Eskom

Generation

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16

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MATLA POWER STATION

Atmospheric Emission License 17/4/AEL/MP312/11/14

BOILER ENGINEERING MANAGER	17/05/2021 **DATE**
ENVIRONMENTAL MANAGER	2021-05-17 **DATE**
ENGINEERING MANAGER	17/05/2021 **DATE**

Eskom

APRIL 2021

MATLA POWER STATION MONTHLY EMISSIONS REPORT

Atmospheric Emission License 17/4/AEL/MP312/11/14

1 RAW MATERIALS AND PRODUCTS

Raw Materials and Products	Raw Material Type	Units	Maximum Permitted Consumption Rate	Consumption Rate Apr-2021
	Coal	Tons	*1 475 000*	*825 593*
	Fuel Oil	Tons	*2 500*	*666*
Production Rates	**Product / By-Product Name**	**Units**	**Maximum Production Capacity Permitted**	**Production Rate Apr-2021**
	Energy	GWh	*2 484*	*1 447*
	Ash	Tons	*471 000*	*245 036*
	RE PM	kg/MWh	*not specified*	*0,502*

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
CV Content	MJ/kg	*16-24*	*19,39*
Sulphur Content	%	*0.8-1.1*	*1,00*
Ash Content	%	*21-40*	*29,68*

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SO_2	NO
South	*200*	*3500*	*1200*
Unit 4	*200*	*3500*	*1200*
Unit 5	*100*	*3500*	*1200*
Unit 6	*100*	*3500*	*1200*

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Apr-2021
South	*Electro Static Precipators (ESP)*	*99,834%*
Unit 4	*Electro Static Precipators (ESP)*	*99,252%*
Unit 5	*Electro Static Precipators (ESP)*	*99,658%*
Unit 6	*Electro Static Precipators (ESP)*	*99,720%*

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

5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO_2	NO	O_2
South	*99,4*	*100,0*	*100,0*	*100,0*
Unit 4	*90,0*	*99,2*	*99,3*	*99,4*
Unit 5	*92,4*	*99,2*	*99,4*	*96,2*
Unit 6	*94,9*	*98,9*	*98,9*	*99,3*

6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of April-2021

Associated Unit/Stack	PM	SOx	NOx
Unit 1	81,0	3 511,9	882,6
Unit 2	71,2	3 093,3	789,5
Unit 3	0,0	0,0	0,0
Unit 4	317,0	3 898,9	1 313,5
Unit 5	156,4	3 058,1	1 168,8
Unit 6	101,3	2 208,7	998,4
SUM	726,9	15 770,9	5 152,7

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm³)
South	29	1	0	0	1	53,4
Unit 4	21	9	0	0	9	179,8
Unit 5	21	6	1	0	7	102,0
Unit 6	17	5	0	0	5	104,0
SUM	**88**	**21**	**1**	**0**	**22**	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SOx (mg/Nm³)
South	30	0	0	0	0	2 354,9
Unit 4	30	0	0	0	0	2 213,7
Unit 5	29	0	0	0	0	1 912,7
Unit 6	25	0	0	0	0	2 201,6
SUM	**114**	**0**	**0**	**0**	**0**	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm³)
South	30	0	0	0	0	592,7
Unit 4	30	0	0	0	0	746,6
Unit 5	29	0	0	0	0	726,6
Unit 6	24	1	0	0	1	988,3
SUM	**113**	**1**	**0**	**0**	**1**	

