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Date: 12 December 2023

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Dear Mr Hlanyane

TUTUKA POWER STATION MONTHLY REPORT FOR NOVEMBER 2023

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 of Particulate Matters, Sulphur, and Nitrogen dioxides for the month of November 2023

The report presents monthly trends for each monitored pollutant. Units 2, 5 and 6 were offload for the month of November 2023. There was only one exceedance for Particulate Matter recorded in unit 1 which fell outside the 48-hour period allowed for start-ups, maintenance and shut down. The rest of the units operated within the limits for PMs and gases.

1 RAW MATERIALS AND PRODUCTS

Raw Materials and Products	Raw Material Type	Units	Max. Permitted	Actual Consumption Nov-2023
	Coal	Tons	1 200 000	342 999
	Fuel Oil	Tons	10 000	5540.68

Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Indicative Production Rate Nov-2023
	Energy	GWh	2 527	544.8
	Ash	Tons	350 000	84 961
	RE Ash	kg/MWh	not specified	1.09

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	21.710
Sulphur Content	%	0.6 TO 2.6	0.270
Ash Content	%	21 TO 33	24.770

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SO ₂	NO _x
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 Nov-2023
Unit 1	Electro Static Precipitators (ESP)	-68.5%
Unit 2	Electro Static Precipitators (ESP)	Unit Off
Unit 3	Electro Static Precipitators (ESP)	98.2%
Unit 4	Electro Static Precipitators (ESP)	99.5%
Unit 5	Electro Static Precipitators (ESP)	Unit Off
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	77.0	100.0	100.0	100.0
Unit 2	Off	Off	Off	Off
Unit 3	99.8	30.0	36.0	50.0
Unit 4	99.3	56.0	0.0	65.0
Unit 5	Off	Off	Off	Off
Unit 6	Off	Off	Off	Off

Note: 1. PM monitors in unit 1 maxed out due to upset conditions between 17 and 20th November 2023
 2. Units 3 and 4 gas monitors were not working properly, surrogate values from QAL2 report were inserted into the monitoring tool, to estimate the gas concentrations.

6 EMISSION PERFORMANCE

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Table 6.1: Monthly tonnages for the month of November-2023

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO _x (tons)
Unit 1	150.0	1 690	670
Unit 2	Off	Off	Off
Unit 3	242.0	3 437	1 258
Unit 4	175.7	3 420	1 244
Unit 5	Exempt	0	0
Unit 6	Off	Off	Off
SUM	567.8	8 547	3 172

Table 6.2: Operating days in compliance to PM AEL Limit - November 2023

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
Unit 1	15	2	0	2	4	201.6
Unit 2	Off	Off	Off	Off	Off	Off
Unit 3	27	0	0	0	0	166.4
Unit 4	23	0	0	0	0	119.1
Unit 5	Exempt	Exempt	Exempt	Exempt	Exempt	Exempt
Unit 6	Off	Off	Off	Off	Off	Off
SUM	65	2	0	2	4	

Table 6.3: Operating days in compliance to SO₂ AEL Limit - November 2023

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO ₂ (mg/Nm ³)
Unit 1	22	0	0	0	0	2 263.5
Unit 2	Off	Off	Off	Off	Off	Off
Unit 3	29	0	0	0	0	2 370.6
Unit 4	24	0	0	0	0	2 274.1
Unit 5	0	0	0	0	0	
Unit 6	Off	Off	Off	Off	Off	Off
SUM	75	0	0	0	0	

