Eskom	Monthly Report	Matla Power Station

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Compiled by	Verified by	Verified by	Supported by
L.A Murovhi	M Gcaleka	N Molefe	L Tshidzumba
Initials and Surname	**Initials and Surname**	**Initials and Surname**	**Initials and Surname**
Senior Advisor Environmental	**Senior Advisor Engineer Boiler**	**C&I System Engineer**	**Environmental Manager**
Date: 25/11/2024	**Date:** 25/10/2024	Date: 25/10/2024	Date: 25/11/2024

Supported by	Supported by	Authorized by
J Makuleka	pp L Ngobese	M Lesolang
Initials and Surname	Initials and Surname	Initials and Surname
Boiler Engineering Manager	Engineering Group Manager	General Manager
Date: 26/11/2024	Date: 2024/11/26	Date: 28/11/2024

Content

1. Introduction

MATLA POWER STATION MONTHLY EMISSIONS REPORT FOR THE MONTH OF OCTOBER 2024

This document serves as the monthly emissions report required in terms of Section 7.6 of Matla Power Station Provisional Atmospheric Emission License (AEL), **17/4/AEL/MP312/11/14**

This report reflects Unit 1 to Unit 6 gaseous and particulate emissions performance against the AEL limit for the month of OCTOBER 2024 only.

2. Raw Materials and Products

Table 1- Quantity of Raw Materials and Products Consumption in 10/2024

Raw Materials and Products used	Raw Material Type	Unit	Maximum Permitted Consumption/ Rate (Quantity)	Consumption – 10/2024
	Coal	Tons/month	1 475 000	788 227
	Fuel Oil	Tons/month	3 500	663
Production Rates	Product/ By-Product Name	Unit	Maximum Production Capacity Permitted (Quantity)	Production Rate in Month of 10/2024
	Energy	GWh	2 745	1 418
	Ash Emitted	Tons/month	471 000	239 385

3. Abatement Technology

Table 2-Abatement Equipment Control Technology Efficiency in 10/2024

Associated Unit/Stack	Technology Type	Efficiency	ESP Utilization
South Stack (Unit 1, 2 and 3)	Electrostatic Precipitators (ESP)	99.480%	100%
	Electrostatic Precipitators (ESP)		
	Electrostatic Precipitators (ESP)		
Unit 4	Electrostatic Precipitators (ESP)	*99.698%*	100%
Unit 5	Electrostatic Precipitators (ESP)	*99.812%*	100%
Unit 6	Electrostatic Precipitators (ESP)	*99.276%*	100%

4. Energy Source Characteristics

Table 3: Energy Source Material Characteristics for 10/2024

Characteristic	Stipulated Range (% by weight on a dry basis)	Monthly Average Content (% by weight on a dry basis)
	Coal	
Sulphur Content	0.8-1.1	1.00
Ash Content	21-40	30.37

5. Emissions Reporting

Table 4- Emission Limits are as follows:

SO_2 Monthly = 3500 mg/Nm^3	Dust Daily= 200 mg/Nm^3 (South Stack and Unit 4) Dust Daily= 100 mg/Nm^3(Unit 5 and 6)	NO_2 Daily= 1200 mg/Nm^3

