

Mr. Chakane Sibaya Air Quality Officer Fezile Dabi District Municipality P.O Box 10 Sasolburg 1947 Date: 26 March 2021

Enquiries: W de Klerk Tel +27 16 457 5308

LRP03PLA000 _0229/20210304

Dear Mr. Sibaya

LETHABO POWER STATION EMISSION MONTHLY REPORT FOR January 2021

Please find attached Lethabo Power Station emission report for the month of January 2021.

Also attached are the Ambient Air Quality Monitoring Report, Complaints Register and the Fugitive Dust Fallout Monitoring Report for January 2021.

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

Yours sincerely

we yeld

Karabo Rakgolela GENERAL MANAGER

Generation Division (Cluster 1) Lethabo; Duvha; Grootvlei; Kusile & Matla Power Stations Viljoensdrif / Deneysville Free State Private Bag X415 Vereeniging 1930 SA Tel +27 16 457 5111 Fax +27 16 457 5712 www.eskom.co.za

Eskom Holdings SOC Ltd Reg No 2002/015527/30

Ð	Eskom	F	₹eport		Lethabo Power Station
Report name:	Lethabo Power December 2020	Station	Reference nu	mber:	LRP03PLA000 _0226/20210127 Report
	Emission Repor	·		po.	Environment
			Report Date:	ability.	
			Classification	:	Controlled Disclosure
Signature Compile P Parag System	es: ed by: Engineer	Verified by : W de Klerk Environmental	Officer	Reviewed	by: O ager
Date: 2	2021/02/16	Date: 2021-02-1	6	Date: 20	21-02-16
Reviewe C Govine	ed by: den	Reviewed by:	Ifu/	Reviewed	by: Fam
PE Mana	ager	C&I Manager		Environm	ental Manager
Date: 20	020/02/18	Date: 2021-02022		Date: 2021	-03-25
H Sewsi Enginee Date:	unker ering Manager 2021/03/29				
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Eskom

JANUARY 2021

LETHABO POWER STATION MONTHLY EMISSIONS REPORT

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



1. RAW MATERIALS AND PRODUCTS

Raw Materials and	Raw Material Type	Units	Maximum Permitted Consumption Rate	Consumption Rate Jan-2021
Products	Coal	Tons	2 000 000	1 244 670
	Fuel Oil	Tons	1 700	1421.67
	Product / By-Product Name	Units	Maximum Production Capacity Permitted	Production Rate Jan- 2021
Production Rates	Product / By-Product Name Energy	Units GWh	Maximum Production Capacity Permitted 2834.64	Production Rate Jan- 2021 1 862.19
Production Rates	Product / By-Product Name Energy Ash	Units GWh Tons	Maximum Production Capacity Permitted 2834.64 770 000	Production Rate Jan- 2021 1 862.19 472 352.4

2. ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.656 (Standard)	0.680
Ash Content	%	37.37 (Standard)	37.950

*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	РМ	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 Jan-2021
Unit 1	Electrostatic Precipitator (ESP)	99.62%
Unit 2	Electrostatic Precipitator (ESP)	99.69%
Unit 3	Electrostatic Precipitator (ESP)	99.72%
Unit 4	Electrostatic Precipitator (ESP)	99.83%
Unit 5	Electrostatic Precipitator (ESP)	99.81%
Unit 6	Electrostatic Precipitator (ESP)	99.74%

5. MONITOR RELIABILITY (%)

Associated Unit/Stack	РМ	SO₂	NO	CO₂
Unit 1	86.9	99.6	99.6	95.3
Unit 2	99.6	99.6	99.7	99.6
Unit 3	99.7	99.1	92.4	98.6
Unit 4	100.0	92.4	92.4	92.2
Unit 5	91.5	99.9	99.9	99.9
Unit 6	99.4	100.0	100.0	100.0

6. EMISSION PERFORMANCE

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO _x (tons)
Unit 1	64.6	811	339
Unit 2	268.5	4 272	1 568
Unit 3	154.0	2 145	1 010
Unit 4	156.5	4 475	2 140
Unit 5	162.3	3 119	1 458
Unit 6	223.6	4 101	2 020
SUM	1 029.5	18 921.9	8 535.3

Table 6.1: Monthly tonnages for the month of January 2021

Table 6.2: Operating days in compliance to PM AEL Limit - January 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contraven tion	Total Exceedance	Average PM (mg/Nm ³)
Unit 1	0	5	2	0	7	229.3
Unit 2	17	13	1	0	14	118.7
Unit 3	6	10	0	0	10	194.5
Unit 4	26	2	0	0	2	70.7
Unit 5	22	7	2	0	9	95.9
Unit 6	15	15	0	0	15	112.2
SUM	86	52	5	0	57	

Table 6.3: Operating days in compliance to SOx AEL Limit - January 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contraven tion	Total Exceedance	Average SOx (mg/Nm³)
Unit 1	9	0	0	0	0	2 114.7
Unit 2	31	0	0	0	0	1 888.0
Unit 3	20	0	0	0	0	1 885.3
Unit 4	29	0	0	0	0	1 960.2
Unit 5	31	0	0	0	0	1 830.3
Unit 6	31	0	0	0	0	1 987.9
SUM	151	0	0	0	0	

Associated Unit/Stack	Normal	Grace	Section 30	Contraven tion	Total Exceedance	Average NOx (mg/Nm ³)
Unit 1	9	0	0	0	0	827.3
Unit 2	31	0	0	0	0	691.3
Unit 3	20	0	0	0	0	868.1
Unit 4	29	0	0	0	0	936.0
Unit 5	31	0	0	0	0	857.7
Unit 6	30	0	0	1	1	979.6
SUM	150	0	0	1	1	