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

Figure 1: Matla South Stack PM Emissions - April 2021

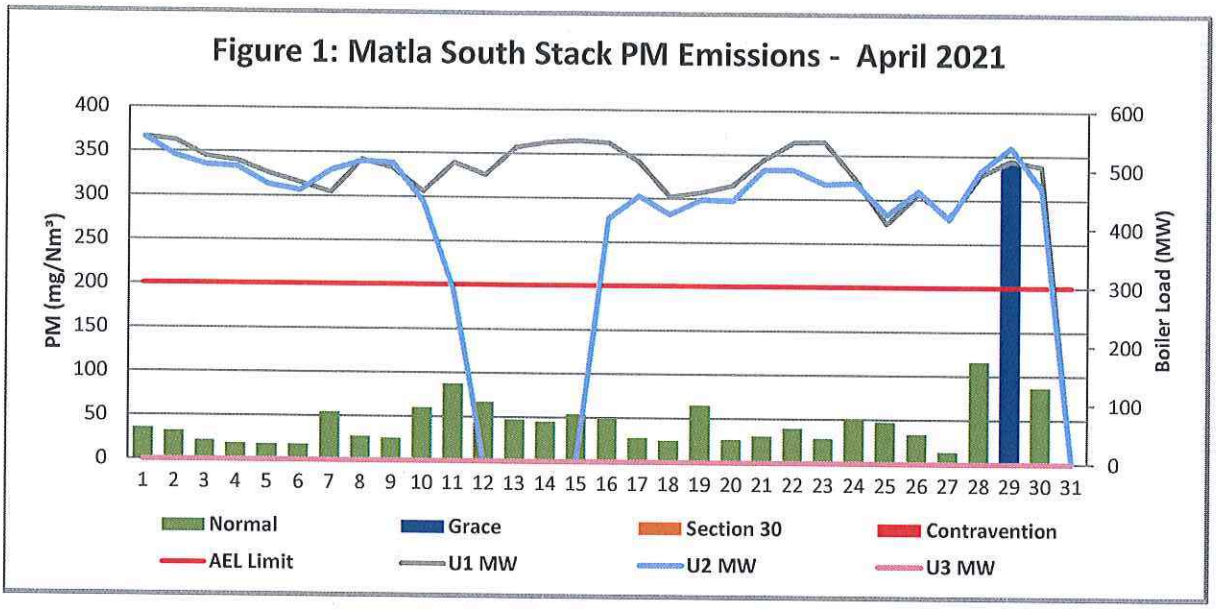
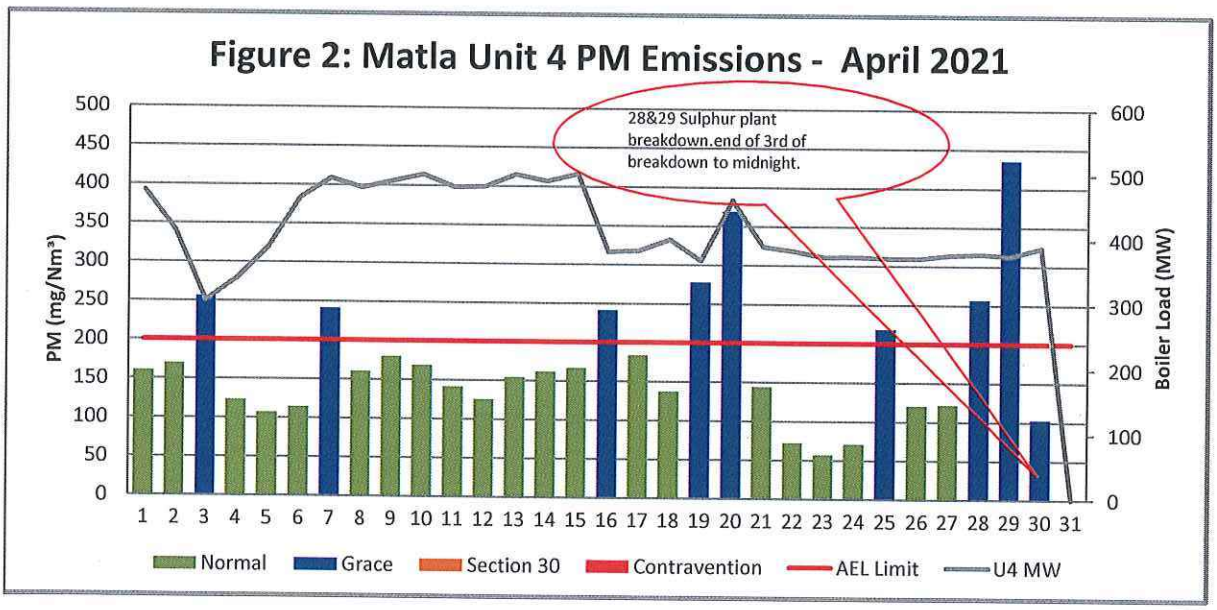


