Eskom

The Municipal Manager
Gert Sibande District Municipality
PO Box 1748
ERMELO
2350

E-mail: records@gsibande.gov.za
Email: dan.hlanyane@gsibande.gov.za

Date: 11 July 2024

Enquiries: X. Jila

Tel +27 17 749 5100

Dear Mr Hlanyane

TUTUKA POWER STATION MONTHLY REPORT FOR JUNE 2024

This serves as the monthly report required in terms of Section 7.4 of Tutuka Power Station's Atmospheric Emission License (16/4/Lekwa/Eskom H SOC Ltd TPS/0013/2019/f03). The report includes verified emissions for Particulate Matters, Sulphur, and Nitrogen dioxides for the month of March 2024

The report presents monthly trends for each monitored pollutant. Unit 6 was offload for the month of June 2024. There were only two exceedances for Particulate Matter recorded in units 1 and 2 combined, which fell within the 48-hour period allowed for start-ups, maintenance and shut down.

1 RAW MATERIALS AND PRODUCTS

Raw Materials and Products	Raw Material Type	Units	Max. Permitted	Actual Consumption Jun-2024
	Coal	Tons	*1 200 000*	*288 810*
	Fuel Oil	Tons	*10 000*	*3793.06*
Production Rates	**Product / By-Product Name**	**Units**	**Max. Production Capacity Permitted**	**Indicative Production Rate Jun-2024**
	Energy	GWh	*2 527*	*657.5*
	Ash	Tons	*350 000*	*500.8*
	RE Ash	kg/MWh	*not specified*	*0.79*

Note: Maximum energy rate is as per the maximum capacity stated in the AEL: [3 510 MW] x 24 hrs x days in Month/1000 to convert to GWh

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2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
CV Content	MJ/kg	*16-24*	*21.670*
Sulphur Content	%	*0.6 TO 2.6*	*1.100*
Ash Content	%	*21 TO 33*	*24.990*

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SO_2	NOx
Unit 1	*300*	*3400*	*1200*
Unit 2	*300*	*3400*	*1200*
Unit 3	*300*	*3400*	*1200*
Unit 4	*300*	*3400*	*1200*
Unit 5	*300*	*3400*	*1200*
Unit 6	*300*	*3400*	*1200*

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Jun-2024
Unit 1	*Electro Static Precipitators (ESP)*	*-159.3%*
Unit 2	*Electro Static Precipitators (ESP)*	*#DIV/0!*
Unit 3	*Electro Static Precipitators (ESP)*	*100.0%*
Unit 4	*Electro Static Precipitators (ESP)*	*99.4%*
Unit 5	*Electro Static Precipitators (ESP)*	*100.0%*
Unit 6	*Electro Static Precipitators (ESP)*	*Unit Off*

Note: The ESP does not have bypass mode operation, hence plant considered 100% Utilised.

5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO_2	NO	O_2
Unit 1	*100.0*	*100.0*	*100.0*	*97.8*
Unit 2	*100.0*	*100.0*	*34.9*	*97.3*
Unit 3	*100.0*	*0.0*	*0.0*	*0.0*
Unit 4	*100.0*	*0.0*	*100.0*	*0.0*
Unit 5	*100.0*	*100.0*	*100.0*	*75.2*
Unit 6	*Off*	*Off*	*Off*	*Off*

Gas monitors were faulty and surrogate values were used in unit 2 and 5

6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of June-2024

Associated Unit/Stack	PM (tons)	SO_2 (tons)	NO_x (tons)
Unit 1	230.8	1 791	776
Unit 2	39.0	301	174
Unit 3	2.9	10	4
Unit 4	216.9	4 115	1 981
Unit 5	11.2	242	89
Unit 6	Off	Off	Off
SUM	500.8	6 459	3 023

Table 6.2: Operating days in compliance to PM AEL Limit - June 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm³)
Unit 1	20	0	0	0	0	202.9
Unit 2	8	1	0	0	1	236.6
Unit 3	0	1	0	0	1	485.0
Unit 4	27	0	0	0	0	107.8
Unit 5	4	0	0	0	0	124.4
Unit 6	Off	Off	Off	Off	Off	Off
SUM	**59**	**2**	**0**	**0**	**2**	