5.1 PM Daily Averages

Figure 1: Matla South Stack PM Emissions - October 2024

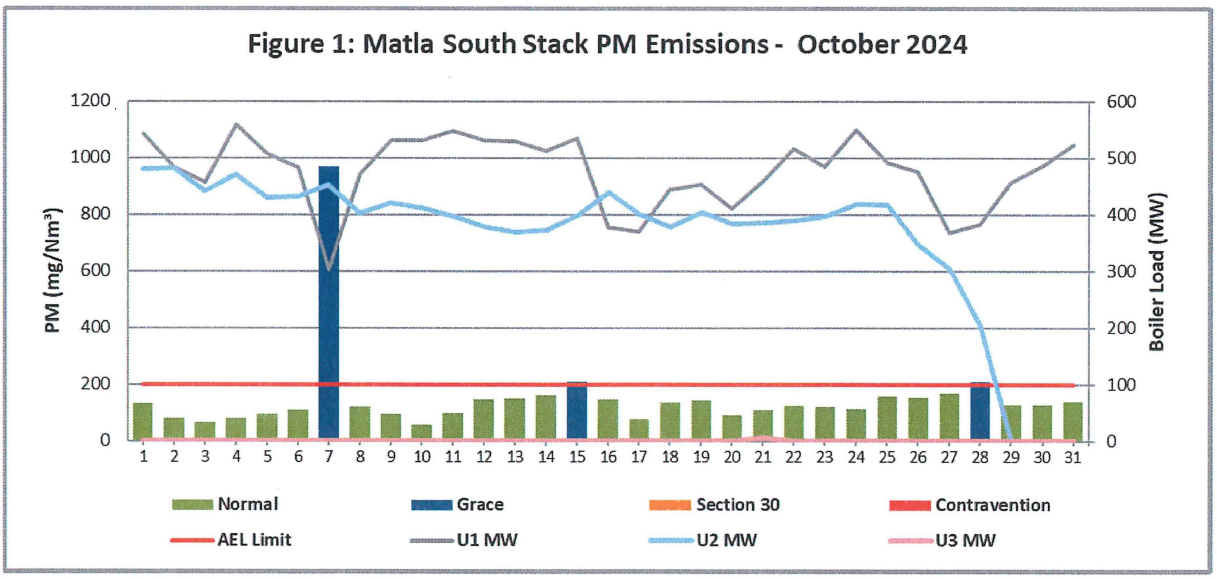


Figure 2: Matla Unit 4 PM Emissions - October 2024

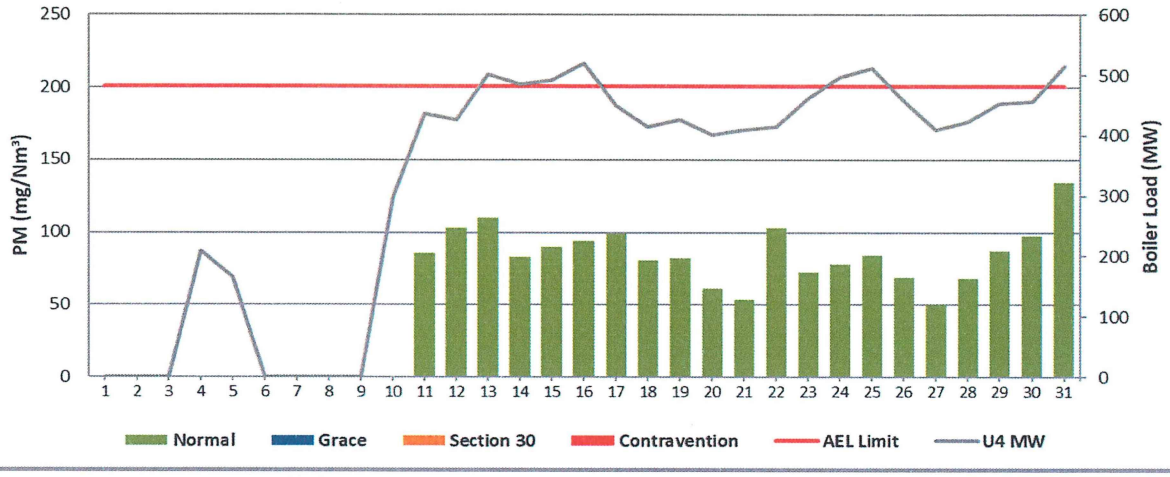
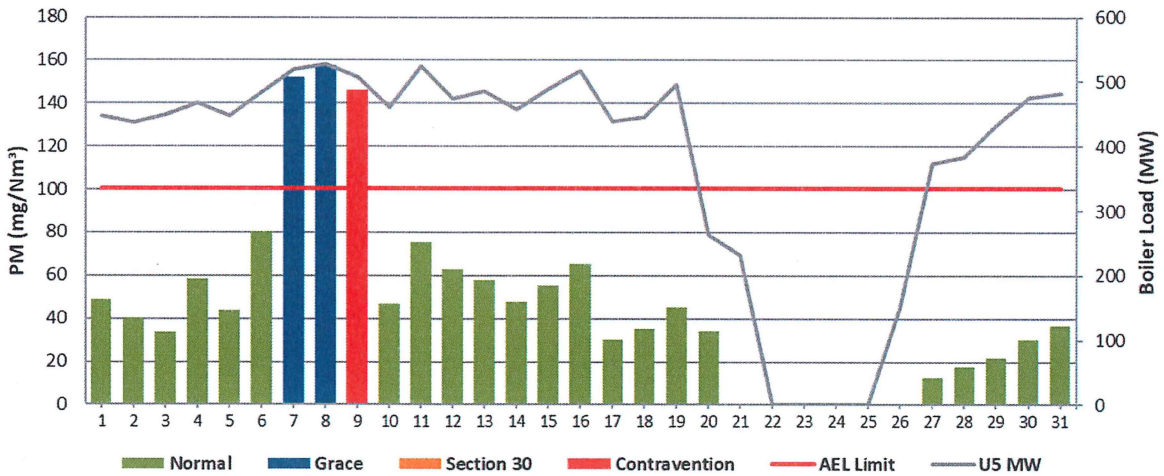