Figure 2: Matla Unit 4 PM Emissions - April 2021



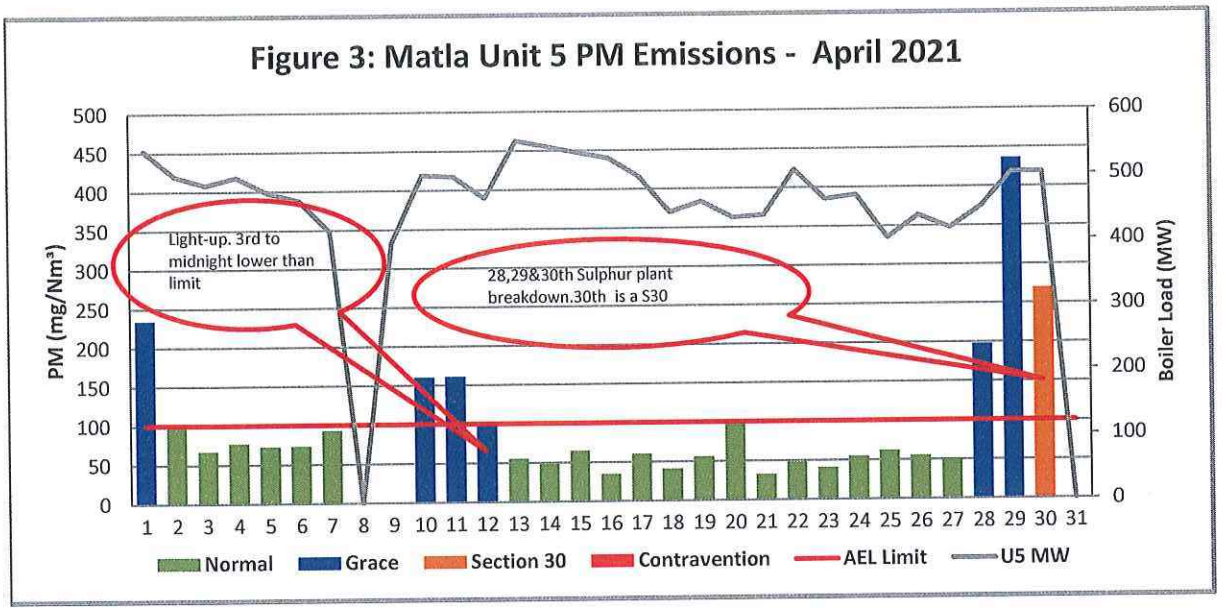


Figure 3: Matla Unit 5 PM Emissions - April 2021
PM (mg/Nm³)
Boiler Load (MW)
Light-up. 3rd to midnight lower than limit
28,29&30th Sulphur plant breakdown.30th is a S30
Normal
Grace
Section 30
Contravention
AEL Limit
U5 MW

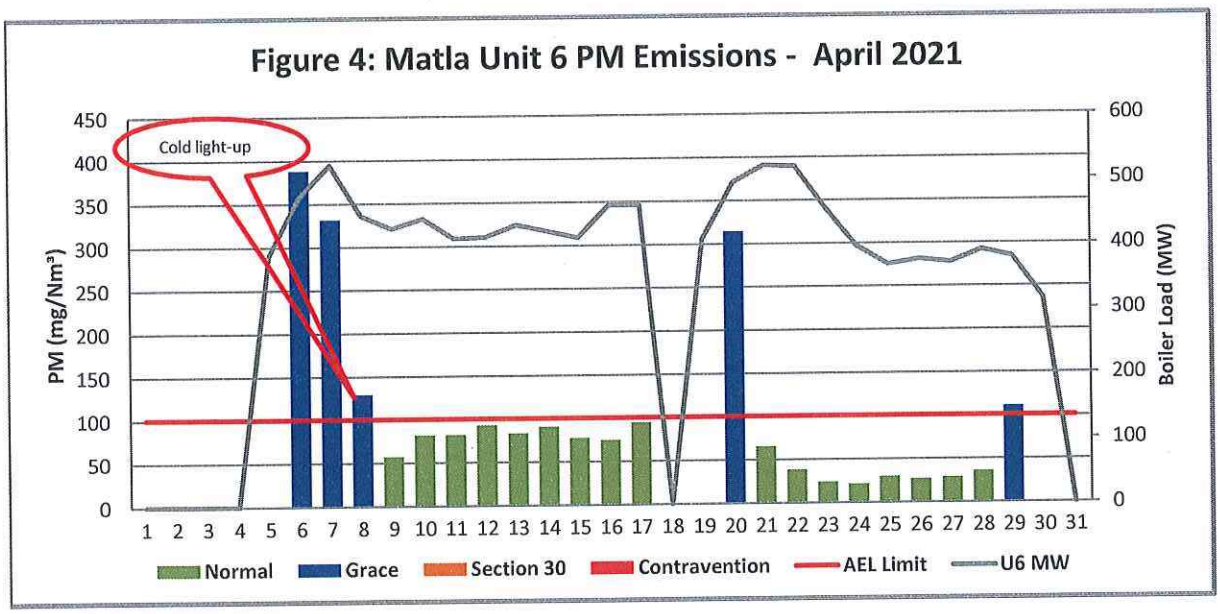


Figure 4: Matla Unit 6 PM Emissions - April 2021
PM (mg/Nm³)
Boiler Load (MW)
Cold light-up
Normal
Grace
Section 30
Contravention
AEL Limit
U6 MW

