Eskom

Generation

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Attention:
Mr V Mahlangu

AND

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Total number of pages:
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MATLA POWER STATION

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

BOILER ENGINEERING MANAGER	18/01/2023 DATE
ENVIRONMENTAL MANAGER	2023/01/18 DATE
ENGINEERING MANAGER	18/01/2023 DATE

Eskom

NOVEMBER 2022

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	Max Permitted Consumption Rate	Consumption Rate Nov-2022
	Coal	Tons	*1 475 000*	*821 923*
	Fuel Oil	Tons	*3 500*	*1 098*
Production Rates	**Product / By-Product Name**	**Units**	**Max Production Capacity Permitted**	**Production Rate Nov-2022**
	Energy	GWh	*2 657*	*1 309*
	Ash	Tons	*471 000*	*258 577*
	RE PM	kg/MWh	*not specified*	

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	*0.8-1.1*	*1.00*
Ash Content	%	*21-40*	*31.46*

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*

Note: NOx emissions is measured as NO in PPM. Final NOx value is expressed as total NO_2

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Nov-2022
South	*Electro Static Precipators (ESP)*	*99.991%*
Unit 4	*Electro Static Precipators (ESP)*	
Unit 5	*Electro Static Precipators (ESP)*	*99.992%*
Unit 6	*Electro Static Precipators (ESP)*	*99.993%*

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

5 DATA RELIABILITY (%)

Associated Unit/Stack	PM	SO_2	NO	O_2
South	*100.0*	*100.0*	*100.0*	*100.0*
Unit 4				
Unit 5	*87.5*	*100.0*	*99.0*	*99.9*
Unit 6	*87.1*	*98.6*	*98.3*	*100.0*

6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of November-2022

Associated Unit/Stack	PM	SOx	NOx
Unit 1	382.1	2 770.3	664.3
Unit 2	499.0	3 593.2	861.6
Unit 3	437.7	3 210.5	769.9
Unit 4	0.0	0.0	0.0
Unit 5	392.0	3 096.4	1 157.3
Unit 6	311.0	3 460.3	1 035.7
SUM	2 021.9	16 130.7	4 488.8

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm³)
South	3	4	23	0	27	338.2
Unit 4	0	0	0	0	0	
Unit 5	12	9	9	0	18	284.5
Unit 6	11	9	10	0	19	245.3
SUM	**26**	**22**	**42**	**0**	**64**	

Table 6.3: Operating days in compliance to SO_2 AEL Limit - November 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO_2 (mg/Nm³)
South	30	0	0	0	0	2 401.1
Unit 4	0	0	0	0	0	
Unit 5	30	0	0	0	0	2 498.7
Unit 6	30	0	0	0	0	2 613.2
SUM	**90**	**0**	**0**	**0**	**0**	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm³)
South	30	0	0	0	0	575.8
Unit 4	0	0	0	0	0	
Unit 5	30	0	0	0	0	952.7
Unit 6	30	0	0	0	0	787.6
SUM	**90**	**0**	**0**	**0**	**0**	

Note: NOx emissions is measured as NO in PPM. Final NOx value is expressed as total NO_2

