissions.	2022/03/18 18:43:00	2022/03/18 19:41:00
1	200	High stack emissions.	2022/03/19 19:37:00	2022/03/20 00:13:00
1	200	AM: High ash hopper levels.	2022/03/22 08:23:00	2022/03/22 13:39:00
1	100	EF: High hopper levels	2022/03/22 13:39:00	2022/03/22 16:50:00
1	150	High stack emissions	2022/03/22 20:06:00	2022/03/23 00:02:00
1	150	high stack emissions	2022/03/24 19:52:00	2022/03/25 00:00:00
1	100	AM: RHO Precip. casing repairs.	2022/03/26 00:00:00	2022/03/26 21:05:00
1	100	RHIprecip casing repairs.	2022/03/27 00:03:00	2022/03/27 16:47:00
1	593	Internal inspection	2022/03/28 22:53:00	2022/03/31 23:59:59
2	98	EF: Correlation tests.	2022/03/10 00:00:00	2022/03/10 04:54:00
2	199	Correlation tests	2022/03/11 23:22:00	2022/03/12 04:19:00
2	100	LHO precip casing repairs.	2022/03/19 00:02:00	2022/03/19 21:35:00
2	100	AM: RHI precip casing repairs	2022/03/20 00:00:00	2022/03/20 17:03:00
2	593	Main turbine over speed trip test	2022/03/21 23:10:00	2022/03/22 06:59:00
2	297	System Generated Ramp Event for Event id : 1670626	2022/03/22 06:59:00	2022/03/22 08:29:00
3	118	Correlation test	2022/03/04 01:06:00	2022/03/04 05:13:00
3	216	Correlation tsets.	2022/03/10 23:37:00	2022/03/11 05:27:00
3	50	High stack emissions	2022/03/12 20:55:00	2022/03/12 21:56:00
3	113	High stack emissions.	2022/03/17 09:11:00	2022/03/17 20:15:00
3	216	High stack emissions	2022/03/17 20:15:00	2022/03/17 21:02:00
3	118	High stack emissions	2022/03/29 20:10:00	2022/03/29 23:20:00
4	593	Boiler tube leak repairs	2022/03/08 04:29:00	2022/03/12 06:30:00
4	593	Inspection Outage	2022/03/12 06:30:00	2022/03/14 04:35:00
4	297	System Generated Ramp Event for Event id : 1665643	2022/03/14 04:35:00	2022/03/14 07:35:00
4	46	EF: High stack emissions	2022/03/17 18:30:00	2022/03/17 20:04:00
4	80	High stack emissions.	2022/03/17 20:04:00	2022/03/18 00:03:00
4	50	SO3 Plant unavailable	2022/03/18 11:49:00	2022/03/18 12:15:00
4	90	AM: correlation tests	2022/03/23 21:53:00	2022/03/24 04:29:00
4	180	EF: Correlation tests.	2022/03/24 22:00:00	2022/03/25 04:46:00
5	593	G.O.	2022/03/26 02:20:00	2022/03/31 23:59:59
6	218	EF: Emission test	2022/03/02 00:05:00	2022/03/02 05:01:00
6	118	EF: High stack emissions	2022/03/02 10:24:00	2022/03/02 17:09:00
6	118	High stack emissions	2022/03/06 19:53:00	2022/03/07 00:05:00
6	593	Rotor Earth brush replacement	2022/03/16 22:50:00	2022/03/17 05:06:00
6	297	System Generated Ramp Event for Event id : 1668728	2022/03/17 05:06:00	2022/03/17 06:36:00

PM Exceedances		
U1.	The SO3 plant tripped this morning at 02:00. BPE advised that the Second stage converter air valve needs to be changed as the valve is not functioning on auto. RHO F6 reading 0kw; RHO F3 plate rapper did not rap; RHI F1 did not rap.	01-Mar
U1.	Unit tripped and boiler was off. Unit synchronized on 2022/03/02 @ 15:45, unit to be below the limit on Saturday 2022/03/05 @ 15:45 and ensure that the unit remain below the limit until 2022/03/06 @ 23:59	02-Mar
U1.	Unit tripped and boiler was off. Unit synchronized on 2022/03/02 @ 15:45, unit to be below the limit on Saturday 2022/03/05 @ 15:45 and ensure that the unit remain below the limit until 2022/03/06 @ 23:59	03-Mar
U1.	Unit Shut Down for Boiler Tube leak	04-Mar
U1.	Unit synchronized on 2022/03/08 @ 04:21, emissions need to be below the limit on 2022/03/11 @ 04:21 and remain below the limit on 2022/03/12 SO3 plant not in service to identify water ingress	08-Mar