Figure 5: Matla South Stack SOx Emissions - April 2021

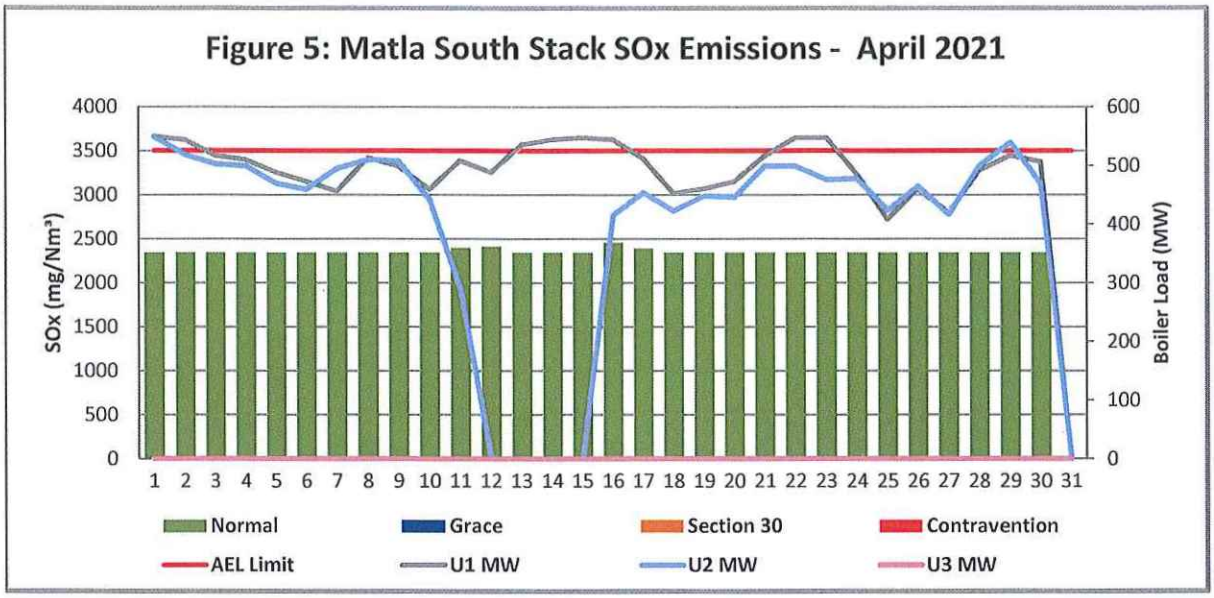
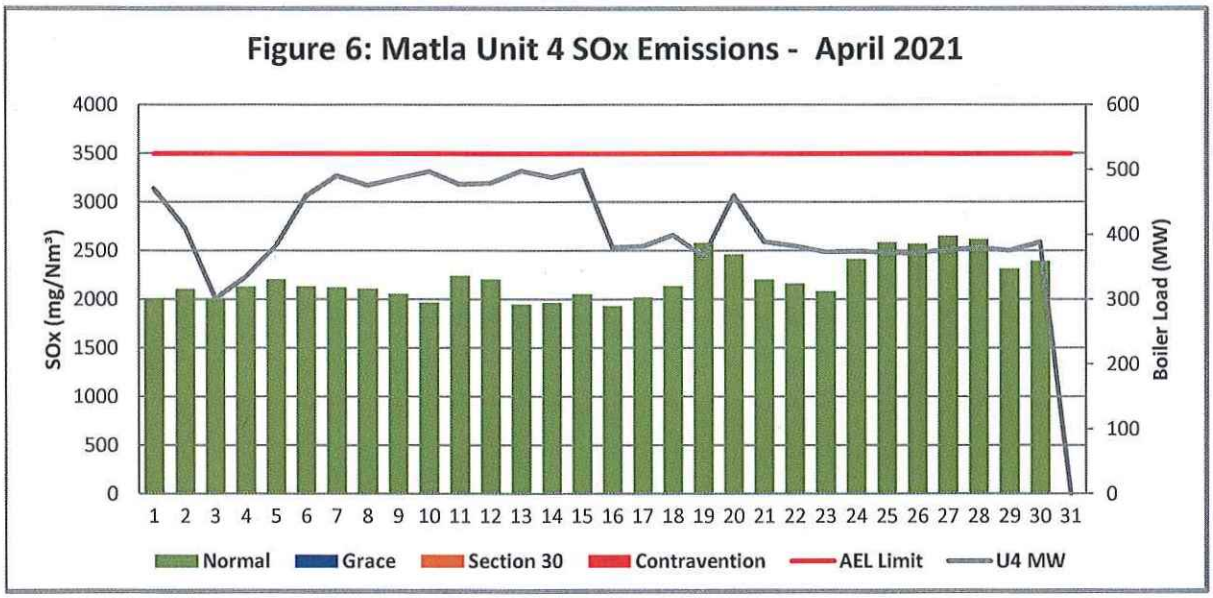