Table 6.4: Operating days in compliance to NOx AEL Limit - January 2021

Table 6.5: Legend Description

Condition	Colour	Description
Normal		Emissions below Emission Limit Value (ELV)
Grace		Emissions above the ELV during grace period
Section 30		Emissions above ELV during a NEMA S30 incident
Contravention		Emissions above ELV but outside grace or S30 incident conditions





































7. SHUT DOWN AND LIGHT UP INFORMATION

Unit No.1	Boiler ti	ube leak.	Boiler t	ube leak.	GO (Dutage	
Breaker Open (BO)			11:50 PM	2021/01/05	4:10 AM	2021/01/12	
Draught Group (DG) Shut Down (SD)			12:50 PM	2021/01/06	7:50 AM	2021/01/13	
BO to DG SD (duration)		DD:HH:MM	00:13:00	DD:HH:MM	01:03:40	DD:HH:MM	
Fires in time	3:30 AM	2021/01/03	5:30 PM	2021/01/07			
Synch. to Grid (or BC)	6:07 AM	2021/01/03	7:59 PM	2021/01/07			
Fires in to BC (duration)	00:02:37	DD:HH:MM	00:02:29	DD:HH:MM		DD:HH:MM	
Emissions below limit from BC (end date)	not > limit	not > limit	not > limit	not > limit			
Emissions below limit from BC (duration)	n/a	DD:HH:MM	n/a	DD:HH:MM		DD:HH:MM	

Unit No.2				
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.3	System Generated Slip Event linked to PCLF Event : 1488388 (GO)		Main turbine physical over speed trip test		HP inlet case delta T's.		Boiler tube leak repairs.	
Breaker Open (BO)			2:25 AM	2021/01/16	10:45 AM	2021/01/20	12:00 AM	2021/01/23
Draught Group (DG) Shut Down (SD)			DG did not trip or SD	DG did not trip or SD	12:10 PM	2021/01/20	10:00 PM	2021/01/23
BO to DG SD (duration)		DD:HH:MM	n/a	DD:HH:MM	00:01:25	DD:HH:MM	00:22:00	DD:HH:MM
Fires in time	3:20 PM	2021/01/07			12:30 PM	2021/01/20	4:20 AM	2021/01/25
Synch. to Grid (or BC)	4:01 AM	2021/01/09			2:43 PM	2021/01/20	8:17 AM	2021/01/25
Fires in to BC (duration)	01:12:41	DD:HH:MM		DD:HH:MM	00:02:13	DD:HH:MM	00:03:57	DD:HH:MM
Emissions below limit from BC (end date)	12:00 AM	2021/01/10			6:00 AM	2021/01/22	12:00 AM	2021/01/26
Emissions below limit from BC (duration)	00:19:59	DD:HH:MM		DD:HH:MM	01:15:17	DD:HH:MM	00:15:43	DD:HH:MM

Unit No. 3(continuted)	Boiler drui	n level low.	Boiler t repairs	tube leak s -Unit 3		
Breaker Open (BO)	10:38 AM	2021/01/25	9:51 AM	2021/01/26		
Draught Group (DG) Shut Down (SD)	11:40 AM	2021/01/25	10:00 PM	2021/01/26		
BO to DG SD (duration)	00:01:02	DD:HH:MM	00:12:09	DD:HH:MM		
Fires in time	11:55 AM	2021/01/25	10:55 PM	2021/01/27		
Synch. to Grid (or BC)	12:59 PM	2021/01/25	1:25 AM	2021/01/28		
Fires in to BC (duration)	00:01:04	DD:HH:MM	00:02:30	DD:HH:MM		
Emissions below limit from BC (end date)	12:00 AM	2021/01/26	not > limit	not > limit		
Emissions below limit from BC (duration)	00:11:01	DD:HH:MM	n/a	DD:HH:MM		

Unit No.4	Boiler tube leak						
Breaker Open (BO)							
Draught Group (DG) Shut Down (SD)							
BO to DG SD (duration)		DD:HH:MM					
Fires in time	3:20 PM	2021/01/02					
Synch. to Grid (or BC)	12:55 AM	2021/01/03					
Fires in to BC (duration)	00:09:35	DD:HH:MM					
Emissions below limit from BC (end date)	12:00 AM	2021/01/05					
Emissions below limit from BC (duration)	01:23:05	DD:HH:MM					

Unit No.5				
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.6				
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)				

7.2: Point Source emissions released during start-up (fires-in) and Shut-down (SD) for the month of January 2021 in mg/Nm³

8. MAINTENANCE

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

Unit 2			
Beginning of	2021/01/23 01:16:00		
Reason for Maintenance	RHI precip casing repairs.		
End (Time):	2021/01/24 00:32:00		
Duration	23:16:00		

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

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

Unit 5			
Beginning of	2021/01/17 00:00		
Reason for Maintenance	LHO precip casing repairs.		
End (Time):	2021/01/18 00:12		
Duration	24:12:00		

Unit 6			
Beginning of	2021/01/18 22:49:00		
Reason for Maintenance			
	RHI precip casing repairs.		
End (Time):	2021/01/19 20:55:00		
Duration	22:06:00		

9. GENERAL

Unit 1:

The exceedances from the 08/01/2021 to 12/01/2021 was not interpreted as a Section 30 event at the time. The Emissions were below in the 72 Hour Grace Period and the Average from 19:54 to 23:59 (after the grace period), was 95mg/Nm3 for the day. However, after evaluation of the practice note (Atmospheric Emission Licence Practice Note, Reference Number: ENV14-R065) and consultation it was determined that it should have been seen as a Section 30. This has subsequently been reported as a Section 30 with the relevant permission from the Department of Environment, Fisheries and Forestries.