U1.	Unit synchronized on 2022/03/08 @ 04:21, emissions need to be below the limit on 2022/03/11 @ 04:21 and remain below the limit on 2022/03/12	09-Mar
U1.	Unit shut down for Boiler tube leak	10-Mar
U1.	Unit synchronized on 2022/03/15 @ 07:16, Unit should be below the limit by 2022/03/18 @ 07:16 and should remain below the limit by 2022/03/19 until 23:59	15-Mar
U1.	Unit Light Up	16-Mar
U1.	Unit Light up Unit was below at 17/03/2022 @23:25	17-Mar
U1.	ESP Poor Performance	20-Mar
U1.	ESP Poor Performance and High Hopper Levels	21-Mar
U1.	ESP Poor Performance	23-Mar
U1.	RHO Casing Outage	26-Mar
U1.	RHI Casing Outage	27-Mar
U1.	Manual rapping prior to shutdown. Unit Shut doen 22:53	28-Mar
U2.	ESP Poor Performance LHO F2 still not in service, tripping on thermal overload; LHO F6 Comms fault,; LHI F7 tripped yesterday Correlation test was done Clean rapping occurred from 20:00-22:00	09-Mar
U2.	ESP Poor Performance and correlation tests	18-Mar
U2.	LHO Casing Repair	19-Mar
U2.	RHI casing repair	20-Mar
U2.	Unit not synchronised for turbine overspeed test. The boiler was still on load with draught plant in service. 150MW was used so as to not discount reporting hours	22-Mar
U2.	High Hopper Levels ESP Poor Performance	31-Mar

U3.	ESP Poor performance LHI F1 and RHO F2 backlogging in progress.	03-Mar
U3.	Clean rapping occurred from 20:00-22:00 last night	09-Mar
U3.	ESP Poor performance and Manual rapping LHI F5 comms fault, causing trips	10-Mar
U3.	ESP Poor Performance; Precips fields on RHI 5 and LHI 6 tripped	12-Mar
U3.	ESP Poor Performance; LHI F5, RHI F5 & RHO F6 comms fault	14-Mar
U3.	ESP Poor Performance; RHI F5 coms fault – fuse carrier, EMS reported no spares available	15-Mar
U3.	ESP Poor Performance	20-Mar
U3.	RHI F7 is rapping and continuously rapping ESP Poor Performance	22-Mar
U3.	ESP Poor Performance	23-Mar
U3.	ESP Poor Performance and manual rapping	24-Mar
U3.	ESP Poor Performance	26-Mar
U3.	High Hopper Levels	28-Mar
U3.	Dust handling plant is under positive pressure which is affecting the emissions ESP Poor Performance	30-Mar
U3.	ESP poor performance Manual Rapping	31-Mar
U4.	Three casings are poorly performing, LHO, LHI and RHO.	03-Mar
U4.	ESP Casing Outage There are several high hopper levels on this unit Alpha bucket conveyor replacement is still taking place	06-Mar
U4.	There are several high hopper levels on this unit Alpha bucket conveyor replacement is still taking place	07-Mar
U4.	Unit Shut Down for boiler tube leak There are 5 high hopper levels on the unit and backlogging is still in progress.	08-Mar
U4.	Unit synchronized on 2022/03/14 @ 04:35, Unit should be below the limit by 2022/03/17 @ 04:35 and should remain below the limit by 2022/03/18 until 23:59	14-Mar
U4.	Unit Light Up	15-Mar
U4.	Unit Light Up	16-Mar
U4.	SO3 Plant tripped due to air blower (11:00-11:52) SO3 plant tripped on blower a number of times	18-Mar
U4.	ESP Poor Performance and Manual Rapping So3 Plant challenges	19-Mar
U4.	SO3 plant is off due to VSD causing the blower to trip	21-Mar
U4.	ESP Poor Performance SO3 plant in service	22-Mar
U5.	SO3 plant. Cooling air valve on the second stage converter, the B air valve and the air control valve is not operating on auto and is operated manually; B heater starts locally RHI and RHO defects	01-Mar
U5.	Unit Shut Down for GO Outage @02:20	26-Mar
U6.	ESP Poor Performance and manual rapping LHI casing cycling	01-Mar
U6.	ESP Poor performance and Dust Handling Plant Challenges	17-Mar