Table 6.4: Operating days in compliance to NO_x AEL Limit - November 2023

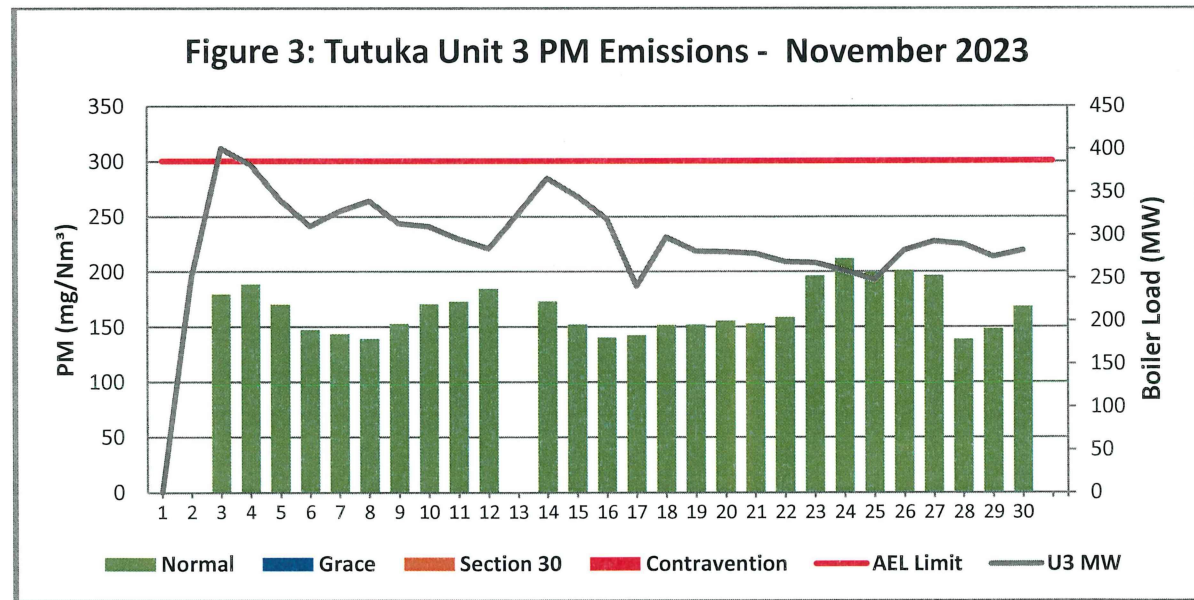
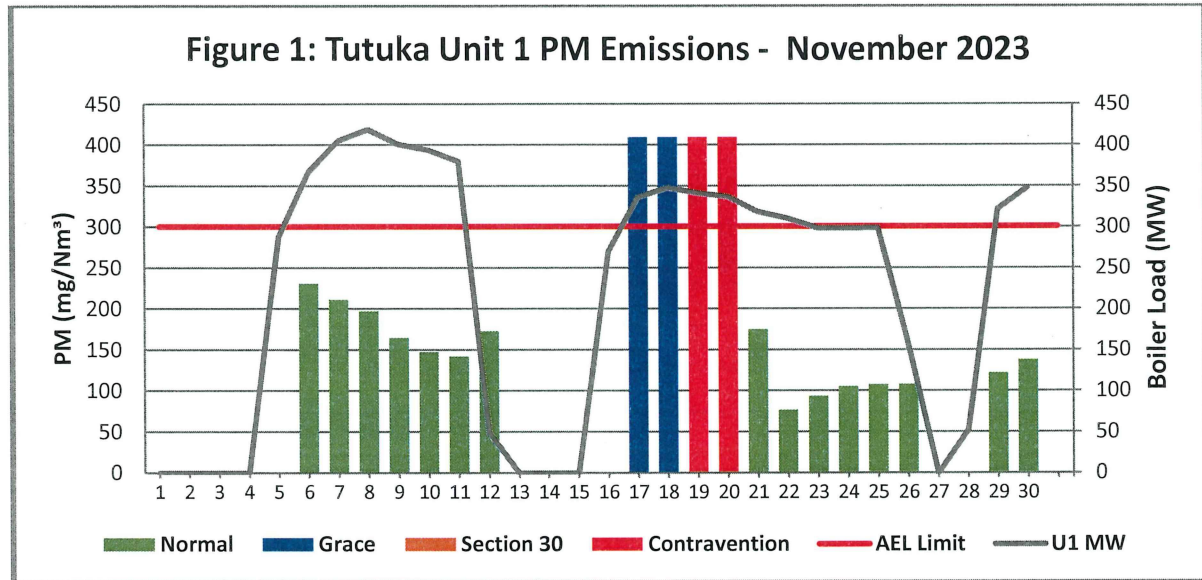
Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO _x (mg/Nm ³)
Unit 1	22	0	0	0	0	868.9
Unit 2	Off	Off	Off	Off	Off	Off
Unit 3	29	0	0	0	0	867.5
Unit 4	24	0	0	0	0	827.4
Unit 5	0	0	0	0	0	
Unit 6	Off	Off	Off	Off	Off	Off
SUM	75	0	0	0	0	