Unit 2:

The exceedances from the 29/12/2020 to 01/01/2021 was not interpreted as a Section 30 event at the time. The Emissions were below in the 72 Hour Grace Period and the Average from 08:45 to 23:59 (after the grace period), was 85mg/Nm3 for the day. However, after evaluation of the practice note (Atmospheric Emission Licence Practice Note, Reference Number: ENV14-R065) and consultation it was determined that it should have been seen as a Section 30. This has subsequently been reported as a Section 30 with the relevant permission from the Department of Environment, Fisheries and Forestries.

Unit 3:

Section 30 was reported for extended start up condition, Unit synchronized on 28/01/2021 @ 01:24, needed to be below the limit by 31/01/2021 @ 01:24. On 31/01/2021 the SO3 plant was shut down due to a converter leak, this coupled with start up conditions contributed to the Section 30 being incurred.

Unit 4:

The gaseous monitors faulted, the trends reflect that the monitor pressure went to full-scale from the 29/01/2021 at around 19h21. The monitor was corrected on the 02/02/2021 at around 23h09 after C&I Maintenance replaced a faulty pressure transducer. The Gaseous data for this period on Unit 4 was removed.

Unit 5:

It is noted that the Moisture curve was incorrect and inflated during the time of the correlation. It was determined that an average of 6.4% (H2O) be used from the point of curve expiry until the test is redone. The test has been conducted and awaiting the report with the new curve.

Unit 5:

Section 30 was reported for extended start up condition, Unit synchronized on 30/12/2020 @ 08:06, needed to be below the limit by 02/01/2021 @ 08:06. On 31/12/2020 the SO3 plant was shut down due to air pipe leaking. In addition the monitors tripped between 31 Dec to 3 Jan (Data removed accordingly), this yielded a daily average of below 100mg/Nm3 for the 01/01/2021-02/01/2021. Even though this was calculated to be below the limit, it is given that without an SO3 plant in service and start-up conditions it was unlikely that those days were not in true exceedance. For this reason a Section 30 was reported.

Unit 6:

NOx Exceedance on 31/01/2021 due there being no NOx abatement technology in place. The contributing factor is runinng with two top mills in service

10. S30 INCIDENT OR LEGAL CONTRAVENTION REGISTER

Unit no	Incident Start Date	Incident End Date	Incident Cause	Remedial action	S30 initial notification sent	Date S30 investigation report sent	Date DEA Acknowledg- ment	Date DEA Acceptabe	Comments / Reference No.
5	02/01/20 21	04/01/20 21	SO3 Plant sluphur leak due to gasket blown	Gaskets to be included in checksheets	04/01/2021	15/01/2021	None		
3	31/01/20 21	01/02/20 21	pipe expansion joint damage resulting in unpredicted equipment failure	Perform borescope inspection on both burner and converter expansion joints	01/02/2021	11/02/2021	None		
2	29/12/20 20	01/01/20 21	Sulphur supply line steam jacket leak	Ensure dye pen NDT tests form part of Scope for all sulphur supply line steam jacked	09/03/2021	23/03/2021	None		Late S30 reported with permission from relevant Department of Environment, Fisheries and Forestries.
1	08/01/20 21	12/01/20 21	SO3 plant combustion chamber flooded with sulphur	Ensure all plant personell receive on job training on Sulphur plant, regarding frozen PID controllers	09/03/2021	23/03/2021	None		Late S30 reported with permission from relevant Department of Environment, Fisheries and Forestries.

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

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-20	0.56	0.46	0.67	0.29	0.27	OFF	0.47
Mar-20	0.37	0.58	0.72	0.26	0.33	OFF	0.45
Apr-20	0.54	0.36	0.69	0.21	0.18	0.64	0.41
May-20	0.83	0.34	0.54	0.20	0.20	0.42	0.38
Jun-20	0.23	0.26	0.29	0.18	0.20	0.48	0.27
Jul-20	0.40	0.49	0.36	0.22	0.21	0.45	0.35
Aug-20	0.31	0.30	0.49	0.26	0.35	0.43	0.35
Sep-20	0.24	0.43	OFF	0.25	0.18	0.32	0.28
Oct-20	0.32	0.54	OFF	0.26	0.36	0.31	0.35
Nov-20	0.42	0.49	OFF	0.40	0.31	0.41	0.41
Dec-20	0.47	0.82	OFF	0.69	0.43	0.60	0.63
Jan-21	0.75	0.66	0.68	0.39	0.37	0.54	0.52

12. DAILY EMISSIONS FIGURES

	That Bust concentration (ing/Min)										
Date	U1	U2	U3	U4	U5	U6	Limit				
01-Jan	OFF	147	OFF	OFF	96	96	100				
02-Jan	OFF	148	OFF	OFF	96	148	100				
03-Jan	OFF	93	OFF	OFF	156	84	100				
04-Jan	256	181	OFF	245	91	142	100				
05-Jan	206	98	OFF	94	156	153	100				
06-Jan	OFF	183	OFF	78	47	78	100				
07-Jan	OFF	99	OFF	58	86	102	100				
08-Jan	328	205	OFF	57	92	93	100				
09-Jan	346	81	OFF	62	95	110	100				
10-Jan	161	123	OFF	53	72	105	100				
11-Jan	147	91	OFF	53	59	OFF	100				
12-Jan	160	186	OFF	66	81	91	100				
13-Jan	OFF	88	OFF	66	71	144	100				
14-Jan	OFF	100	OFF	57	80	95	100				
15-Jan	OFF	155	OFF	46	78	109	100				
16-Jan	OFF	104	OFF	67	94	105	100				
17-Jan	OFF	87	OFF	56	162	94	100				
18-Jan	OFF	99	OFF	52	77	119	100				
19-Jan	OFF	79	OFF	46	73	226	100				
20-Jan	OFF	106	OFF	59	82	96	100				
21-Jan	OFF	100	OFF	85	92	95	100				
22-Jan	OFF	142	OFF	108	139	131	100				
23-Jan	OFF	267	OFF	80	111	93	100				
24-Jan	OFF	65	OFF	50	86	84	100				
25-Jan	OFF	85	OFF	45	92	95	100				
26-Jan	OFF	132	OFF	56	85	113	100				
27-Jan	OFF	94	OFF	59	114	96	100				
28-Jan	OFF	86	OFF	71	94	136	100				
29-Jan	OFF	85	OFF	79	110	150	100				
30-Jan	OFF	102	OFF	65	113	91	100				
31-Jan	OFF	67	OFF	68	92	91	100				