Figure 3: Matla Unit 5 PM Emissions - October 2024

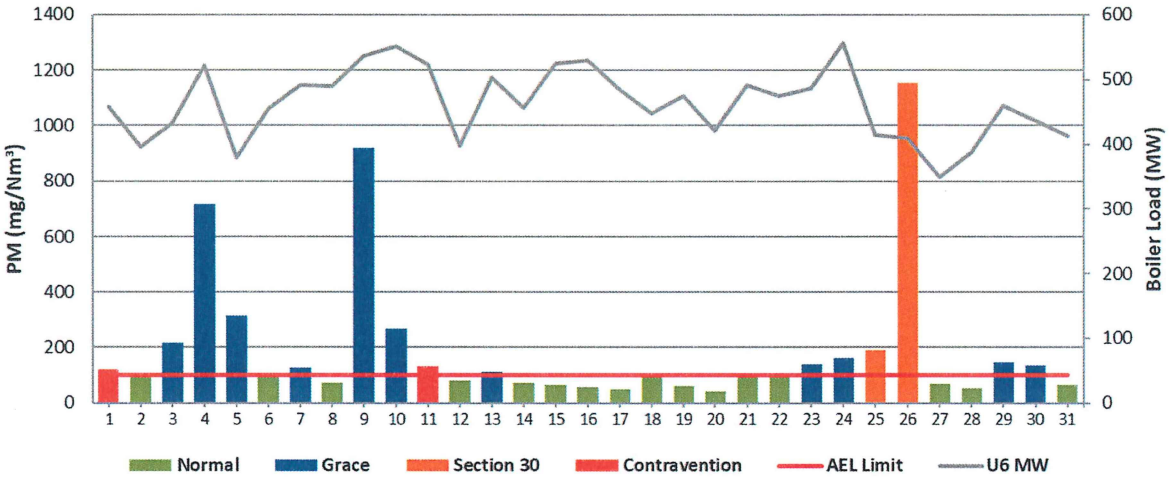


Unit 5 at Matla Power Station incurred PM emissions exceedances which exceeded the 48 -hour upset conditions and resulted in a legal contravention against the station's AEL. The Exceedances at unit 5 were due to poorly performing precip fields which started on the 07th to the 09th of October 2024, where L/H precip field 1 to 4 dropped to below 200 mA for prolonged time. The Dust Handling Plant (DHP) hopper levels accumulation resulting to blockages on the conveying lines which caused L/H Row 2 & 4 to trip. On the 09th of October 2024, the hoppers with levels reduced and recovery was demonstrated. The following actions were done to ensure the emissions are within limit:

- Reset and restart the Precips on the (L/H 1 to L/H 4),
- Rapping L/H Precip field 4 and 3
- Clearing of hopper levels with vacuum trucks.

- unblocking the L/H Row 2 and 4.

Figure 4: Matla Unit 6 PM Emissions - October 2024



Matla Power Station unit 6 incurred PM emissions exceedances which exceeded the 48 -hour upset conditions and resulted in a legal contravention against the station's AEL.The Exceedances were due to unavailability of SO_3 plant.

On the 30 of September 2024 the ESP performance dropped at (04:01) until the 1st of October 2024 at (19:35) the poorly performing on L/H Precip field 1 was poor performing as well as L/H Precip field 2, their milli Amps were trending below 200 mA. The SO_3 plant was out of service on the 30th of September 2024 just after midnight at (03:54), due to burner inspection stub valve failure and malfunctioning of the SO_3 control valve (Air Leak) and the SO_3 plant was back in service at (11:24) on the same day.

On the 09 – 11 October 2024 at (13:11) the SO_3 plant was unavailable, due to burner inspection stub valve failure recurring, however the SO_3 was back in service on the 10 of October at (06:02), resulting to emission exceedance. The following corrective actions were taken:

- Repair the inspection valve,
- Repaired the air leak on the SO_3 control valve put SO_3 back in service after the leak repairs.
- Reset and re-start (L/H Precip field8)
- Rapping done on L/H Precip field 2, 4 and 6
- Unblocking of the Dust Handling Plant on L/H Row 1 and R/H 2.

Matla Power Station unit 6 incurred PM emissions exceedances which exceeded the 48 -hour upset conditions and resulted in a Section 30 incident on 25 October 2024. Unit 6 exceeded the AEL limit due to failed rapping system. L/H Precip field 6 and 8 failed causing a partial free flow on Precip path 2,4,6 and 8. This failure was unexpected.