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

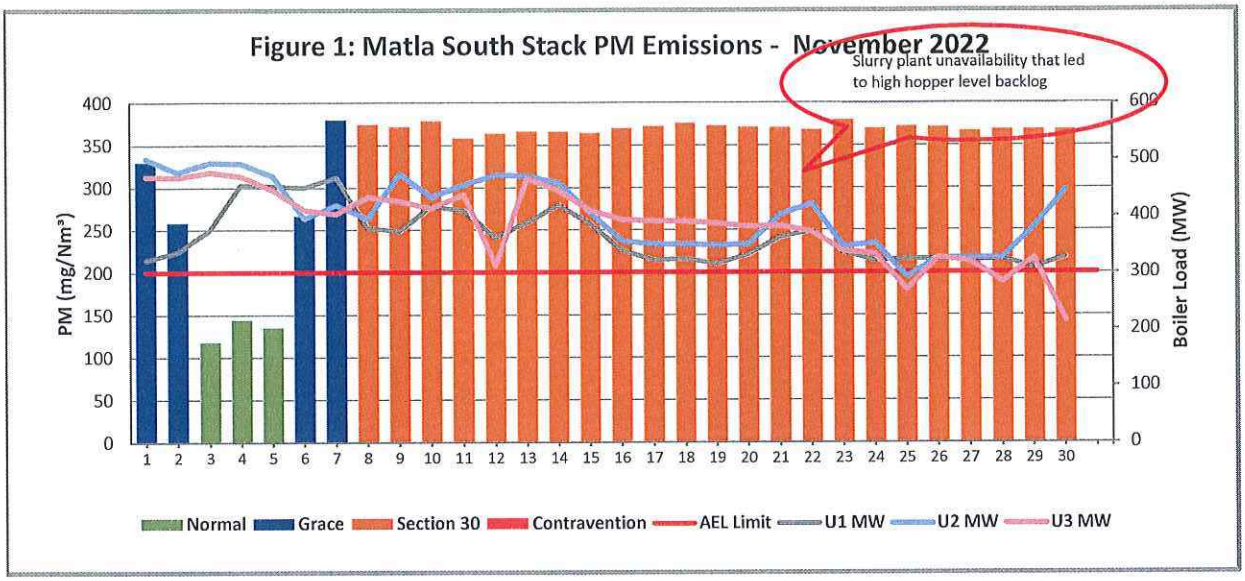


Figure 1: Matla South Stack PM Emissions - November 2022
Slurry plant unavailability that led to high hopper level backlog
PM (mg/Nm³)
Boiler Load (MW)
Normal
Grace
Section 30
Contravention
AEL Limit
U1 MW
U2 MW
U3 MW

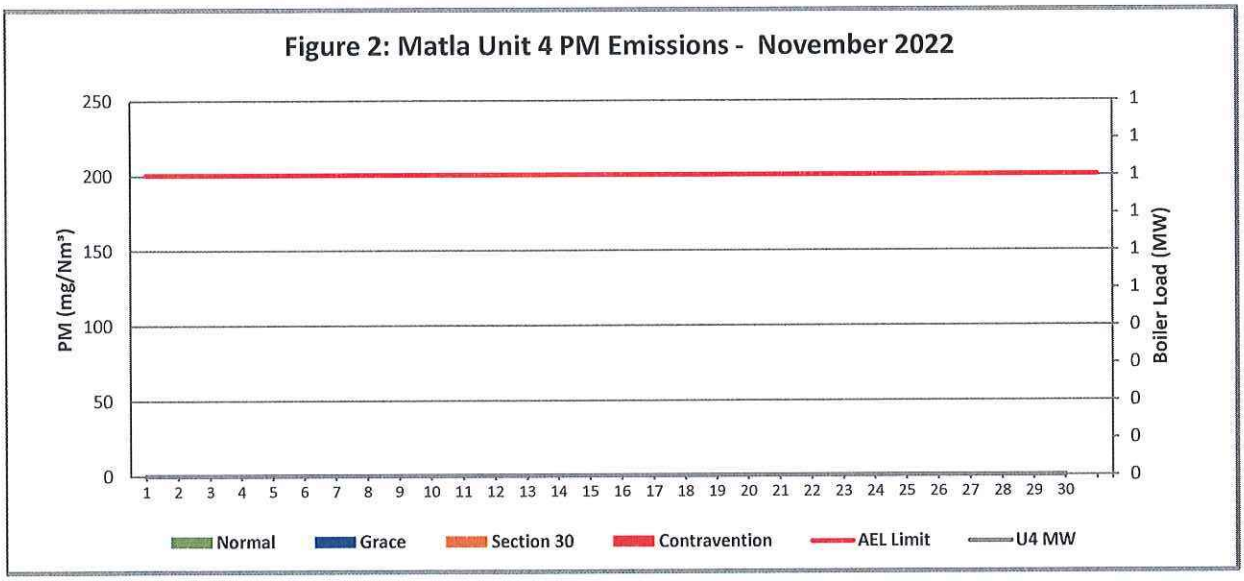


Figure 2: Matla Unit 4 PM Emissions - November 2022
PM (mg/Nm³)
Boiler Load (MW)
Normal
Grace
Section 30
Contravention
AEL Limit
U4 MW