Final Dust Concentration (mg/Nm³)

Date	U1	U2	U3	U4	U5	U6	Limit			
01-Jan	OFF	1859	OFF	OFF	1715	1887	3500			
02-Jan	OFF	1936	OFF	OFF	1743	2005	3500			
03-Jan	2135	1926	OFF	1937	1784	2004	3500			
04-Jan	1980	1934	OFF	1767	1717	1891	3500			
05-Jan	2023	1950	OFF	1797	1797	1929	3500			
06-Jan	OFF	1949	OFF	1831	1804	2005	3500			
07-Jan	2451	1995	OFF	1878	1857	2044	3500			
08-Jan	2131	1889	OFF	1896	1844	1933	3500			
09-Jan	2097	1973	OFF	1807	1859	1940	3500			
10-Jan	2122	2005	OFF	1863	1820	1951	3500			
11-Jan	2071	1988	OFF	1845	1783	1902	3500			
12-Jan	2023	1846	OFF	1882	1873	2003	3500			
13-Jan	OFF	1613	OFF	1914	1887	2031	3500			
14-Jan	OFF	1590	OFF	1936	1825	1999	3500			
15-Jan	OFF	1567	OFF	2041	1780	1978	3500			
16-Jan	OFF	1521	OFF	2001	1837	2005	3500			
17-Jan	OFF	1564	OFF	2032	1825	1903	3500			
18-Jan	OFF	1586	OFF	1947	1757	1865	3500			
19-Jan	OFF	1489	OFF	1943	1697	1874	3500			
20-Jan	OFF	1745	OFF	2014	1856	1900	3500			
21-Jan	OFF	2036	OFF	2060	1864	1972	3500			
22-Jan	OFF	2015	OFF	2019	1830	2007	3500			
23-Jan	OFF	2044	OFF	2088	1906	2021	3500			
24-Jan	OFF	2018	OFF	2025	1905	2033	3500			
25-Jan	OFF	1998	OFF	2018	1792	2021	3500			
26-Jan	OFF	2033	OFF	2065	1876	2045	3500			
27-Jan	OFF	2103	OFF	2142	1917	2077	3500			
28-Jan	OFF	2073	OFF	2083	1872	2049	3500			
29-Jan	OFF	2092	OFF	2097	1897	2106	3500			
30-Jan	OFF	2110	OFF	1960	1927	2149	3500			
31-Jan	OFF	2082	OFF	1960	1891	2098	3500			

Final SOx Concentration (mg/Nm³)

Date	U1	U2	U3	U4	U5	U6	Limit				
01-Jan	OFF	666	OFF	OFF	870	986	1100				
02-Jan	OFF	699	OFF	OFF	923	933	1100				
03-Jan	834	668	OFF	772	900	1004	1100				
04-Jan	896	731	OFF	946	895	977	1100				
05-Jan	943	699	OFF	951	944	996	1100				
06-Jan	OFF	743	OFF	934	922	975	1100				
07-Jan	559	651	OFF	1027	880	957	1100				
08-Jan	835	703	OFF	1002	868	974	1100				
09-Jan	959	670	OFF	1100	878	1001	1100				
10-Jan	740	749	OFF	1021	822	945	1100				
11-Jan	852	731	OFF	1028	826	961	1100				
12-Jan	827	753	OFF	1020	857	952	1100				
13-Jan	OFF	625	OFF	1027	776	987	1100				
14-Jan	OFF	633	OFF	973	788	921	1100				
15-Jan	OFF	639	OFF	977	779	941	1100				
16-Jan	OFF	613	OFF	959	864	938	1100				
17-Jan	OFF	558	OFF	872	804	989	1100				
18-Jan	OFF	597	OFF	927	818	1039	1100				
19-Jan	OFF	535	OFF	895	812	911	1100				
20-Jan	OFF	661	OFF	897	777	941	1100				
21-Jan	OFF	710	OFF	881	808	991	1100				
22-Jan	OFF	708	OFF	876	858	981	1100				
23-Jan	OFF	677	OFF	880	861	892	1100				
24-Jan	OFF	706	OFF	839	864	969	1100				
25-Jan	OFF	754	OFF	939	864	994	1100				
26-Jan	OFF	780	OFF	877	834	920	1100				
27-Jan	OFF	830	OFF	885	826	946	1100				
28-Jan	OFF	712	OFF	867	966	1054	1100				
29-Jan	OFF	757	OFF	900	961	1093	1100				
30-Jan	OFF	756	OFF	936	912	1097	1100				
31-Jan	OFF	715	OFF	936	832	1102	1100				

Final NOx Concentration (mg/Nm³)