Figure 6: Matla Unit 4 SOx Emissions - April 2021



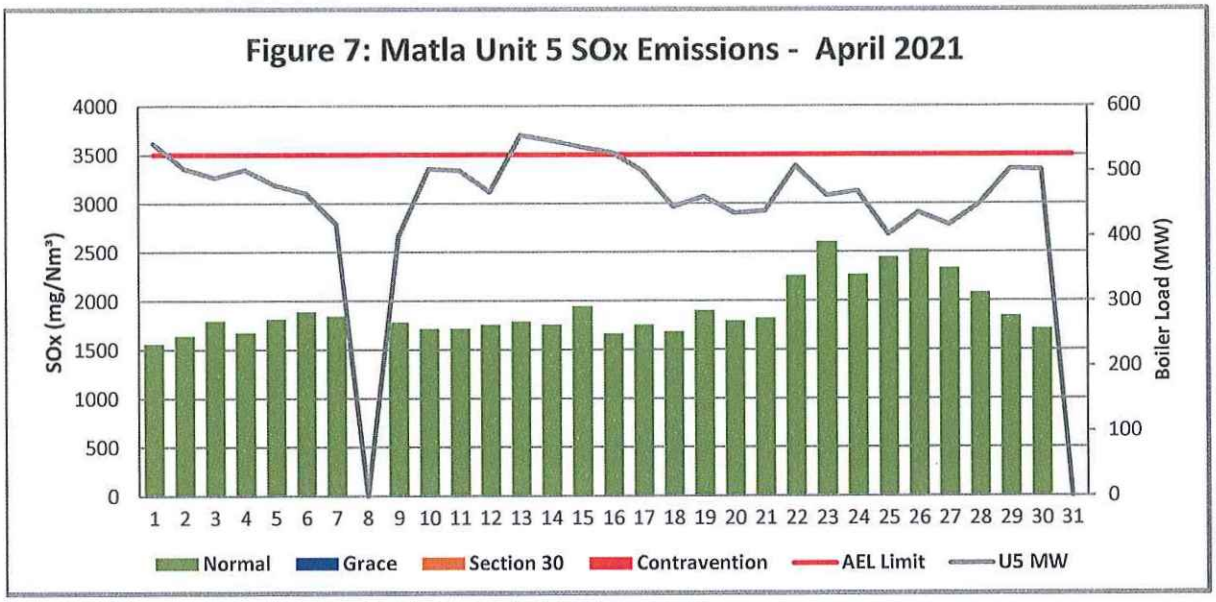


Figure 7: Matla Unit 5 SOx Emissions - April 2021
SOx (mg/Nm³)
Boiler Load (MW)
4000
3500
3000
2500
2000
1500
1000
500
0
600
500
400
300
200
100
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Normal
Grace
Section 30
Contravention
AEL Limit
U5 MW

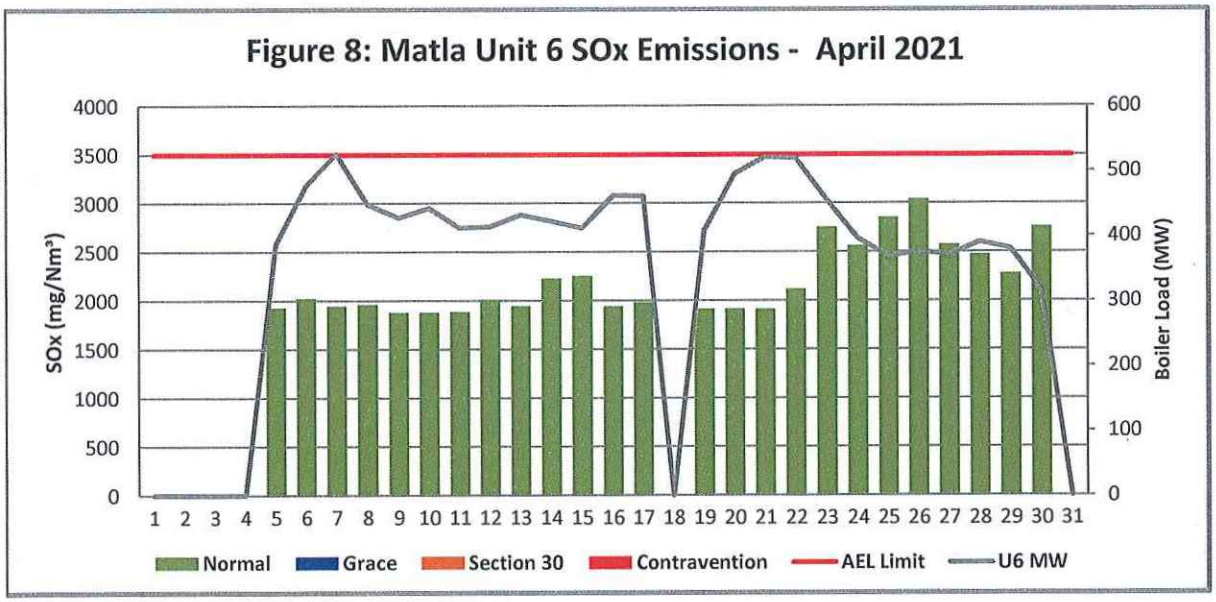


Figure 8: Matla Unit 6 SOx Emissions - April 2021
SOx (mg/Nm³)
Boiler Load (MW)
4000
3500
3000
2500
2000
1500
1000
500
0
600
500
400
300
200
100
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Normal
Grace
Section 30
Contravention
AEL Limit
U6 MW