Note: NO_x emissions is measured as NO in PPM. Final NO_x value is expressed as total NO₂

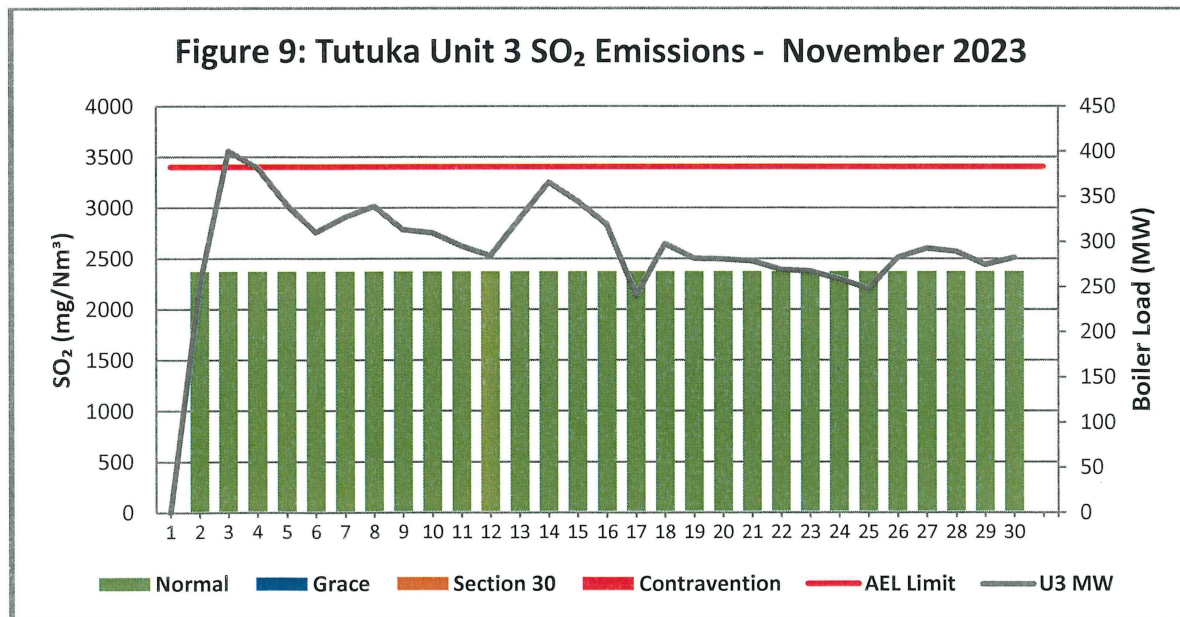