On the 23 October 2024, unit 6 started exceeding due to failed rapping system and high hopper levels. The rapping system was discovered to be defective and almost half of DE rappers were not working on auto. This resulted on poor Precip fields performance.

On the 24 October 2024, L/H Precip field 6 was lost adding to the poor performance of the precips and the unit was not able to recover. Manual rapping was attempted, and it assisted temporarily however emissions continued to be above the limit.

On the 25 October 2024 L/H Precip field 8 failed due to broken insulators which caused a dead short. With 2 Precip fields off following each other there was a partial free flow which resulted on high emissions.

On the 26 October L/H Precip fields Permit to work was taken for open circuit test for L/H Precip field 8. Transformer was tested successfully, and further fault finding was done. Upon inspections of the DE insulators, the insulators were found broken and caused a dead short, this resulted to high Particulate Emissions. The station requires unit 6 outage/ shut down to address the rapping defects, which is planned for November 2024.

5.2 Sox Daily Averages

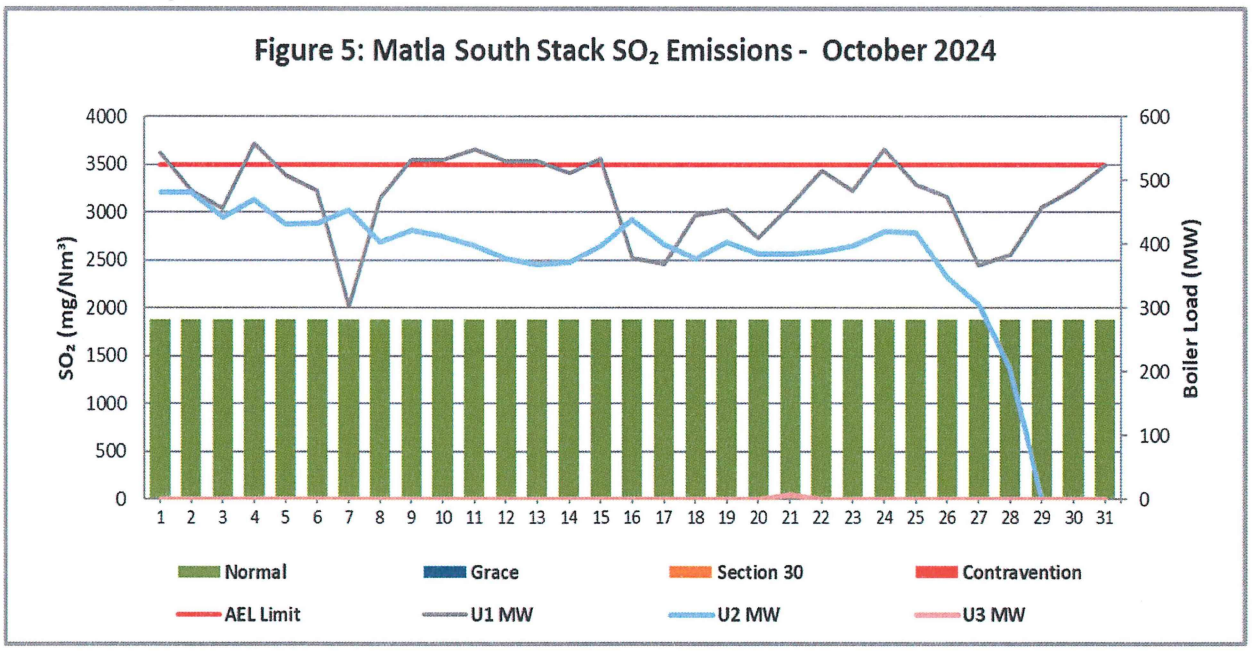


Figure 6: Matla Unit 4 SO_2 Emissions - October 2024

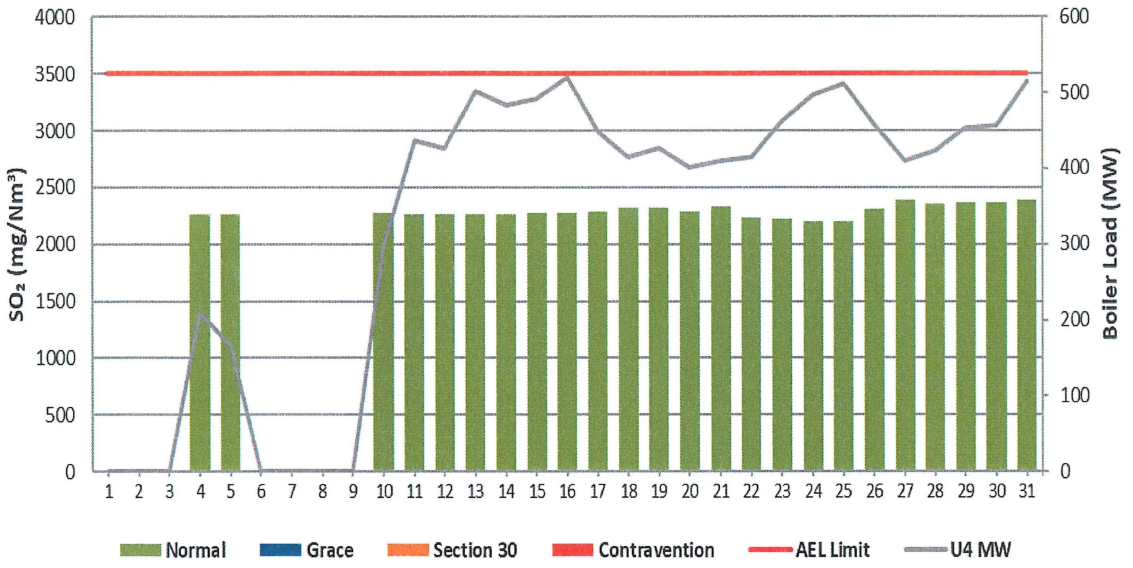
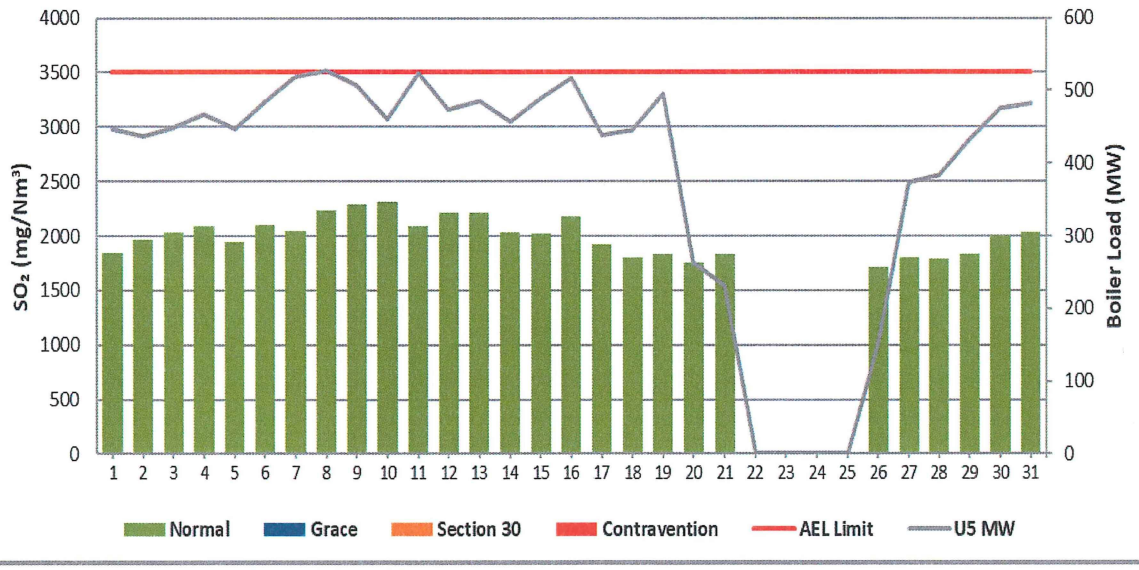
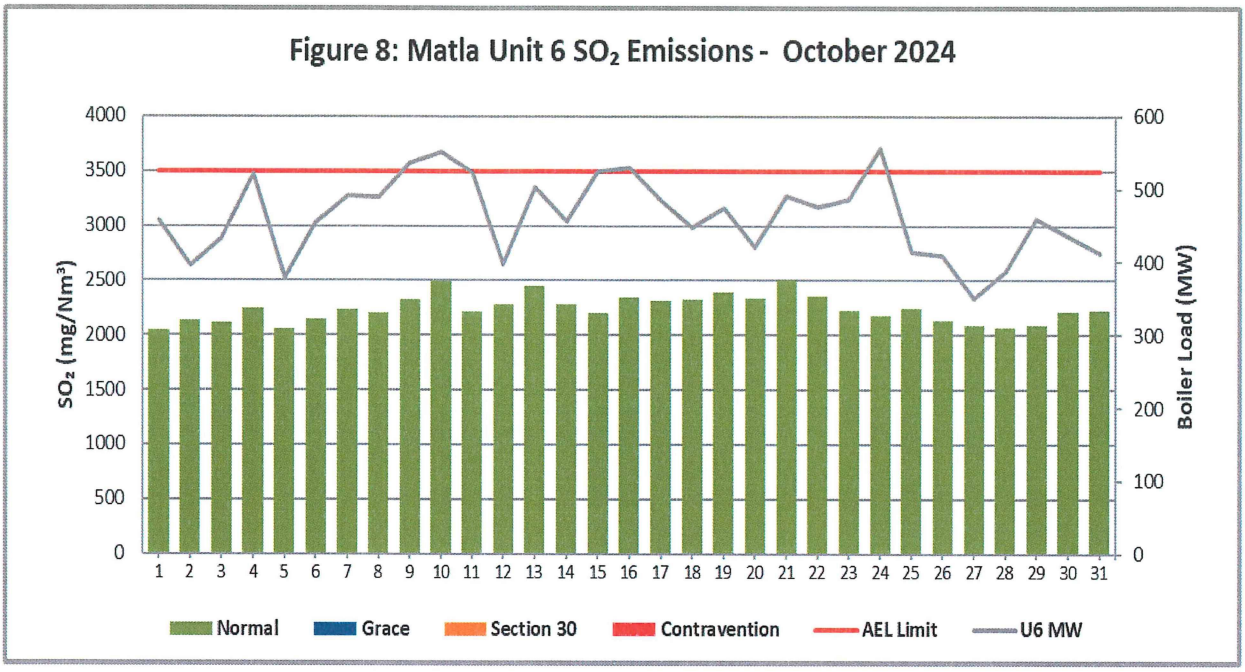