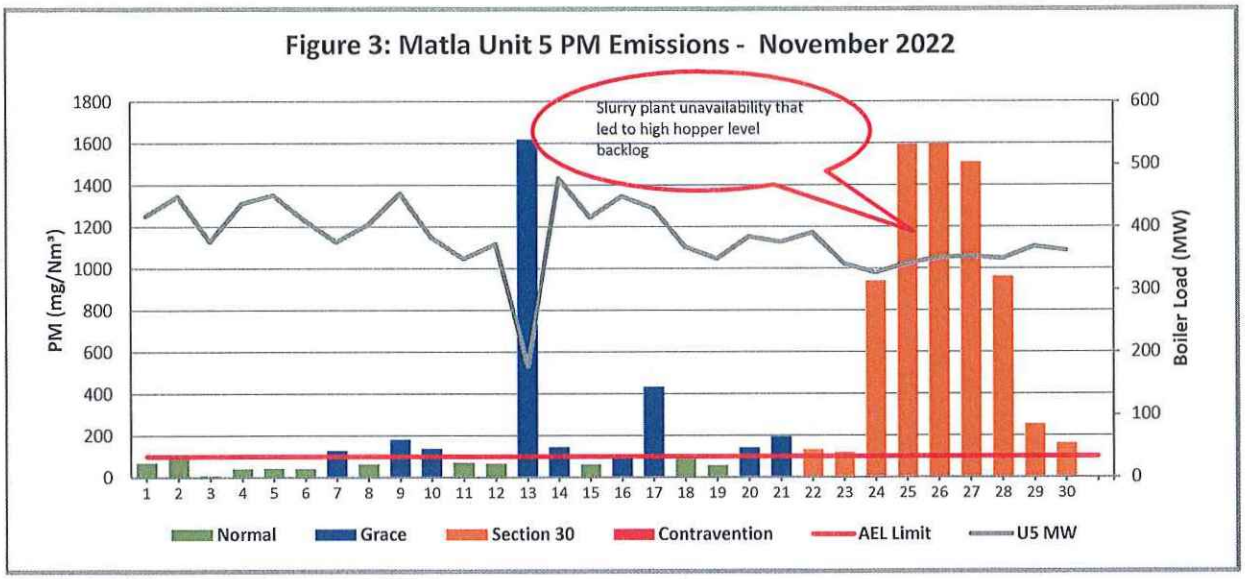


Figure 3: Matla Unit 5 PM Emissions - November 2022
Slurry plant unavailability that led to high hopper level backlog
PM (mg/Nm³)
Boiler Load (MW)
Normal
Grace
Section 30
Contravention
AEL Limit
U5 MW

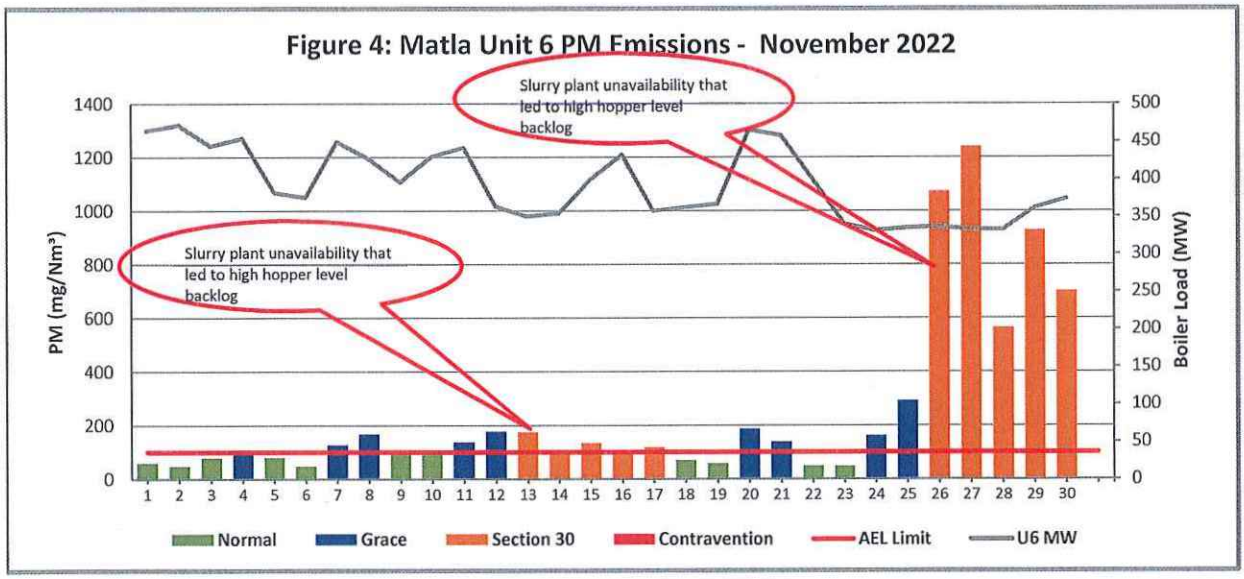


Figure 4: Matla Unit 6 PM Emissions - November 2022
Slurry plant unavailability that led to high hopper level backlog
Slurry plant unavailability that led to high hopper level backlog
PM (mg/Nm³)
Boiler Load (MW)
Normal
Grace
Section 30
Contravention
AEL Limit
U6 MW