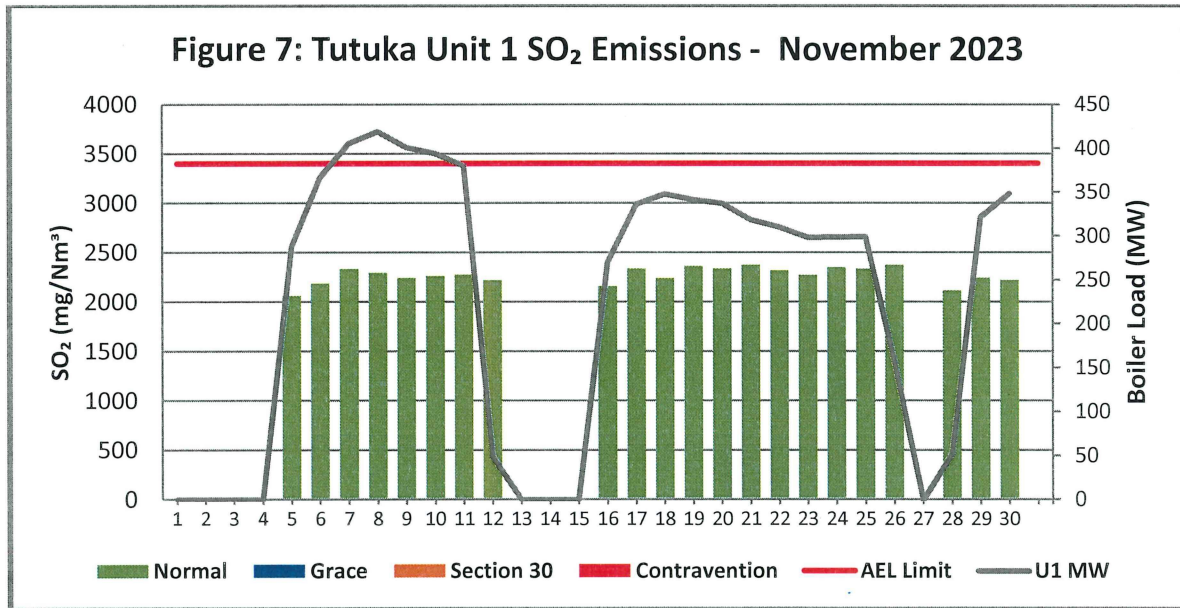
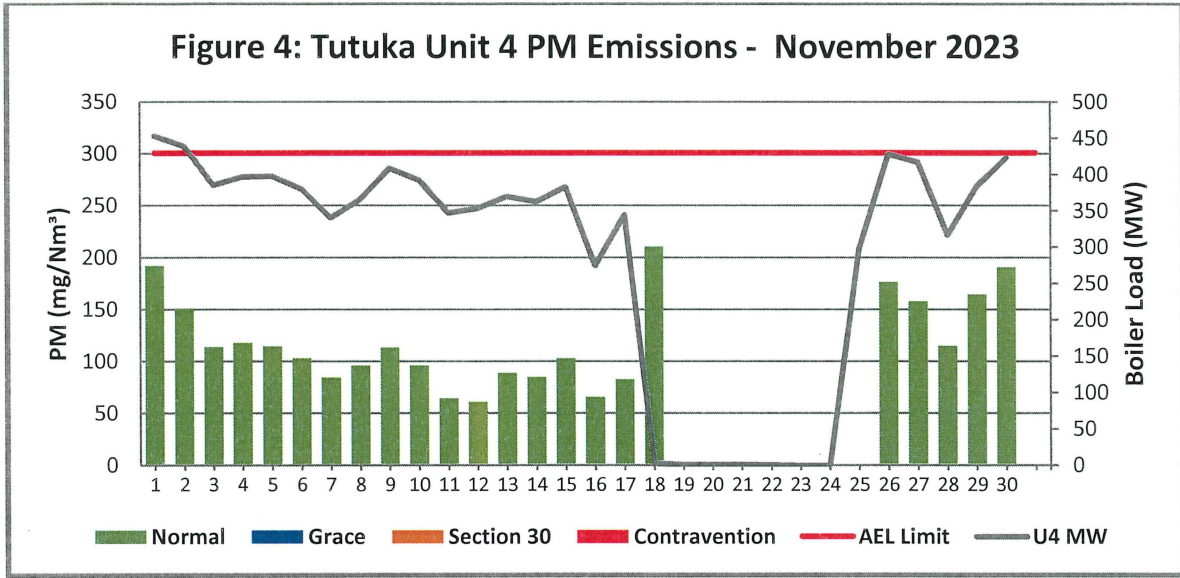
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Table 6.5: Legend Description