Table 6.3: Operating days in compliance to SO_2 AEL Limit - June 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO_2 (mg/Nm³)
Unit 1	22	0	0	0	0	1 577.3
Unit 2	13	0	0	0	0	1 747.5
Unit 3	3	0	0	0	0	1 669.6
Unit 4	27	0	0	0	0	2 054.2
Unit 5	5	0	0	0	0	2 131.9
Unit 6	Off	Off	Off	Off	Off	Off
SUM	**70**	**0**	**0**	**0**	**0**	

Table 6.4: Operating days in compliance to NOx AEL Limit - June 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm³)
Unit 1	22	0	0	0	0	682.6
Unit 2	13	0	0	0	0	966.5
Unit 3	3	0	0	0	0	606.0
Unit 4	27	0	0	0	0	988.4
Unit 5	5	0	0	0	0	781.0
Unit 6	Off	Off	Off	Off	Off	Off
SUM	**70**	**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: Tutuka Unit 1 PM Emissions - June 2024

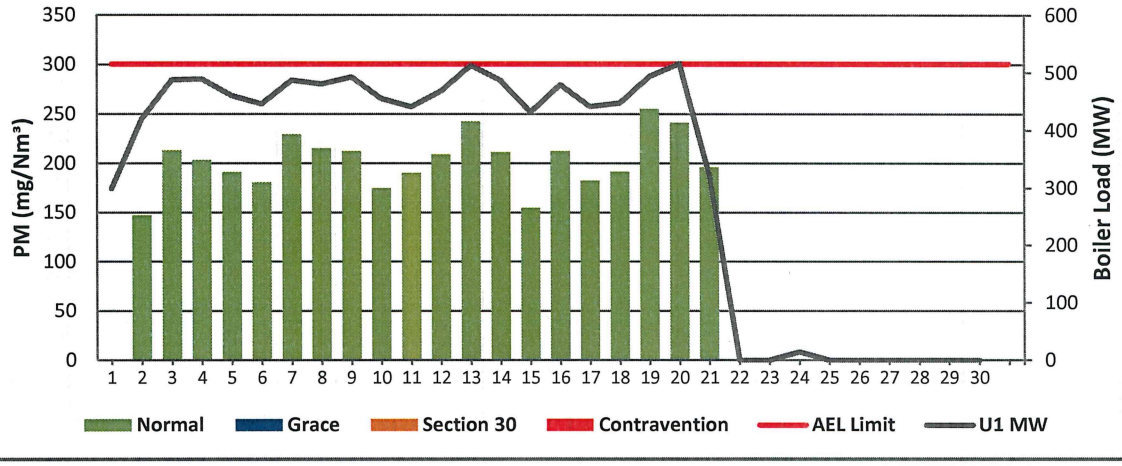