Figure 9: Matla South Stack NOx Emissions - April 2021

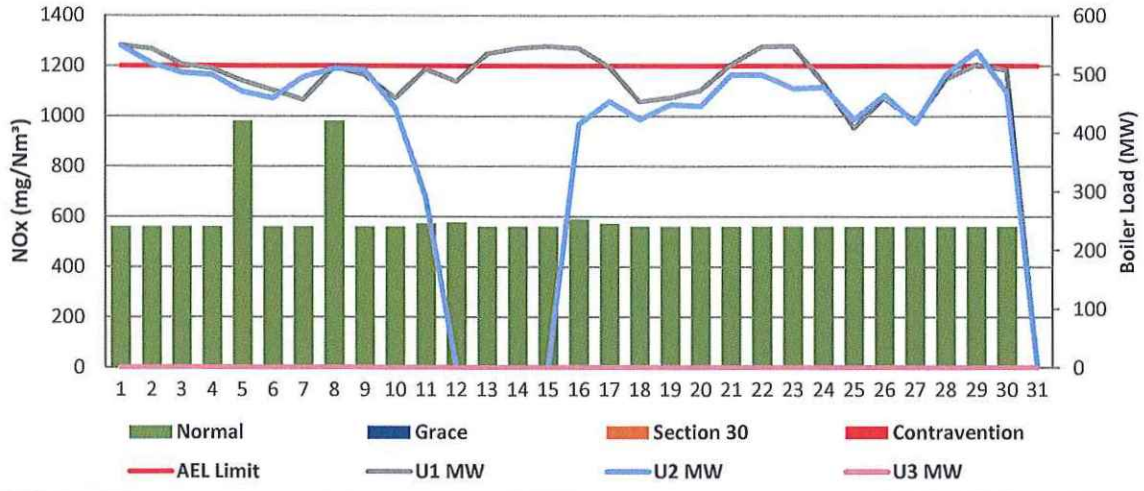
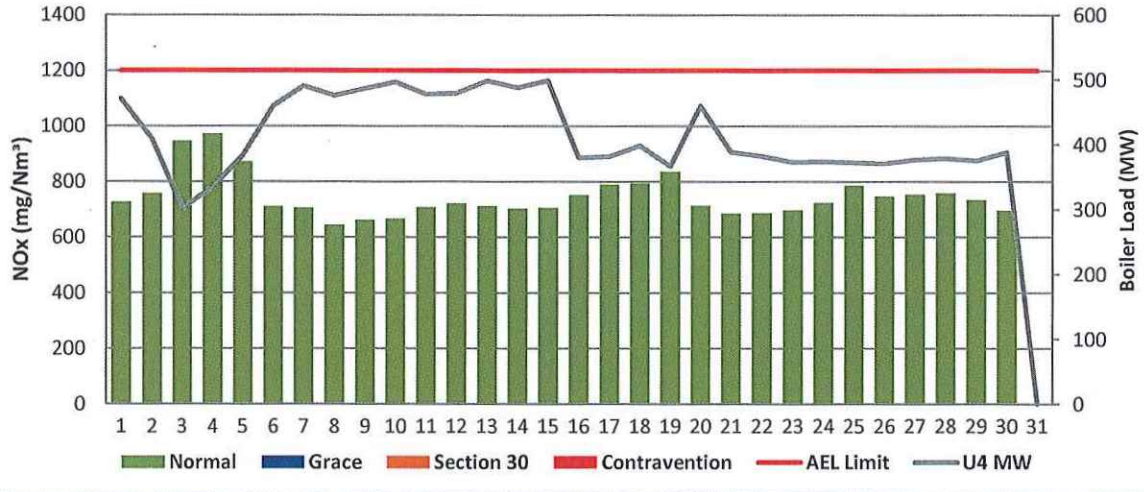