Figure 5: Matla South Stack SO_2 Emissions - November 2022

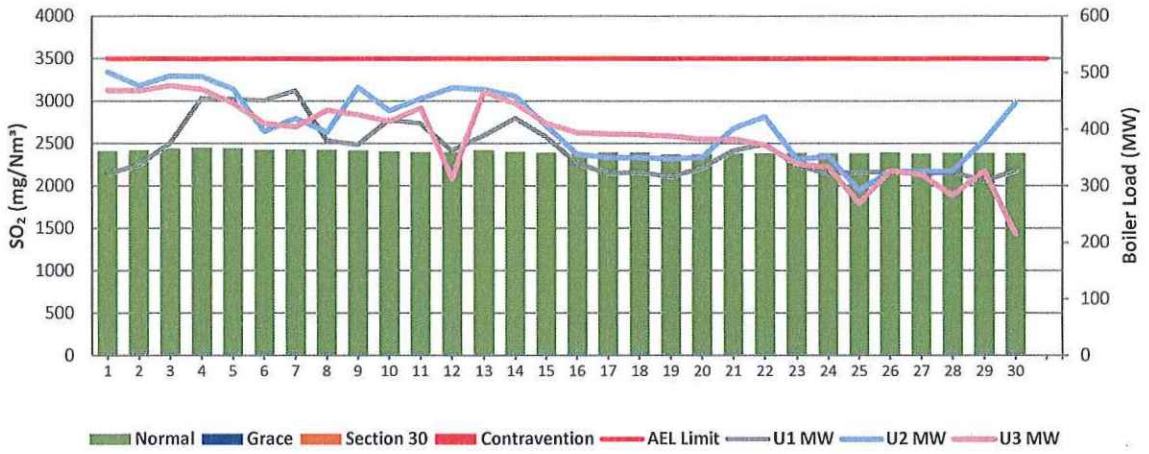
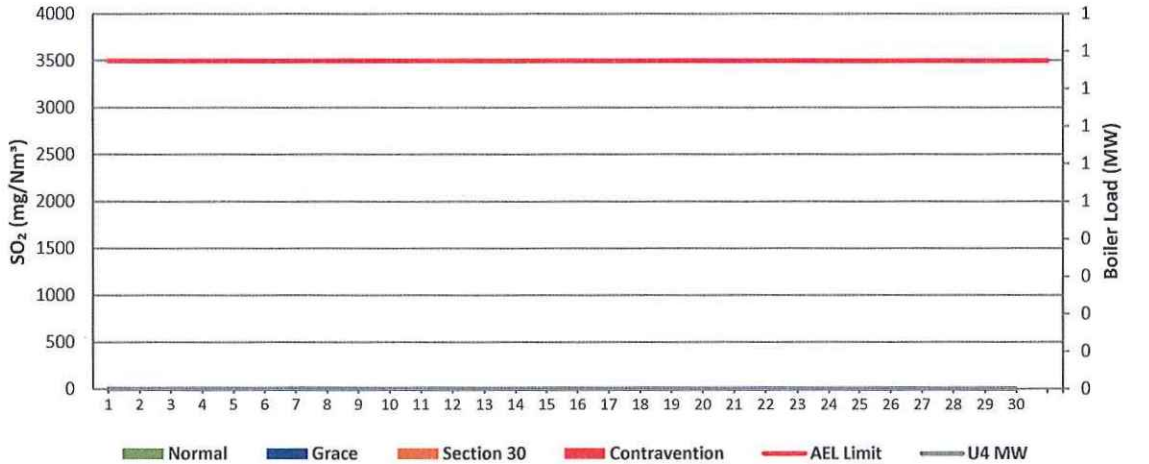