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-20	94.17%	3	100.00%	0	93.33%	4	100.00%	0	100.00%	0	0.00%	OFF LOAD
Mar-20	99.19%	1	98.39%	2	97.58%	3	100.00%	0	100.00%	0	0.00%	OFF LOAD
Apr-20	98.33%	2	95.00%	6	100.00%	0	100.00%	0	100.00%	0	100.00%	0%
May-20	98.39%	2	98.39%	2	98.39%	2	100.00%	0	100.00%	0	100.00%	0
Jun-20	98.33%	2	100.00%	0	100.00%	0	100.00%	0	100.00%	0	100.00%	0
Jul-20	98.39%	2	98.39%	2	99.19%	1	100.00%	0	100.00%	0	100.00%	0
Aug-20	100.00%	0	100.00%	0	98.39%	2	100.00%	0	98.39%	2	100.00%	0
Sep-20	98.33%	2	98.33%	2	OFF LOAD	0	100.00%	0	100.00%	0	100.00%	0
Oct-20	99.19%	1	99.19%	1	OFF LOAD	0	100.00%	0	99.19%	1	100.00%	0
Nov-20	97.50%	3	98.33%	2	OFF LOAD	0	100.00%	0	100.00%	0	99.17%	1
Dec-20	98.39%	2	97.58%	3	OFF LOAD	0	100.00%	0	99.19%	1	100.00%	0
Jan-21	100.00%	0	99.19%	1	100.00%	0	100.00%	0	99.19%	1	99.19%	1

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
Feb-20	100.00%	0	100.00%	0	93.33%	1	100.00%	0	83.33%	4	OFF LOAD	0
Mar-20	100.00%	0	93.55%	2	87.10%	4	100.00%	0	64.52%	11	OFF LOAD	0
Apr-20	100.00%	0	100.00%	0	100.00%	0	100.00%	0	100.00%	0	90.00%	3
May-20	93.55%	2	100.00%	0	100.00%	0	100.00%	0	100.00%	0	100.00%	0
Jun-20	100.00%	0	100.00%	0	96.67%	1	100.00%	0	100.00%	0	100.00%	0
Jul-20	100.00%	0	96.77%	1	100.00%	0	100.00%	0	100.00%	0	100.00%	0
Aug-20	93.55%	2	100.00%	0	100.00%	0	100.00%	0	77.42%	7	100.00%	0
Sep-20	100.00%	0	93.33%	2	OFF LOAD	0	100.00%	0	100.00%	0	100.00%	0
Oct-20	100.00%	0	100.00%	0	OFF LOAD	0	100.00%	0	100.00%	0	100.00%	0
Nov-20	100.00%	0	96.67%	1	OFF LOAD	0	100.00%	0	100.00%	0	100.00%	0
Dec-20	100.00%	0	100.00%	0	OFF LOAD	0	100.00%	0	93.55%	2	100.00%	0
Jan-21	57.14%	3	100.00%	0	83.87%	5	100.00%	0	96.77%	1	100.00%	0

Particulate Emission Monitors

Availability												
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6						
Feb-20	75.98%	99.43%	98.42%	98.91%	99.68%	OFF						
Mar-20	86.67%	96.97%	96.20%	99.44%	96.84%	OFF						
Apr-20	91.26%	96.53%	98.53%	98.66%	96.22%	95.18%						
May-20	88.89%	99.19%	99.19%	100.00%	99.73%	98.25%						
Jun-20	89.86%	99.20%	99.17%	98.75%	97.78%	90.56%						
Jul-20	92.47%	98.48%	99.33%	99.35%	100.00%	99.19%						
Aug-20	100.00%	100.00%	99.85%	100.00%	97.99%	100.00%						
Sep-20	94.71%	99.63%	OFF	100.00%	100.00%	100.00%						
Oct-20	97.98%	99.19%	OFF	99.33%	99.19%	100.00%						
Nov-20	94.04%	94.58%	OFF	97.17%	97.28%	99.69%						
Dec-20	98.99%	99.01%	OFF	98.92%	93.67%	99.19%						
Jan-21	86.90%	99.60%	99.74%	100.00%	91.53%	99.44%						

Gaseous Emission Monitors

	Availability											
	Un	it 1	Unit 2		Un	nit 3	Ui	nit 4	Unit 5		Unit 6	
Month	SOx	NOx	SO _x	NOx	SO _x	NOx	SO _x	NO _x	SO _x	NOx	SO _x	NOx
Feb-20	99.84%	99.84%	96.55%	98.71%	98.85%	98.71%	99.95%	99.49%	85.71%	85.71%	OFF	OFF
Mar-20	99.73%	99.73%	98.80%	98.80%	99.68%	99.68%	99.12%	98.45%	98.79%	98.92%	OFF	OFF
Apr-20	100.00%	99.86%	100.00%	100.00%	96.68%	96.68%	99.83%	99.97%	99.96%	99.96%	99.94%	99.94%
May-20	94.74%	94.74%	100.00%	100.00%	99.87%	100.00%	99.84%	99.84%	93.47%	93.61%	90.89%	90.89%
Jun-20	99.44%	99.44%	99.33%	99.33%	99.33%	99.33%	100.00%	100.00%	100.00%	100.00%	93.30%	93.10%
Jul-20	99.73%	99.73%	99.07%	99.07%	99.73%	99.87%	98.54%	98.85%	99.60%	99.87%	99.86%	99.87%
Aug-20	99.91%	99.91%	100.00%	100.00%	99.85%	99.85%	100.00%	100.00%	100.00%	100.00%	96.67%	96.53%
Sep-20	100.00%	100.00%	99.86%	99.86%	OFF	OFF	100.00%	100.00%	100.00%	100.00%	99.77%	99.77%
Oct-20	99.87%	100.00%	99.87%	99.60%	OFF	OFF	99.46%	99.46%	99.46%	99.46%	99.46%	99.46%
Nov-20	97.66%	97.66%	97.64%	97.78%	OFF	OFF	94.14%	94.14%	94.55%	94.55%	94.64%	94.64%
Dec-20	99.17%	99.17%	98.89%	99.05%	OFF	OFF	99.22%	99.22%	95.32%	95.32%	99.33%	99.33%
Jan-21	99.56%	99.56%	99.60%	99.73%	99%	99%	92.39%	92.39%	99.87%	99.87%	100.00%	100.00%