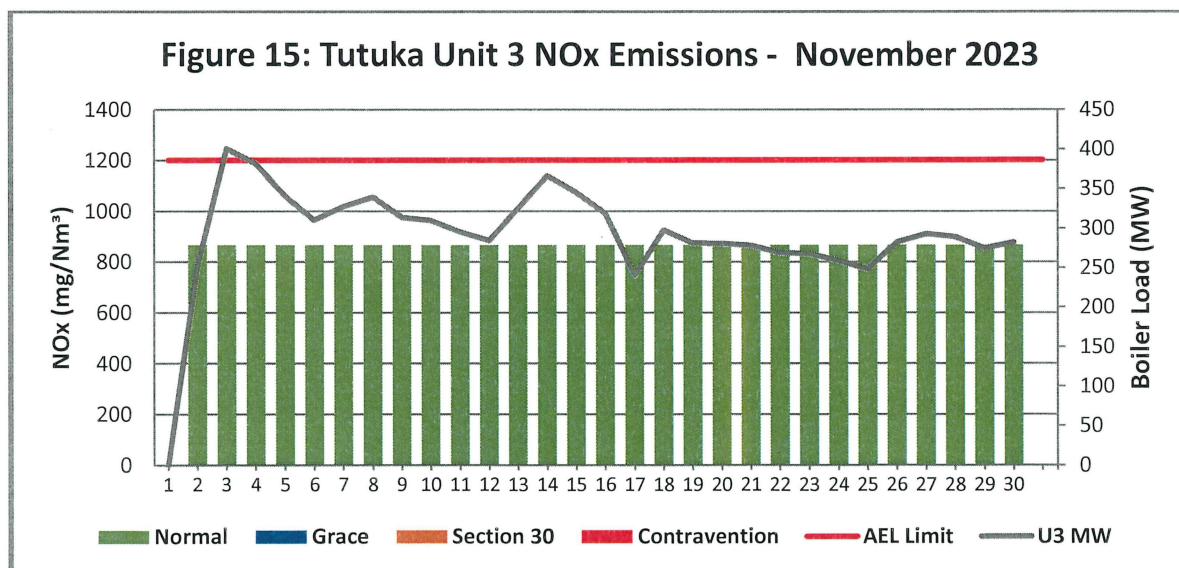
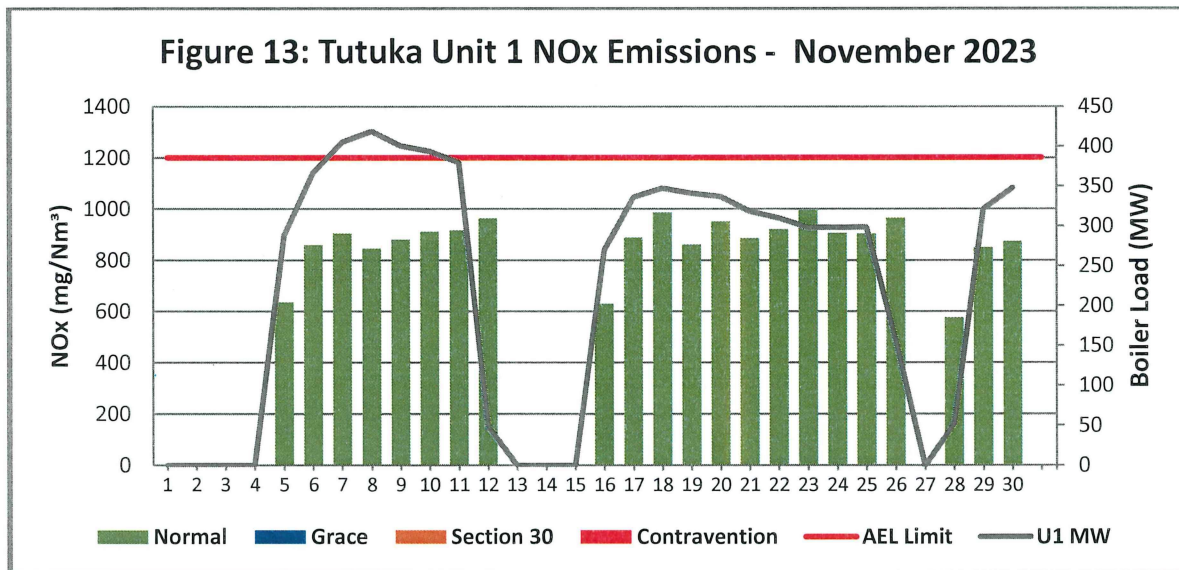
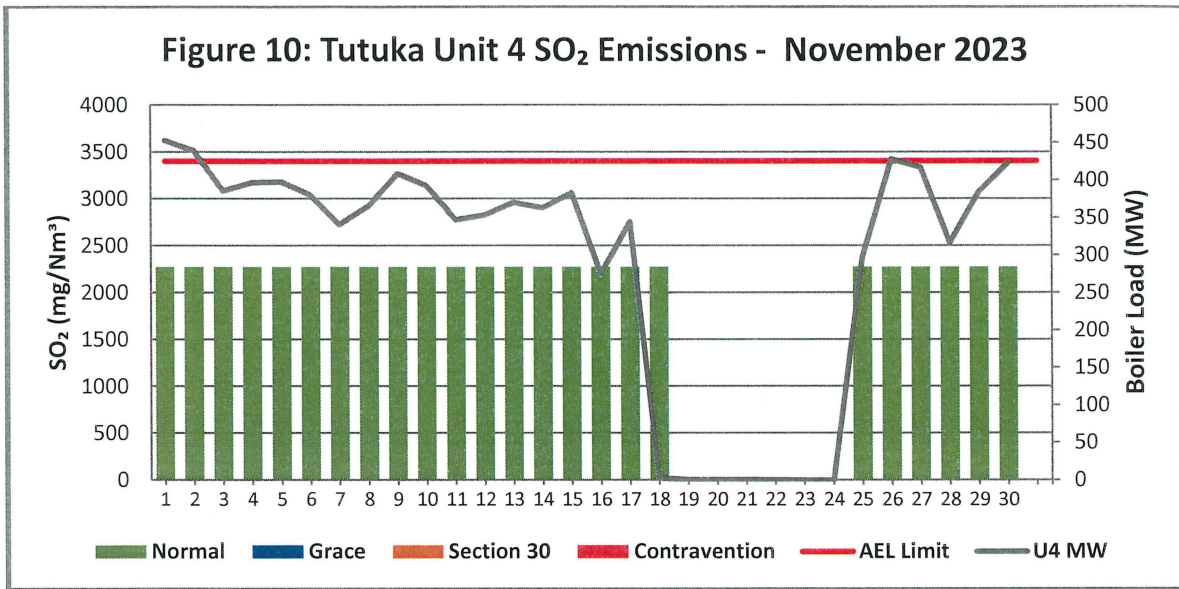
Condition	Colour	Description
Normal	Green	Emissions below Emission Limit Value (ELV)
Grace	Blue	Emissions above the ELV during grace period
Section 30	Orange	Emissions above ELV during a NEMA S30 incident
Contravention	Red	Emissions above ELV but outside grace or S30 incident conditions