Figure 10: Matla Unit 4 NOx Emissions - April 2021



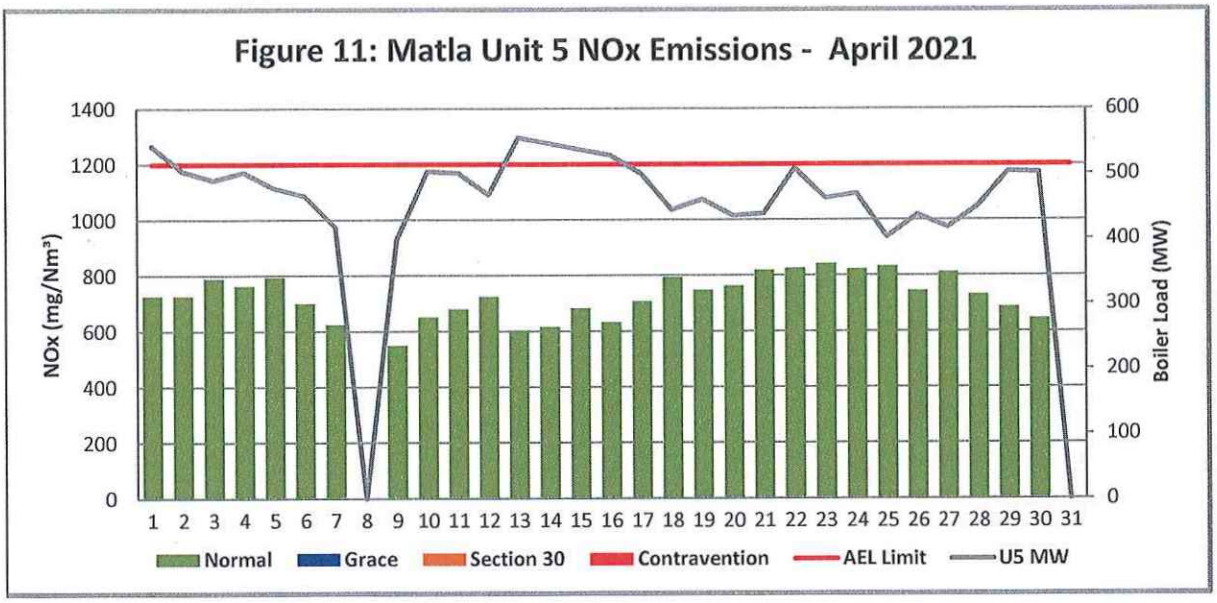


Figure 11: Matla Unit 5 NOx Emissions - April 2021
NOx (mg/Nm³)
Boiler Load (MW)
1400
1200
1000
800
600
400
200
0
600
500
400
300
200
100
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Normal
Grace
Section 30
Contravention
AEL Limit
U5 MW

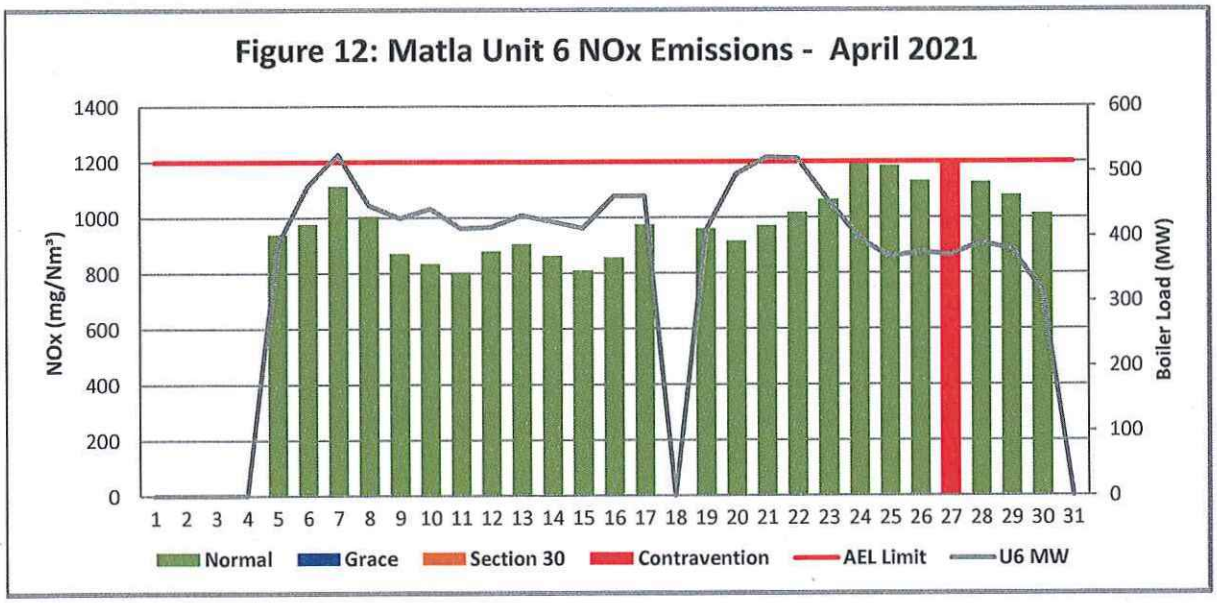


Figure 12: Matla Unit 6 NOx Emissions - April 2021
NOx (mg/Nm³)
Boiler Load (MW)
1400
1200
1000
800
600
400
200
0
600
500
400
300
200
100
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Normal
Grace
Section 30
Contravention
AEL Limit
U6 MW