Figure 2: Tutuka Unit 2 PM Emissions - June 2024

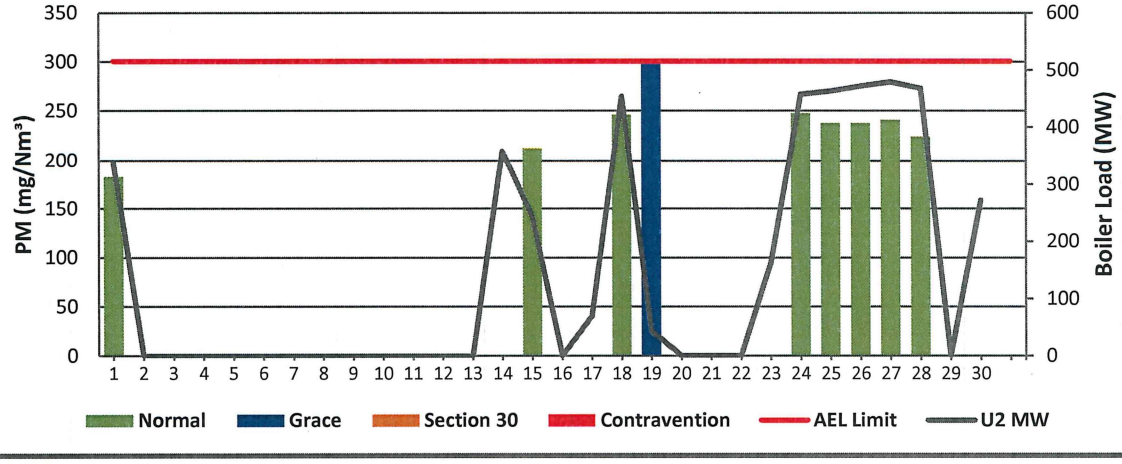


Figure 3: Tutuka Unit 3 PM Emissions - June 2024

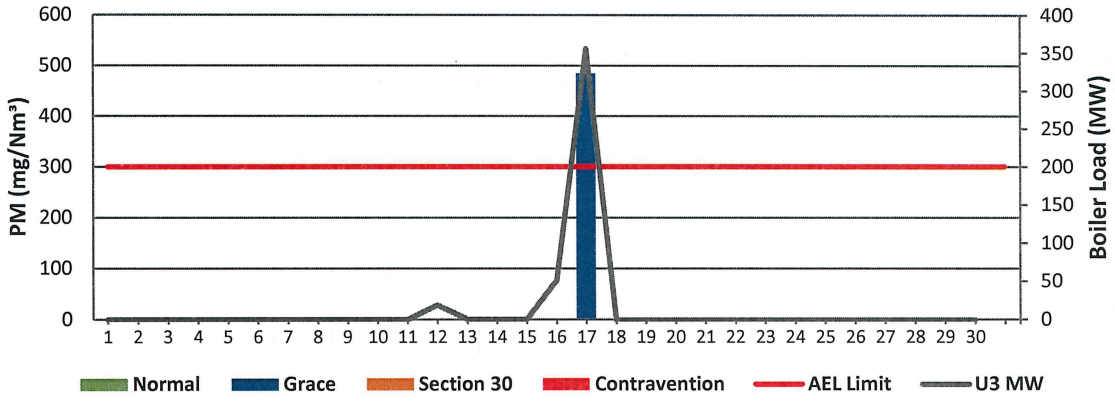


Figure 4: Tutuka Unit 4 PM Emissions - June 2024

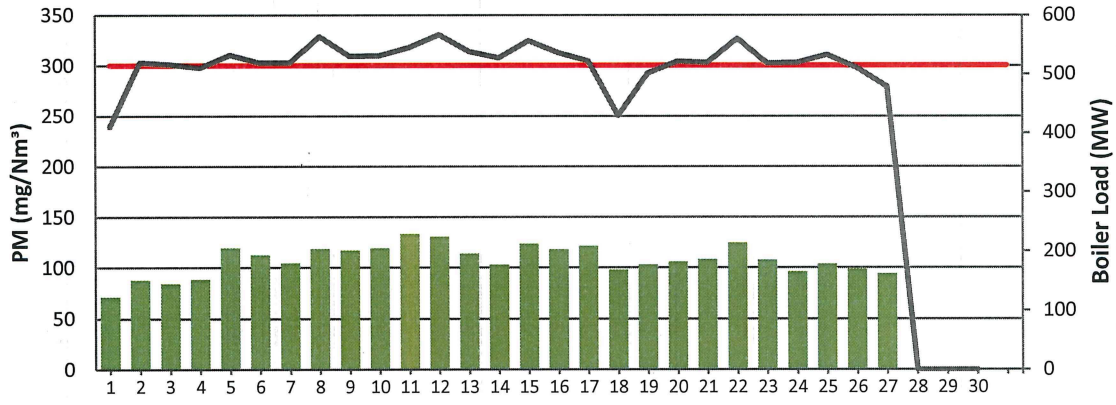


Figure 5: Tutuka Unit 5 PM Emissions - June 2024

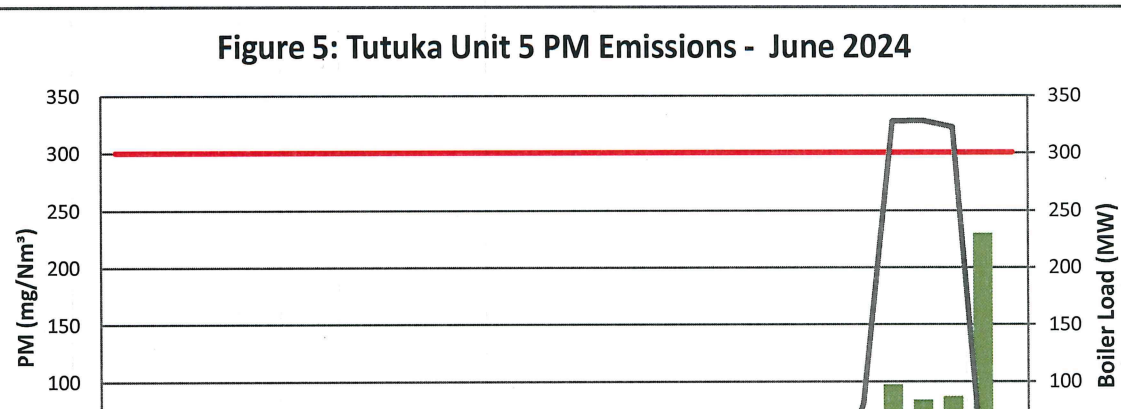


Figure 7: Tutuka Unit 1 SO_2 Emissions - June 2024