Oxygen Monitor Availabilty											
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6					
Feb-20	99.84%	99.07%	98.85%	99.95%	67.86%	OFF					
Mar-20	100.00%	99.80%	97.24%	99.95%	99.19%	OFF					
Apr-20	51.08%	100.00%	97.35%	99.97%	99.96%	99.94%					
May-20	89.69%	100.00%	100.00%	99.84%	100.00%	99.95%					
Jun-20	99.31%	99.92%	99.33%	98.85%	100.00%	100.00%					
Jul-20	99.87%	99.30%	99.87%	99.02%	100.00%	99.87%					
Aug-20	99.86%	99.92%	99.85%	100.00%	100.00%	96.67%					
Sep-20	99.68%	99.86%	OFF	100.00%	100.00%	98.97%					
Oct-20	99.73%	99.87%	OFF	99.33%	99.33%	99.46%					
Nov-20	99.45%	99.72%	OFF	93.97%	94.55%	94.64%					
Dec-20	99.31%	98.85%	OFF	99.22%	95.32%	99.33%					
Jan-21	99.56%	99.06%	99.54%	100.00%	99.87%	99.87%					

14. EFFICIENCY

ESP Efficiency (%)											
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6					
Feb-20	99.998%	99.999%	99.997%	99.999%	99.998%	OFF					
Mar-20	99.851%	99.749%	99.698%	99.892%	99.851%	OFF					
Apr-20	99.777%	99.838%	99.695%	99.909%	99.914%	99.707%					
May-20	99.652%	99.847%	99.757%	99.912%	99.909%	99.805%					
Jun-20	99.907%	99.883%	99.874%	99.922%	99.913%	99.783%					
Jul-20	99.835%	99.777%	99.837%	99.905%	99.903%	99.788%					
Aug-20	99.875%	99.872%	99.791%	99.892%	99.845%	99.809%					
Sep-20	99.892%	99.793%	OFF	99.882%	99.913%	99.848%					
Oct-20	99.860%	99.742%	OFF	99.876%	99.828%	99.850%					
Nov-20	99.835%	99.792%	OFF	99.833%	99.867%	99.822%					
Dec-20	99.817%	99.651%	OFF	99.713%	99.813%	99.739%					
Jan-21	99.622%	99.689%	99.717%	99.832%	99.827%	99.745%					

15. REMARKS

ADDENDUM TO MONTHLY EMISSIONS REPORT

UNIT	MWLOSS	REASON	ACTUALSTARTDATE	ACTUALENDDATE
1	593	AM: Boiler tube leak.	2021/01/01 00:00:00	2021/01/03 06:07:00
1	297	System Generated Ramp Event for Event id : 1512211	2021/01/03 06:07:00	2021/01/03 09:07:00
1	593	AM: Boiler tube leak.	2021/01/05 23:45:00	2021/01/07 19:59:00
1	297	System Generated Ramp Event for Event id : 1513658	2021/01/07 19:59:00	2021/01/07 22:59:00
1	180	EF: High stack emissions	2021/01/10 00:12:00	2021/01/11 09:23:00
1	39	EF: High stack emissions.	2021/01/11 09:23:00	2021/01/12 04:04:00
1	593	GO	2021/01/12 04:04:00	2021/01/31 23:59:59
2	187	EF: High stack emissions	2021/01/01 01:25:00	2021/01/02 02:30:00
2	180	EF: High stack emissions	2021/01/03 21:42:00	2021/01/04 05:03:00
2	82	High stack emissions	2021/01/05 12:39:00	2021/01/05 14:21:00
2	187	EF: High stack emissions.	2021/01/05 14:21:00	2021/01/06 05:45:00
2	80	EF: High stack emissions	2021/01/07 16:00:00	2021/01/08 02:19:00
2	80	EF:High stack emissions.	2021/01/09 09:53:00	2021/01/09 12:52:00
2	177	EF:High stack emissions.	2021/01/09 12:52:00	2021/01/09 20:16:00
2	77	EF: High stack emissions	2021/01/09 20:16:00	2021/01/09 23:57:00
2	31	EF: High stack emissions	2021/01/13 14:14:00	2021/01/13 17:07:00
2	78	EF: High stack emissions.	2021/01/16 20:39:00	2021/01/17 02:17:00
2	175	EF: High stack emissions	2021/01/21 20:46:00	2021/01/22 00:37:00
2	80	RHI precip casing repairs.	2021/01/23 01:16:00	2021/01/24 00:32:00
2	100	EF: High stack emissions.	2021/01/31 00:22:00	2021/01/31 02:01:00
3	593	G/O	2021/01/01 00:00:00	2021/01/05 03:37:00
3	593	System Generated Slip Event linked to PCLF Event : 1488388	2021/01/05 03:37:00	2021/01/09 04:01:00
3	297	System Generated Ramp Event for Event id : 1488388	2021/01/09 04:01:00	2021/01/09 07:01:00
3	97	EF: High stack emssions	2021/01/12 13:37:00	2021/01/12 15:41:00
3	198	EF: High stack emissions	2021/01/12 15:41:00	2021/01/12 19:24:00
3	95	High stack emissions	2021/01/12 19:24:00	2021/01/13 02:00:00
3	593	Main turbine physical over speed trip test	2021/01/16 02:17:00	2021/01/16 08:09:00
3	297	System Generated Ramp Event for Event id : 1516829	2021/01/16 08:09:00	2021/01/16 09:39:00
3	149	EF: High stack emissions	2021/01/19 08:54:00	2021/01/19 17:56:00
3	149	EF:High stack emissions.	2021/01/19 20:35:00	2021/01/19 21:23:00
3	176	EF:High stack emissions.	2021/01/19 21:23:00	2021/01/20 03:25:00
3	593	HP inlet case delta T's.	2021/01/20 10:39:00	2021/01/20 14:43:00
3	297	System Generated Ramp Event for Event id : 1518036	2021/01/20 14:43:00	2021/01/20 16:13:00
3	593	Boiler tube leak repairs.	2021/01/22 23:52:00	2021/01/25 08:17:00
3	361	System Generated Ramp Event for Event id : 1518774 (Recalculated)	2021/01/25 08:17:00	2021/01/25 10:38:00
3	593	Boiler drum level low.	2021/01/25 10:38:00	2021/01/25 12:59:00
3	297	System Generated Ramp Event for Event id : 1519559	2021/01/25 12:59:00	2021/01/25 14:29:00
3	593	AM: Boiler tube leak repairs.	2021/01/26 09:51:00	2021/01/28 01:25:00
3	297	System Generated Ramp Event for Event id : 1519876	2021/01/28 01:25:00	2021/01/28 04:25:00
3	216	High stack emissions	2021/01/31 01:12:00	2021/01/31 06:12:00
3	118	EF: High stack emssions	2021/01/31 11:50:00	2021/01/31 14:20:00
3	218	EF: High stack emssions	2021/01/31 14:20:00	2021/01/31 23:59:59