7 SHUT DOWN AND LIGHT UP INFORMATION

Table 7.1. PM Start-up information for the month of April-2021

South Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 2		Unit 1		no event		no event	
Breaker Open (BO)	1:10 PM	2021/04/11						
Draught Group (DG) Shut Down (SD)	1:50 PM	2021/04/12						
BO to DG SD (duration)	01:00:40	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	1:00 AM	2021/04/16						
Synch. to Grid (or BC)	9:40 AM	2021/04/16						
Fires in to BC (duration)	00:08:40	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	11:00 AM	2021/04/17						
Emissions below limit from BC (duration)	01:01:20	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM

South Stack ...cont.	Event 5		Event 6		Event 7		Event 8	
Unit No.	no event		no event		no event		no event	
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	Event 1		Event 2		Event 3		Event 4	
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. 5	Event 1		Event 2		Event 3		Event 4	
Breaker Open (BO)	1:50 AM	2021/04/07						
Draught Group (DG) Shut Down (SD)	1:50 AM	2021/04/07						
BO to DG SD (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	4:45 AM	2021/04/09						
Synch. to Grid (or BC)	4:50 PM	2021/04/09						
Fires in to BC (duration)	00:12:05	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	8:00 AM	2021/04/13						
Emissions below limit from BC (duration)	03:15:10	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM

Unit No. 6	Event 1		Event 2		Event 3		Event 4	
Breaker Open (BO)	BO previously	BO previously	10:45 PM	2021/04/17	10:35 PM	2021/04/29		
Draught Group (DG) Shut Down (SD)	n/a	n/a	10:45 PM	2021/04/17	10:35 PM	2021/04/29		
BO to DG SD (duration)	n/a	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	7:10 PM	2021/04/04	3:00 AM	2021/04/19	10:35 PM	2021/04/29		
Synch. to Grid (or BC)	8:00 AM	2021/04/05	9:00 AM	2021/04/19	6:40 AM	2021/04/30		
Fires in to BC (duration)	00:12:50	DD:HH:MM	00:06:00	DD:HH:MM	00:08:05	DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	12:00 AM	2021/04/09	12:00 AM	2021/04/21	8:00 PM	2021/05/01		
Emissions below limit from BC (duration)	03:16:00	DD:HH:MM	01:15:00	DD:HH:MM	01:13:20	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-2021 in mg/Nm³

[Include reference to once off test showing typical emissions rates during fires in and SD]

Remember to add attachments here; see ReportAddendum Tab

Reserved for Addendum XXXX

11 General

South Stack gases not working therefore reliability fell below 80% and QAL2 averages used.
Unit 6 has 1 day of exceedance(1203mg/Nm3).
Unit 4 maxed out on the 29-04-2021(436,3mg/Nm3).

11-05-2021

Boiler Engineering Date

2021-05-17

Environmental Department Date

17/05/2021

General Manager Date

Compiled by:	Boiler Engineering Department	ESP & SO_3 System Engineer
For:	Department of Environmental Affairs and Tourism	Chief Air Pollution Control Officer
Copies:	Eskom Environmental Management	D Herbst B Mccourt
	Group Technology Engineering	R Rampiar E. Patel
	Matla Power Station:	Engineering Manager Operating Manager Maintenance Manager Unit Production Manager Boiler Engineering Manager System Engineer Environmental Officer Performance and Test Production Manager

ADDENDUM TO MONTHLY EMISSIONS REPORT

8 EMERGENCY GENERATION

Emergency Generation *[This is only required for stations that are requested to report on this information]*

Table 8. Emergency Generation per unit for the month of April 2021

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Emergency Generation hours declared by national Control						
Emergency Hours declared including hours after stand down						
Hours over the Limit during Emergency Generation						

9 COMPLAINTS REGISTER

Table 9. Complaints for the month of April 2021

Source Code / Name	Root Cause Analysis	Calculation of Impacts / emissions associated with the incident	Dispersion modeling of pollutants where applicable	Measures implemented to prevent reoccurrence	Date measure will be implemented
(Insert name of affected	*(Insert root cause for incident)*	*(Insert emissions associated with incident)*	*(Insert dispersion model information where applicable)*	*(Insert mitigation measures taken)*	*(Insert date of implementation of*

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 Acknowledg-ment	Date DEA Acceptabe	Comments / Reference No.
5	24-01-2021	2021/02/08	SO3 plant unavailability, Common plant supply pump breakdown and permittaken for repairs. .	Permit taken to replace the pump	Yes				