Figure 6: Matla Unit 4 SO_2 Emissions - November 2022



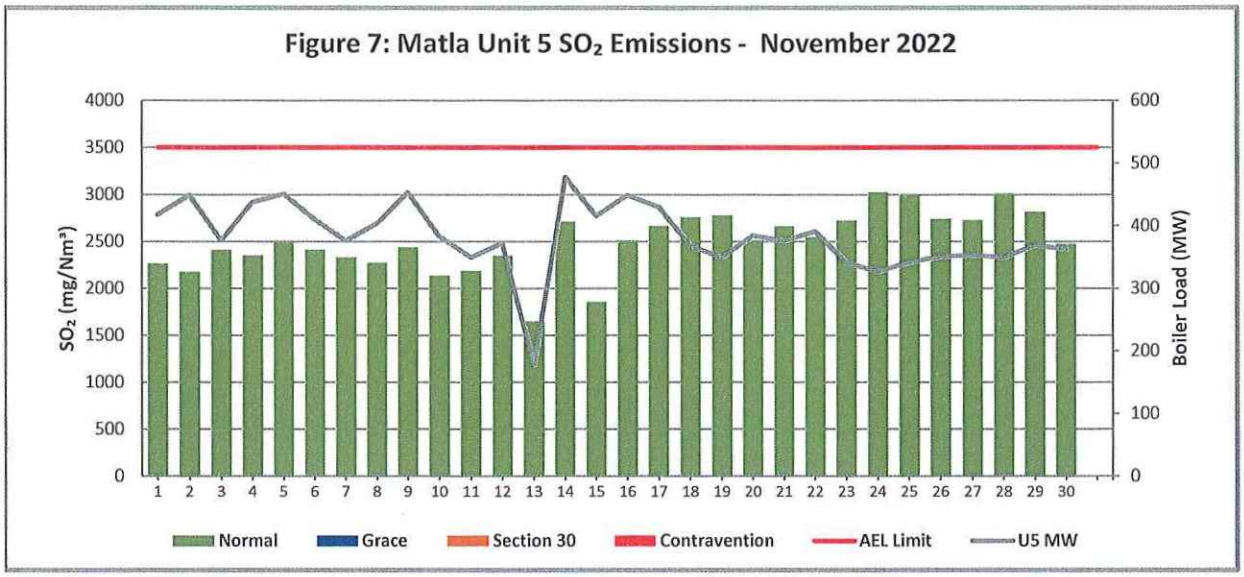


Figure 7: Matla Unit 5 SO2 Emissions - November 2022
SO2 (mg/Nm3)
Boiler Load (MW)
4000
3500
3000
2500
2000
1500
1000
500
0
600
500
400
300
200
100
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Normal
Grace
Section 30
Contravention
AEL Limit
U5 MW

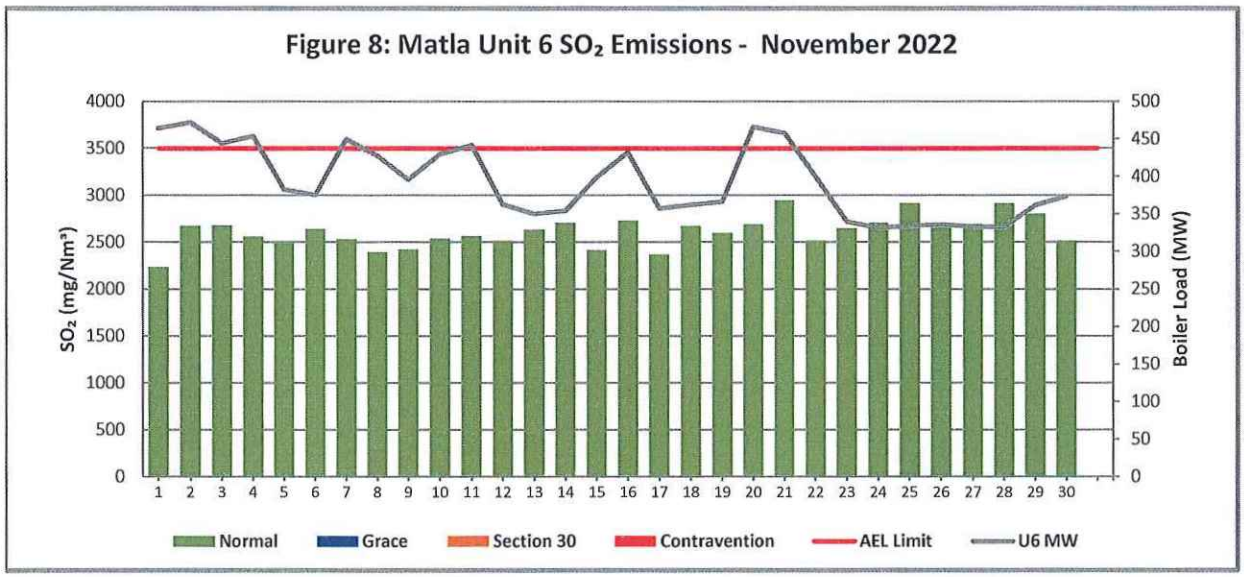


Figure 8: Matla Unit 6 SO2 Emissions - November 2022
SO2 (mg/Nm3)
Boiler Load (MW)
4000
3500
3000
2500
2000
1500
1000
500
0
500
450
400
350
300
250
200
150
100
50
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Normal
Grace
Section 30
Contravention
AEL Limit
U6 MW