4	593	Boiler tube leak	2021/01/01 00:00:00	2021/01/03 00:55:00
4	297	System Generated Ramp Event for Event id : 1511441	2021/01/03 00:55:00	2021/01/03 03:55:00
5	178	EF: High stack emissions	2021/01/01 01:16:00	2021/01/04 05:11:00
5	80	EF: High stack emission	2021/01/04 05:11:00	2021/01/04 06:27:00
5	179	EF: High stack emission	2021/01/04 12:26:00	2021/01/04 16:20:00
5	80	EF: High stack emssions	2021/01/04 16:20:00	2021/01/05 03:38:00
5	80	EF:High stack emissions.	2021/01/09 13:02:00	2021/01/09 17:06:00
5	80	LHO precip casing repairs.	2021/01/17 00:00:00	2021/01/18 00:12:00
5	80	EF: High stack emissions.	2021/01/23 21:36:00	2021/01/24 00:18:00
5	150	EF: High stack emissions.	2021/01/24 00:18:00	2021/01/24 05:49:00
5	80	EF: High stack emissions.	2021/01/24 20:09:00	2021/01/24 22:49:00
5	60	AM: High hopper levels	2021/01/31 14:24:00	2021/01/31 16:52:00
5	60	EF:High stack emissions.	2021/01/31 20:20:00	2021/01/31 23:59:59
6	218	EF:High stack emissions	2021/01/01 01:25:00	2021/01/01 06:05:00
6	119	High stack emissions	2021/01/05 12:24:00	2021/01/05 17:09:00
6	217	EF: High stack emissions	2021/01/05 23:53:00	2021/01/06 05:19:00
6	117	EF: High stack emissions	2021/01/06 05:19:00	2021/01/06 07:37:00
6	61	Ef: High stack emissions	2021/01/06 07:39:00	2021/01/06 17:52:00
6	220	EF: High stack emissions	2021/01/08 19:40:00	2021/01/09 00:57:00
6	0	AM: AVR module replacement	2021/01/10 22:41:00	2021/01/11 05:02:00
6	297	System Generated Ramp Event for Event id : 1515228	2021/01/11 05:02:00	2021/01/11 06:32:00
6	122	High stack emissions	2021/01/17 20:29:00	2021/01/18 02:11:00
6	118	RHI precip casing repairs.	2021/01/18 22:49:00	2021/01/19 20:55:00
6	120	EF: High stack emissions	2021/01/20 20:36:00	2021/01/21 00:05:00
6	50	EF:High stack emissions.	2021/01/27 21:01:00	2021/01/27 22:23:00
6	100	EF:High stack emissions.	2021/01/27 22:23:00	2021/01/28 00:12:00
6	118	AM: High stack emissions.	2021/01/30 00:35:00	2021/01/30 04:47:00
6	118	EF: High stack emssions	2021/01/30 13:19:00	2021/01/30 16:37:00

	PM Exceedances			
U1.	Unit Light Up	04-Jan		
U1.	• SO3 plant: Sulphur build up in the combustion chamber, suspected that there is still Sulphur to be burnt off	05-Jan		
U1.	Unit Shut Down for Boiler Tube Leak	06-Jan		
U1.	• Unit synchronized on 07/01 @ 19:54.	07-Jan		
U1.	 Unit synchronized on 07/01 @ 19:54. Emissions to be below on 10/01 @ 19:54. SO3 plant: Sulphur build up in the combustion chamber, suspected that there is still Sulphur to be burnt off 	08-Jan		
U1.	 Unit synchronized on 07/01 @ 19:54. Emissions to be below on 10/01 @ 19:54. SO3 plant: Sulphur build up in the combustion chamber, suspected that there is still Sulphur to be burnt off 	09-Jan		
U1.	Sulphur Indications showed signs of being burnt out, permission was given to start dosing again. Emissions was below 100mg/Nm3 below 19:54 and the day average between 19:54-00:00 was 95mg/Nm3. (Exceedance noted, reported as Section 30)	10-Jan		
U1.	ESP poor perfomance	11-Jan		
U1.	Unit Shut Down for Mini GO Outage	12-Jan		
U2.	Unit Light Up	01-Jan		
112	The average emissions for Unit 2 on 01/01 08:45 – 23:59 was below 100mg/Nm3. (Exceedance noted, reported as Section 30 after re-evaluation) ESP Poor Performance	02-Jan		
112	ESP Poor Perfomance	04-Jan		
112	SO3 plant tripped twice yesterday, on combustion high temperature	06-Jan		
U2.	ESP Poor Performance SO3 plant tripped 16:00-16:30 ESP Manual Rapping done 20:50	08-Jan		
U2.	unit is struggling to meet limit at full load. • Three of the casings are under performing. The casing that had been washed is performing well.	10-Jan		
U2.	ESP poor performance	12-Jan		
U2.	RHO and LHI casing performing Poorly manual rapping on all four casing were carried out. 20:00 - 21:00 LHI and RHI casings 21:00 - 22:00 LHO and RHO casings	15-Jan		