Figure 7: Matla Unit 5 SO_2 Emissions - October 2024





5.3 NOx Daily Averages

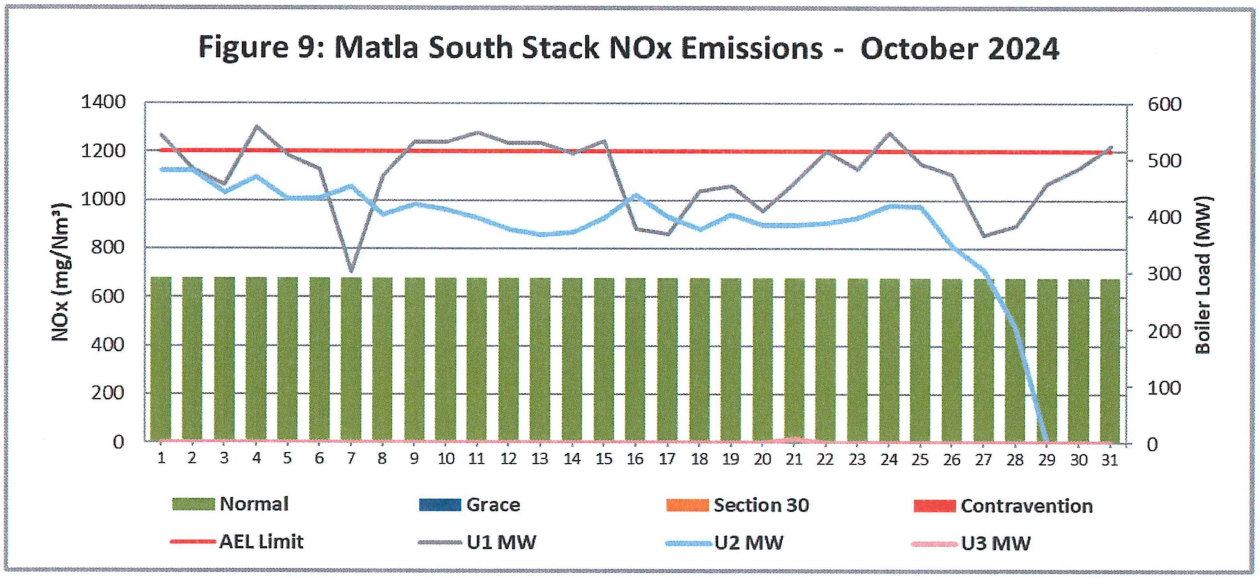