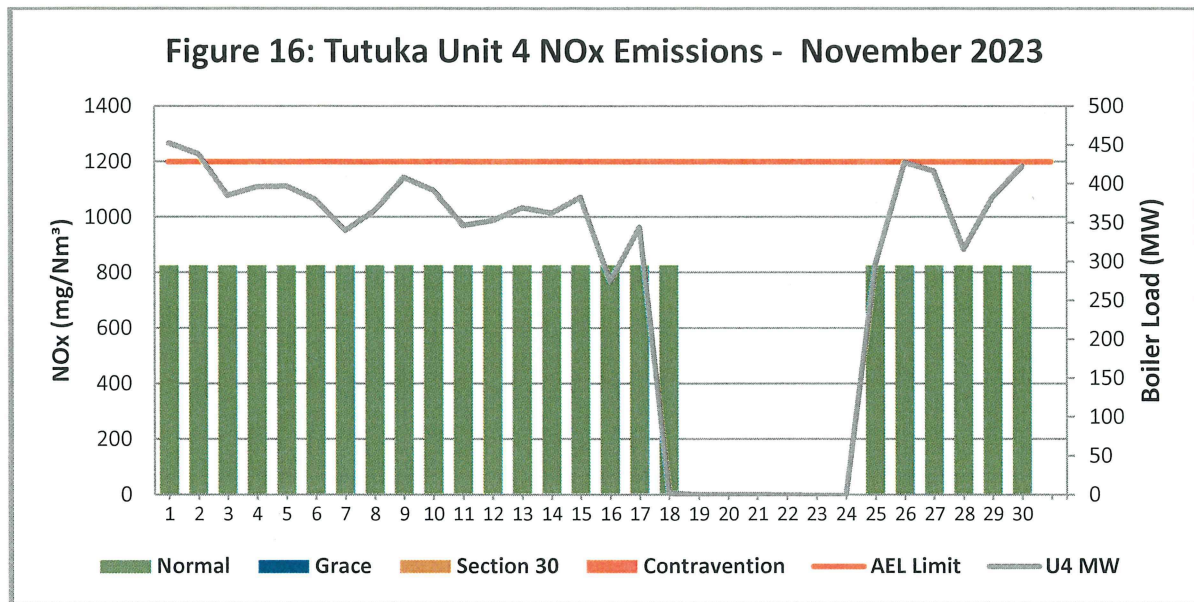
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7. COMPLAINTS REGISTER

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 November 2023.					

Yours Sincerely

Compiled by:

Xoli Jila

Xoli Jila

EMISSIONS CONTROL OFFICER

Supported by:

Mike Molepo

Mike Molepo

Snr CHEMIST: BOILER ENGINEERING

Approved by:

Bruce Moyo

Bruce Moyo

GENERAL MANAGER