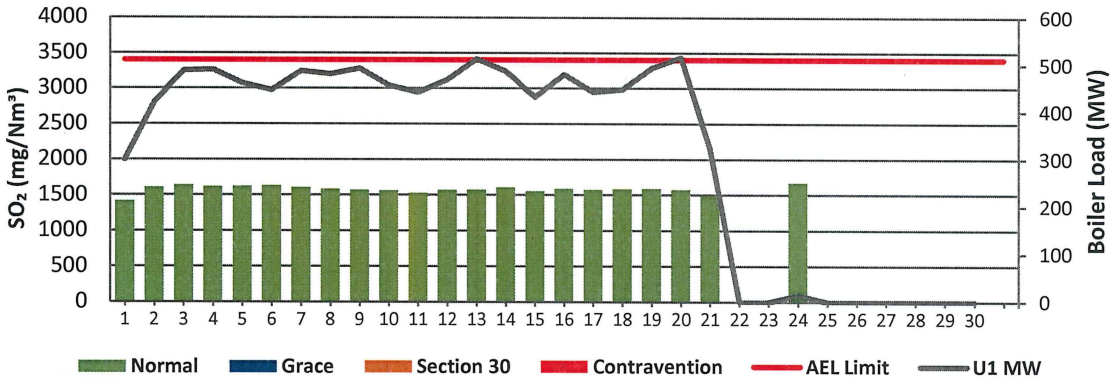


Figure 8: Tutuka Unit 2 SO_2 Emissions - June 2024

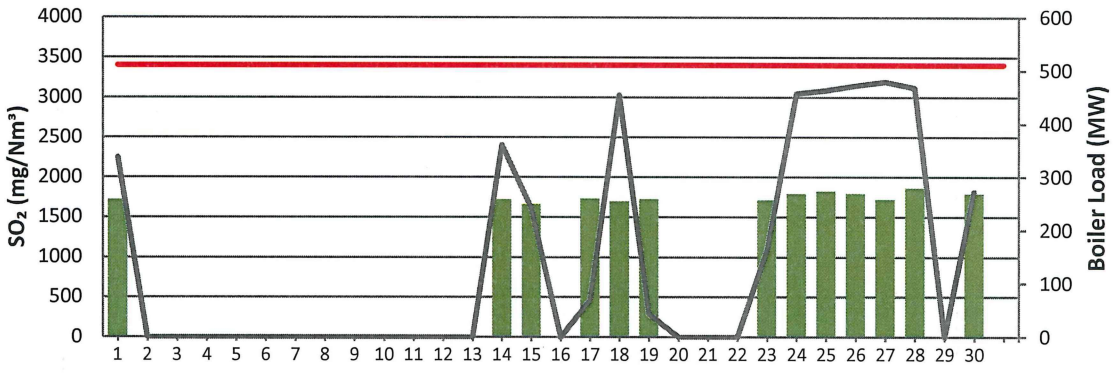


Figure 9: Tutuka Unit 3 SO_2 Emissions - June 2024

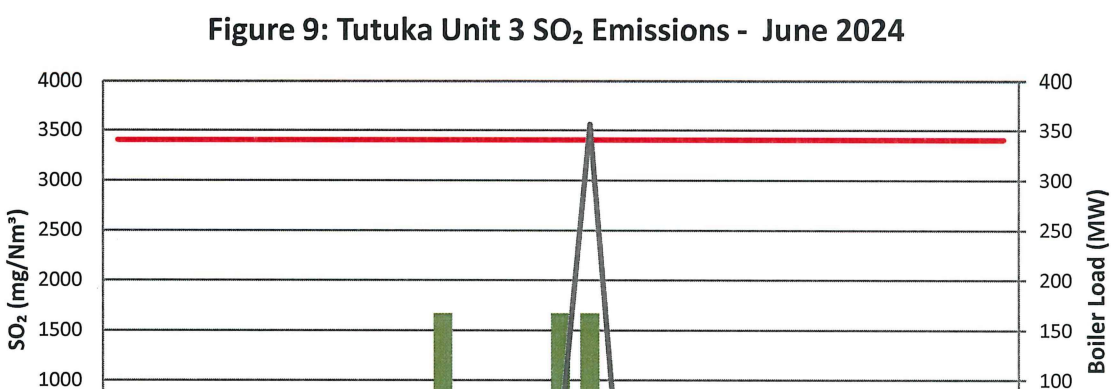


Figure 10: Tutuka Unit 4 SO_2 Emissions - June 2024

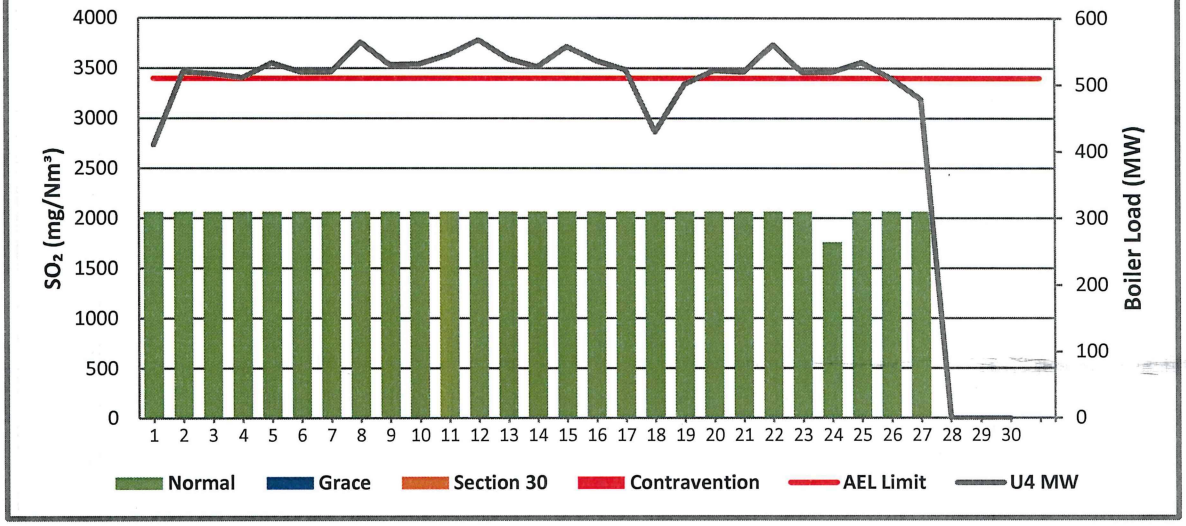
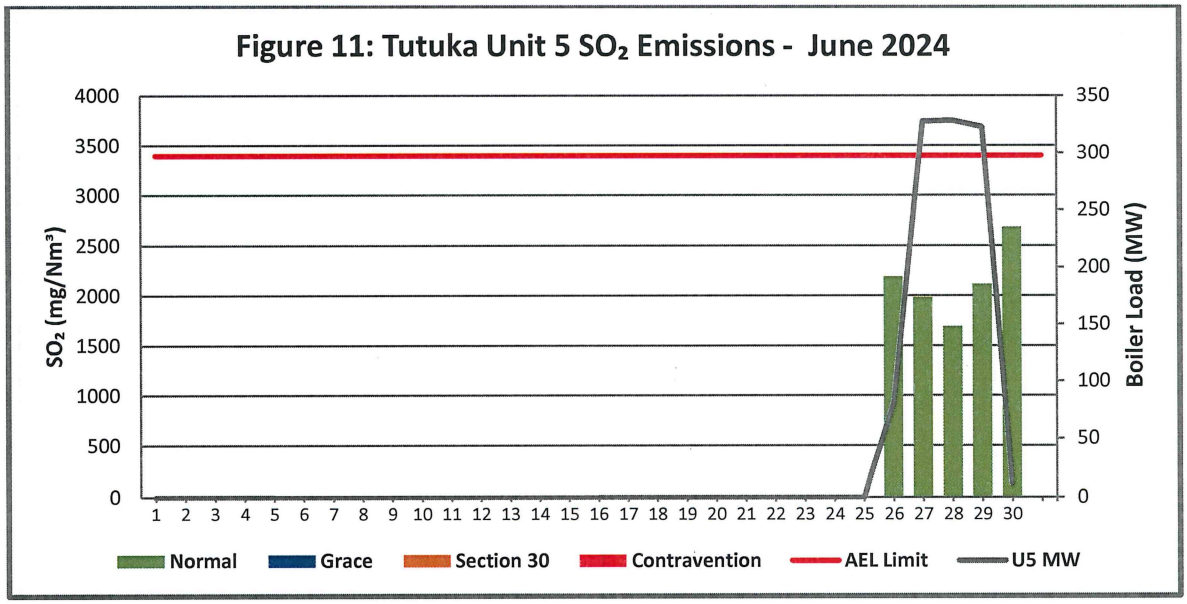