Figure 9: Matla South Stack NOx Emissions - November 2022

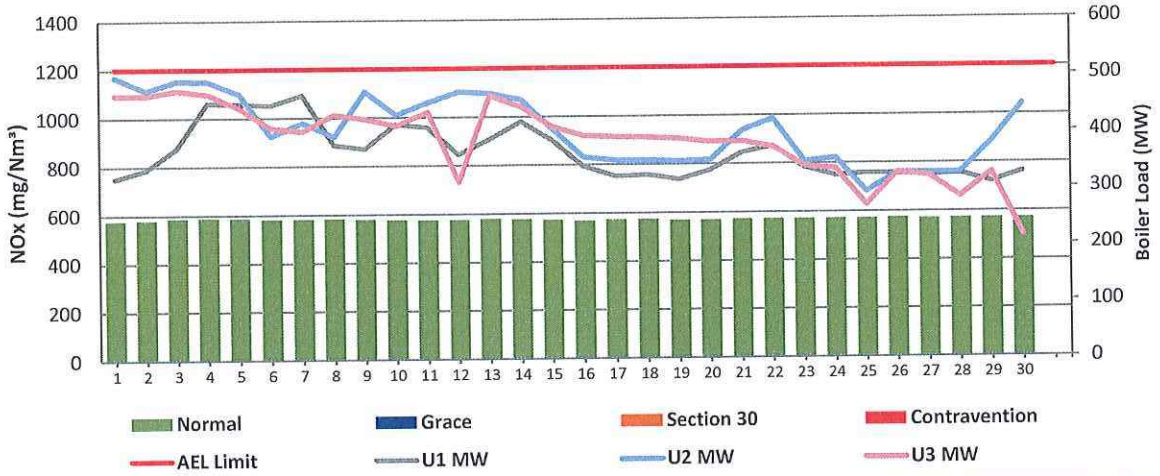
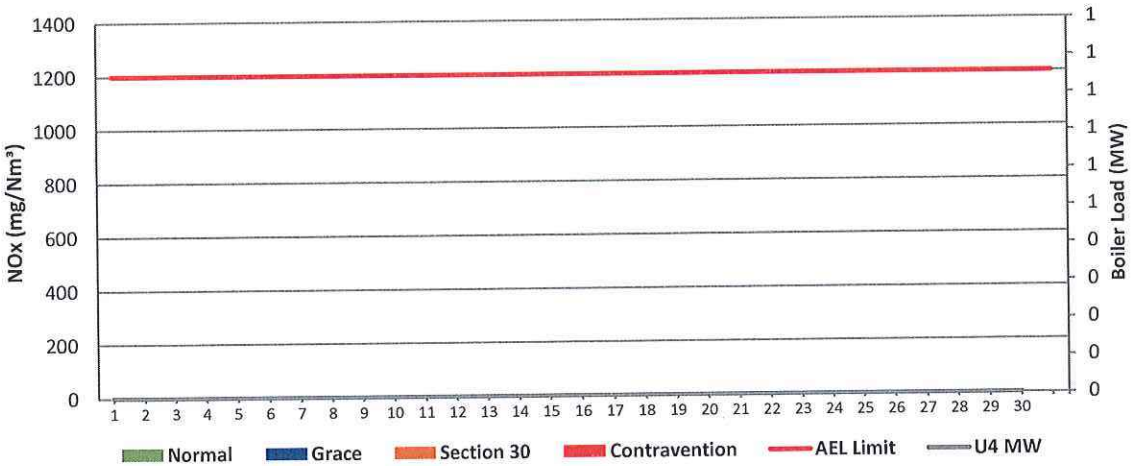