	ESP Poor Performance	16-Jan
U2.	Most of the field we reported to be arcing and sparking	
	Emissions increased during the peak 17:00, total airflow increase during this time	
	ESP fields came in and out of service during this time.	20-Jan
U2.	Poor ESP Performance	
U2.	Poor ESP Performance and manual rapping	22-Jan
U2.	RHI casing rapping	23-Jan
U2.	ESP Poor Performance and manual rapping	26-Jan
U2.	ESP Poor Performance	30-Jan
U3.	• Unit synchronized on 09/01 @ 04:01. Emissions to be below on 12/01 @ 04:01.	09-Jan
U3.	• Unit synchronized on 09/01 @ 04:01. Emissions to be below on 12/01 @ 04:01.	10-Jan
U3.	• Unit synchronized on 09/01 @ 04:01. Emissions to be below on 12/01 @ 04:01.	11-Jan
	SO3 plant injection nozzle leak, to be monitored closely. Need to plan opportunity to fix leak, as it is causing a safety risk.	13-Jan
U3.	ESP Transformers not consistent leading to poor performance.	
	SO3 plant injection nozzle leak, to be monitored closely. Need to plan opportunity to fix leak, as it is causing a safety risk.	
	ESP Transformers not consistent leading to poor performance.	14-Jan
U3.	• Two inspection doors was open on the primary air heater side, this will affect the emissions.	
U3.	 Unit Synchronised on 16/01 @ 08:09, need to be below on 19/01 @ 08:09 SO3 plant leak: SO3 plant is still cooling and off line 	16-Jan
U3.	Light up, SO3 plant off	17-Jan
U3.	Light up, SO3 plant off	18-Jan
	There is a discrepency between our daily report and the offical tool. The daily report yielded a day average of 256mg/Nm3.	20-Jan
U3.	This will be investigated	
	There is a discrepency between our daily report and the offical tool. The daily report yielded a day average of 210mg/Nm3.	21-Jan
U3.	This will be investigated	

	• Unit Synchronized on 28/01 @ 01:24, need to be below the limit by 31/01 @01:24	20.1
U3.	SO3 plant shut down for leak on converter	28-Jan
U3.	Unit Synchronized on 28/01 @ 01:24, need to be below the limit by 31/01 @01:24	29-Jan
113	• Unit Synchronized on 28/01 @ 01:24, need to be below the limit by 31/01 @01:24	30-Jan
113	• Unit Synchronized on 28/01 @ 01:24, need to be below the limit by 31/01 @01:24 Section 30 Incurred: SO3 plant challenges and Unit light up SO3 plant shut down for leak on converter	31-Jan
U4.	Unit Light Up Unit synchronized 02/01 @ 23:00	04-Jan
U4.	Poor ESP Performance and manual rapping	22-Jan
U5.	 Unit synchronized on 30/12/2020 @ 08:06, need to be below the limit by 02/01/2021 @ 08:06 Monitors tripped between 31 Dec to 3 Jan (Data removed accordingly) 	01-Jan
U5.	 Unit synchronized on 30/12/2020 @ 08:06, need to be below the limit by 02/01/2021 @ 08:06 Monitors tripped between 31 Dec to 3 Jan (Data removed accordingly) 	02-Jan
	ESP Poor Performance	03-Jan
U5.	SO3 Plant ramping up and not yet in service	05-Jan
U5	 En roor renomance Emissions monitor is reading constant values, Ops reported that C&I maint was called out but the person could not go up the stack due to waiting for second standby, will be attended to this morning. C&I maint provided feedback that it is not a monitor fault but an electrical (220 supply) fault, EMS to attend today C&I Eng provided feedback that there is definitely a fault on the monitor. Issue to be resolved today to ensure decision can be made on loading for this unit. Data removed accordingly (06/01/2021 00:10-10:35) 	06-Jan
U5.	• LHO casing was taken on opportunity outage	17-Jan
U5.	Poor ESP Performance	22-Jan
U5.	Poor ESP Performance	23-Jan
U5.	ESP Poor performance and manual rapping	27-Jan

U6.	SO3 common plant sulphur supply temperature started to fall, this resulted in flow issues to the sulphur plant	02-Jan
U6.	Poor ESP performance	04-Jan
U6.	ESP poor performance	05-Jan
U6.	ESP Poor Performance	07-Jan
U6.	ESP Poor Performance	09-Jan
U6.	ESP Poor Performance	10-Jan
U6.	• Unit synchronized on 11/01 @ 05:01. Emissions to be below on 14/01 @ 05:01.	11-Jan
U6.	ESP Poor Performance and Manual Rapping	13-Jan
	• ESP poor performance	15-Jan
U6.	Manual rapping is planned for this unit	
	LHO casing poor performance	18-Jan
U6.	RHI Casing Outage start 22:47	
U6.	RHI Casing Outage	19-Jan
U6.	ESP Poor Performance and manual rapping	22-Jan
U6.	ESP Poor Performance	26-Jan
U6.	ESP Poor Performance and manual rapping	28-Jan
U6.	ESP Poor Performance Manual rapping required	29-Jan
	NOx Exceedances	
	Two Top Mills in service	
U6.	(No NOx Abatement in Place)	31-Jan