Figure 11: Tutuka Unit 5 SO_2 Emissions - June 2024



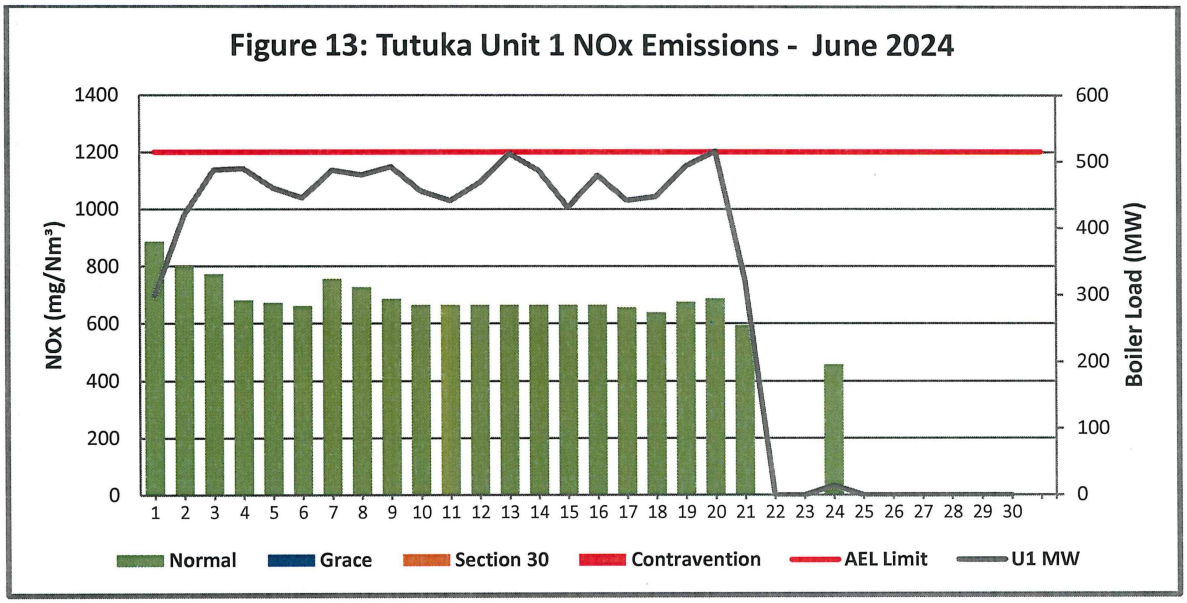


Figure 13: Tutuka Unit 1 NOx Emissions - June 2024
NOx (mg/Nm³)
Boiler Load (MW)
1400
1200
1000
800
600
400
200
0
600
500
400
300
200
100
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Normal
Grace
Section 30
Contravention
AEL Limit
U1 MW