Figure 10: Matla Unit 4 NOx Emissions - November 2022



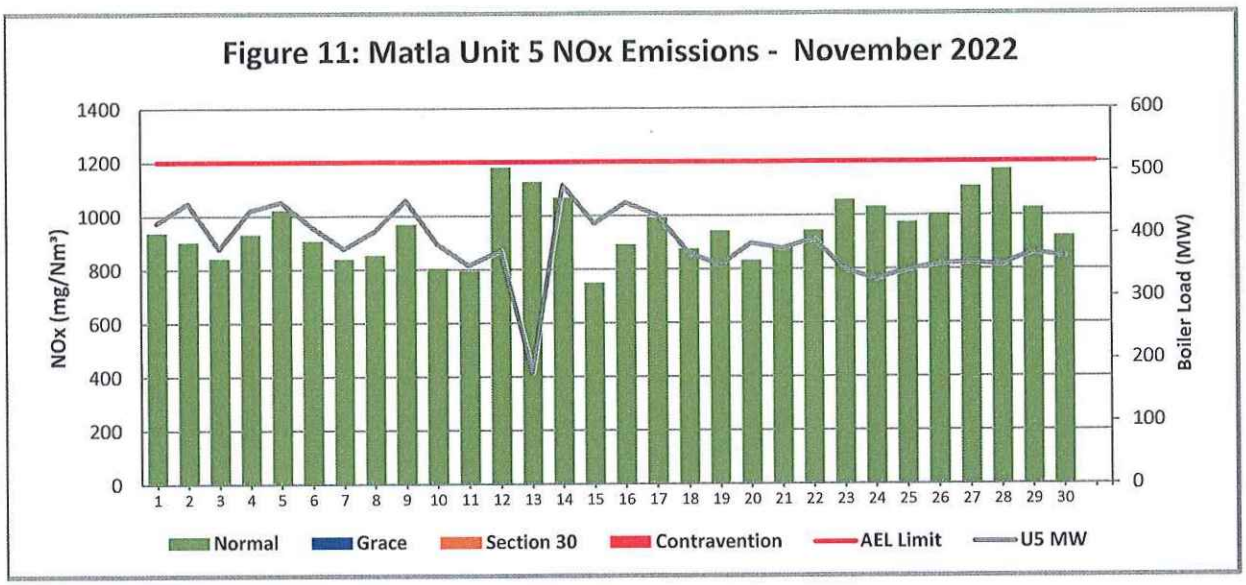


Figure 11: Matla Unit 5 NOx Emissions - November 2022
NOx (mg/Nm³)
Boiler Load (MW)
1400
1200
1000
800
600
400
200
0
600
500
400
300
200
100
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Normal
Grace
Section 30
Contravention
AEL Limit
U5 MW