Figure 10: Matla Unit 4 NOx Emissions - October 2024

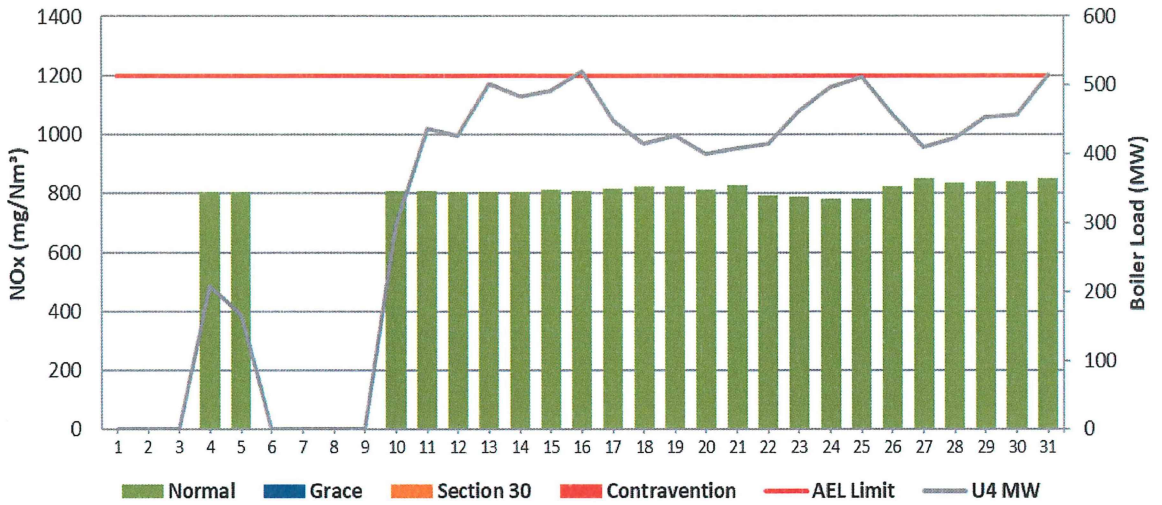
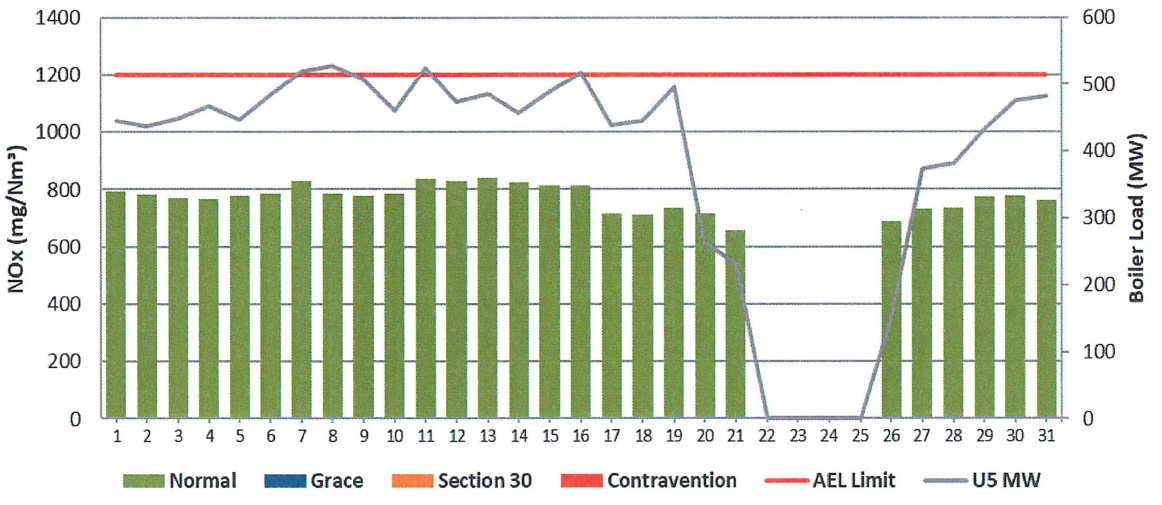