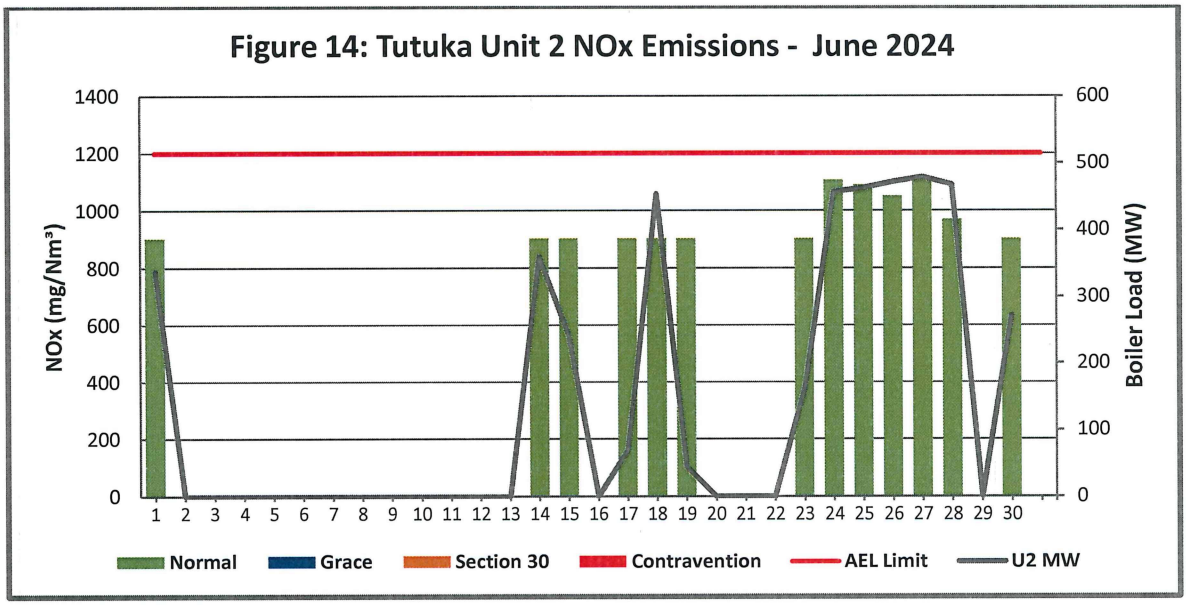


Figure 14: Tutuka Unit 2 NOx Emissions - June 2024
NOx (mg/Nm³)
Boiler Load (MW)
1400
1200
1000
800
600
400
200
0
600
500
400
300
200
100
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Normal
Grace
Section 30
Contravention
AEL Limit
U2 MW