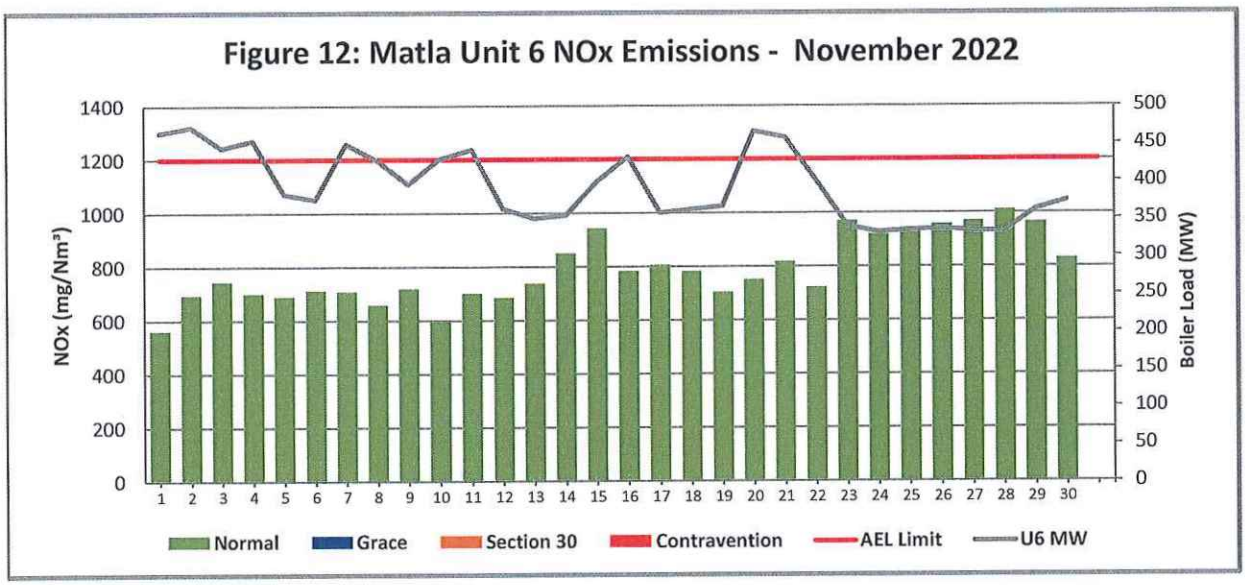


Figure 12: Matla Unit 6 NOx Emissions - November 2022
NOx (mg/Nm³)
Boiler Load (MW)
1400
1200
1000
800
600
400
200
0
500
450
400
350
300
250
200
150
100
50
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Normal
Grace
Section 30
Contravention
AEL Limit
U6 MW

7 SHUT DOWN AND LIGHT UP INFORMATION

Table 7.1. PM Start-up information for the month of November-2022

South Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	no event		Unit 1		Unit 3		Unit 3	
Breaker Open (BO)			10:35 AM	2022/11/29	10:05 PM	2022/11/24	10:05 PM	2022/11/27
Draught Group (DG) Shut Down (SD)			DG did not trip or SD	DG did not trip or SD	DG did not trip or SD	DG did not trip or SD	DG did not trip or SD	DG did not trip or SD
BO to DG SD (duration)		DD:HH:MM	n/a	DD:HH:MM	n/a	DD:HH:MM	n/a	DD:HH:MM
Fires in time			10:35 AM	2022/11/29	10:05 PM	2022/11/24	10:05 PM	2022/11/27
Synch. to Grid (or BC)			5:10 PM	2022/11/29	6:55 AM	2022/11/25	10:40 AM	2022/11/28
Fires in to BC (duration)		DD:HH:MM	00:06:35	DD:HH:MM	00:08:50	DD:HH:MM	00:12:35	DD:HH:MM
Emissions below limit from BC (end date)			not > limit	not > limit	not > limit	not > limit	not > limit	not > limit
Emissions below limit from BC (duration)		DD:HH:MM	n/a	DD:HH:MM	n/a	DD:HH:MM	n/a	DD:HH:MM

South Stack ...cont.	Event 5		Event 6		Event 7		Event 8	
Unit No.	Unit 3		Unit 3		no event		no event	
Breaker Open (BO)	1:50 PM	2022/11/29	12:20 AM	2022/12/01				
Draught Group (DG) Shut Down (SD)	DG did not trip or SD	DG did not trip or SD	DG did not trip or SD	DG did not trip or SD				
BO to DG SD (duration)	n/a	DD:HH:MM	n/a	DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	1:50 PM	2022/11/29	12:20 AM	2022/12/01				
Synch. to Grid (or BC)	12:00 AM	2022/11/30	8:40 AM	2022/12/01				
Fires in to BC (duration)	00:10:10	DD:HH:MM	00:08:20	DD:HH:MM		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		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)	6:55 PM	2022/11/12						
Draught Group (DG) Shut Down (SD)	6:55 PM	2022/11/12						
BO to DG SD (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	6:55 PM	2022/11/12						
Synch. to Grid (or BC)	9:50 PM	2022/11/13						
Fires in to BC (duration)	01:02:55	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	10:00 PM	2022/11/18						
Emissions below limit from BC (duration)	05:00:10	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)								
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

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

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 November 2022

	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 November 2022

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*
MR W Jacobs	Slurry plant trains unavailable				30.04.2023

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.
SS	08/11/2022	09/12/2022	Slurry plant unavailability that led to high hopper level backlog.		Yes				Final report submitted
5	22/11/2022	09/12/2023	Slurry plant unavailability that led to high hopper level backlog.		Yes				Final report submitted
6	13/11/2022	17/11/2022	Slurry plant unavailability that led to high hopper level backlog.		Yes				Final report submitted
6	26/11/2022	03/12/2022	Slurry plant unavailability that led to high hopper level backlog.		Yes				Final report submitted

11 General

South stack gas emissions are reported using parallel tests averages.

South stack and U6 correlation curve expired. South stack correlation completed awaiting for the final report. Unit 4 on outage and correlation planned for February(after outage) 2023. Unit 6 correlation planned to be done after outage(forced outage).

Boiler Engineering	04-01-2023 Date	Environmental Department	16.01.2023 Date
General Manager	18/01/2023 Date		

Compiled by:	Boiler Engineering Department	ESP & SO_3 System Engineer
For:	Department of Environmental Affairs and Tourism	Chief Air Pollution Control Officer
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	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