Figure 11: Matla Unit 5 NOx Emissions - October 2024



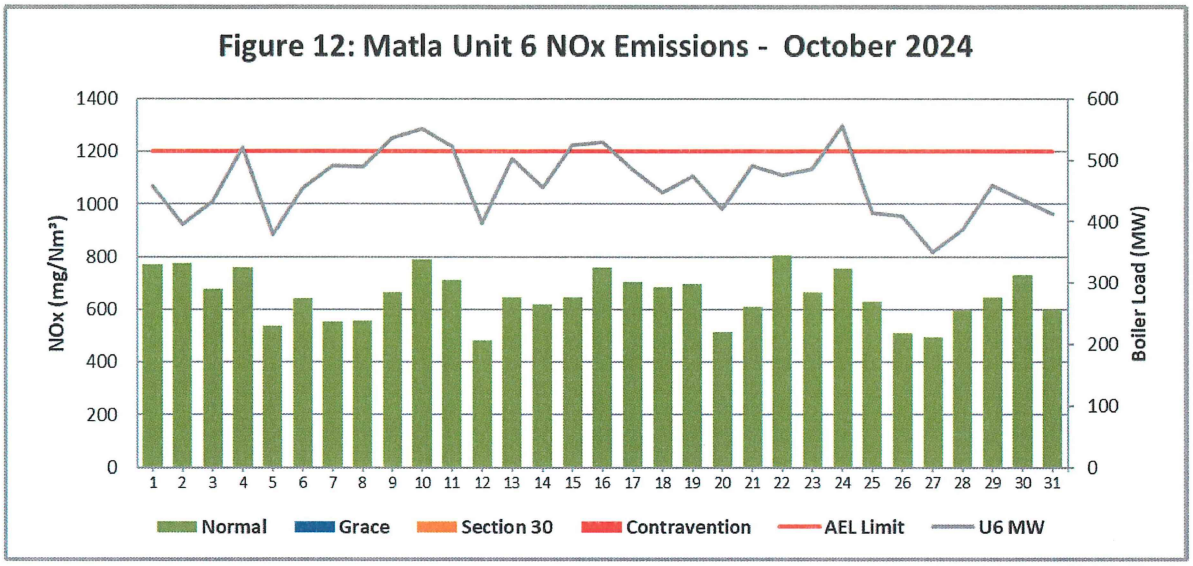


Table 5-Monthly Tonnages for 10/2024

Associated Unit/Stack	PM	SO_2	NO_2
Unit 1	155.4	2 108.8	760.5
Unit 2	320.4	3 925.9	1 415.7
Unit 3	0.0	0.0	0.0
Unit 4	106.8	2 853.7	1 014.9
Unit 5	80.2	2 705.6	1 043.3
Unit 6	332.5	4 400.9	1 289.7
SUM	995.3	15 994.9	5 524.1

Table 6-Monthly Averages Concentration for 10/2024 in mg/Nm^3

Associated Unit/Stack	PM	SO_2	NO_2
South Stack	153.2	1 879.0	677.6
Unit 4	85.2	2 291.9	815.1
Unit 5	57.2	1 996.8	771.5
Unit 6	170.9	2 242.7	653.1

6. Continuous Emissions Monitoring System (CEMS)

Table 7- Periods during which was inoperative/malfunctioning.

Date	CEMS status	Comments
27 September 2024 -28 October 2024	Malfunctioning	South stack gas emissions monitor lost indication signals on the 27 September 2024 due to the faulty fibre-optic (Communication cable) on both Procal server, and DCS / 800xA (HMI). Upon inspection it was found that there were also damaged number of cables going to the smokestack including the communication cable. The damaged communication cable was repaired on the 28 October 2024 and the fibre cable was pulled inside the trunking, terminated and the gas monitor signals on the south stack were restored on DCS and 800xA (HMI) on the 29 October 2024 (the works were delayed due to unavailability of the lift at Matla South Stack). The parallel tests averages were used in the absence of data for reporting purposes.

Table 8-CEMS Monitor Reliability Percentage

Associated Unit/Stack	PM	SO_2	NO_2	O_2
South Stack	-	-	-	-
Unit 4	100.0	99.9	99.9	99.9
Unit 5	99.8	98.9	98.9	100.0
Unit 6	86.7	99.3	99.3	100.0

7. CEMS Calibration and Equipment Used for Calibration

Calibration certificates to be made available upon request.

8. Validity of Correlation and Parallel Test

Table 9-Validity of Correlation and Parallel Test.

Associated Unit/Stack	Correlation Test (PM)	Parallel Test (NO_2, CO_2, O_2, SO_2)
South Stack	Invalid Since 31 August 2024, Target completion Date for the Test is 31 December 2024. Delayed due to poor emissions performance on South Stack.	Valid until 30 October 2025
Unit 4	Valid until 30 July 2025	Valid until 30 April 2025
Unit 5	Valid Until 25 August 2026	Valid until 30 April 2025
Unit 6	Valid until 02 August 2026	Valid until 30 June 2025

9. Complaint Register

Table 10-Complaints for the month of 10/2024

Source Code/ Name	Air pollution complaints received	Calculation of Impacts/ emissions associated with the incident	Date of complaint and date of response by the license holder	Action taken to resolve the complaint	Date when the action was implemented.
N/A	N/A	N/A	N/A	N/A	N/A