Figure 15: Tutuka Unit 3 NOx Emissions - June 2024

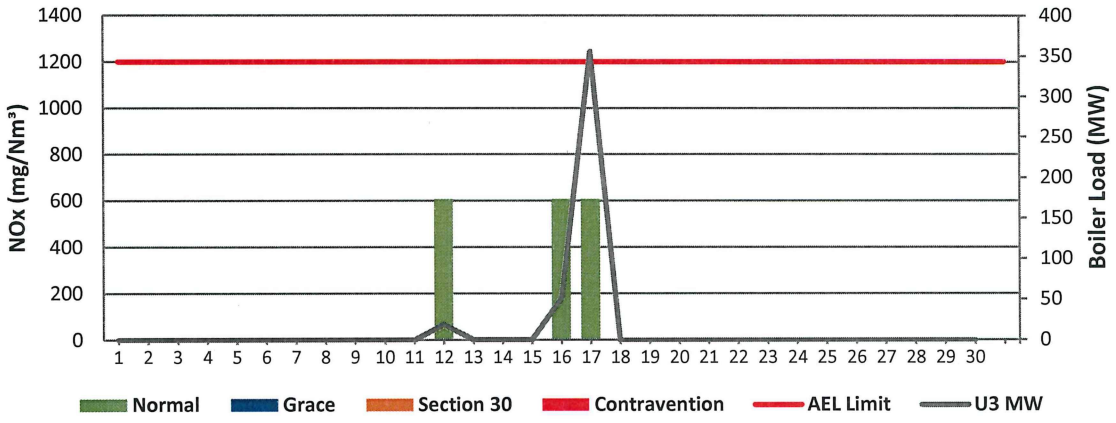


Figure 16: Tutuka Unit 4 NOx Emissions - June 2024

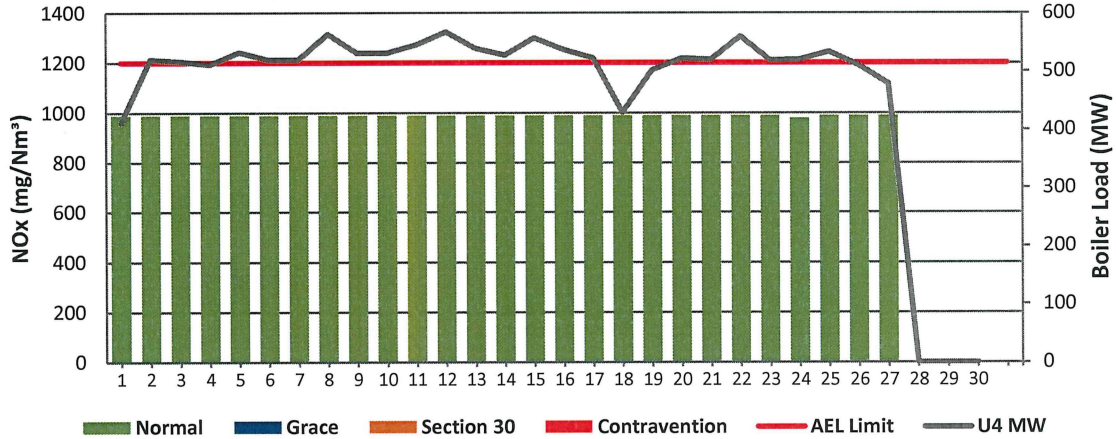
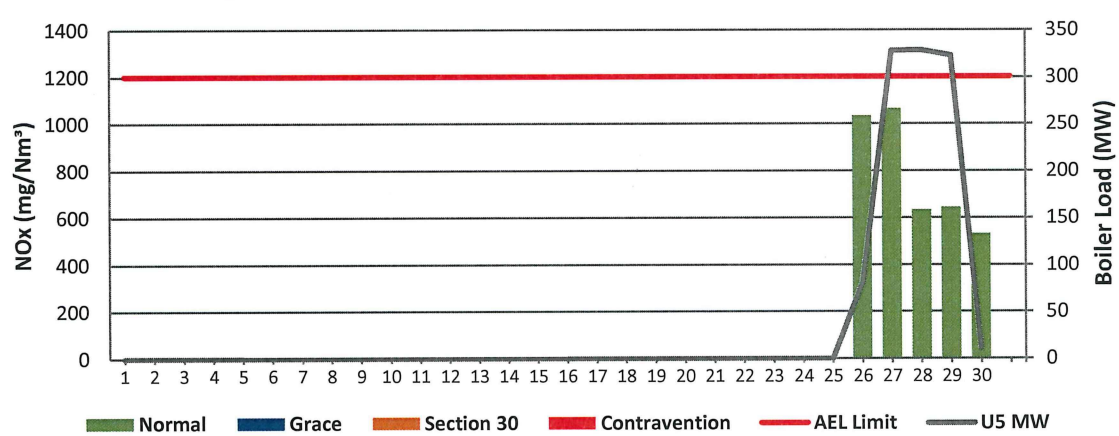


Figure 17: Tutuka Unit 5 NOx Emissions - June 2024



7. COMPLAINTS REGISTER

Source Code/Name	Root Cause Analysis	Calculation of Impacts/emissions associated with the incident	Dispersion modelling of pollutants where applicable	Measures implemented to prevent recurrence	Date by which measure will be implemented
No complaints were received for the month of June 2024.					

Yours Sincerely

Compiled by:

Xoli Jila

EMISSIONS CONTROL OFFICER

Supported by:

Mike Molepo

Snr CHEMIST: BOILER ENGINEERING

Approved by:

Bruce Moyo

GENERAL MANAGER