

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

Date: 19 December 2022
 Enquiries: X. Jila
 Tel: +27 17 749 5100

E-mail: records@gsibande.gov.za

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

Dear Mr Hlanyane

TUTUKA POWER STATION'S MONTHLY REPORT FOR THE MONTH OF NOVEMBER 2022

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 Particulate Matters, Sulphur, and Nitrogen dioxides emissions data for the month of November 2022

The report presents monthly trends for each pollutant monitored from all the units, except units 2 and 5 which have been out of service for the month of November 2022. The Station incurred few legal contraventions in units 4 and 6.

1 RAW MATERIALS AND PRODUCTS

Raw Materials and Products	Raw Material Type	Units	Max. Permitted	Actual Consumption Nov-2022
	Coal	Tons	1 200 000	296 391
	Fuel Oil	Tons	10 000	7614.09
Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Nov-2022
	Energy	GWh	2527.2	522.3
	Ash	Tons	350 000	82 871
	RE Ash	kg/MWh	not specified	2.35

Generation Division

Tutuka Power Station
 Standerton/Bethal Road, Standerton
 Private Bag X2016, STANDERTON, 2430, SA
 Tel +27 17 7495700 Fax +27 17 7495736 www.eskom.co.za
 Eskom Holdings SOC Ltd Reg No 2002/015527/30

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
CV Content	MJ/kg	16-24	20.350
Sulphur Content	%	0.6 TO >2.6	1.100
Ash Content	%	21 TO >33	27.960

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SOx	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 Nov-2022
Unit 1	Electro Static Precipitators (ESP)	99.5%
Unit 2	Electro Static Precipitators (ESP)	
Unit 3	Electro Static Precipitators (ESP)	99.0%
Unit 4	Electro Static Precipitators (ESP)	97.4%
Unit 5	Electro Static Precipitators (ESP)	
Unit 6	Electro Static Precipitators (ESP)	98.0%

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

5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO ₂	NO	O ₂
Unit 1	99.5	25.0	25.0	25.0
Unit 2				
Unit 3	99.6	99.2	99.2	99.2
Unit 4	72.8	99.3	97.7	97.5
Unit 5				
Unit 6	92.9	99.3	99.3	99.3

Notes:

1. Poor gas monitor performance in unit 1 was due to condensate sample pumps which stopped working at some point. The service provider has recommended it to be replaced and procurement process has been initiated
2. Units 4 Particulate Matter monitors maxed due to upset plant conditions from 18 – 24 November 2022

6 EMISSION PERFORMANCE

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

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO _x (tons)
Unit 1	49.5	172	58
Unit 2	0.0	0	0
Unit 3	292.7	3 122	1 253
Unit 4	660.9	2 293	882
Unit 5	0.0	0	0
Unit 6	226.0	1 139	353
SUM	1 229.2	6 726	2 544

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/Nm ³)
Unit 1	8	0	0	0	0	153.4
Unit 2	0	0	0	0	0	
Unit 3	27	1	0	0	1	204.6
Unit 4	8	14	0	0	14	354.4
Unit 5	0	0	0	0	0	
Unit 6	4	6	0	0	6	379.1
SUM	43	15	0	0	15	

Table 6.3: Operating days in compliance to SO₂ AEL Limit - November 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO ₂ (mg/Nm ³)
Unit 1	3	0	0	0	0	2 294.2
Unit 2	0	0	0	0	0	
Unit 3	30	0	0	0	0	2 222.2
Unit 4	25	0	0	0	0	2 174.0
Unit 5	0	0	0	0	0	
Unit 6	10	0	0	0	0	2 426.0
SUM	58	0	0	0	0	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO _x (mg/Nm ³)
Unit 1	3	0	0	0	0	767.4
Unit 2	0	0	0	0	0	
Unit 3	30	0	0	0	0	901.5

Unit 4	25	0	0	0	0	844.1
Unit 5	0	0	0	0	0	
Unit 6	10	0	0	0	0	749.5
SUM	58	0	0	0	0	

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

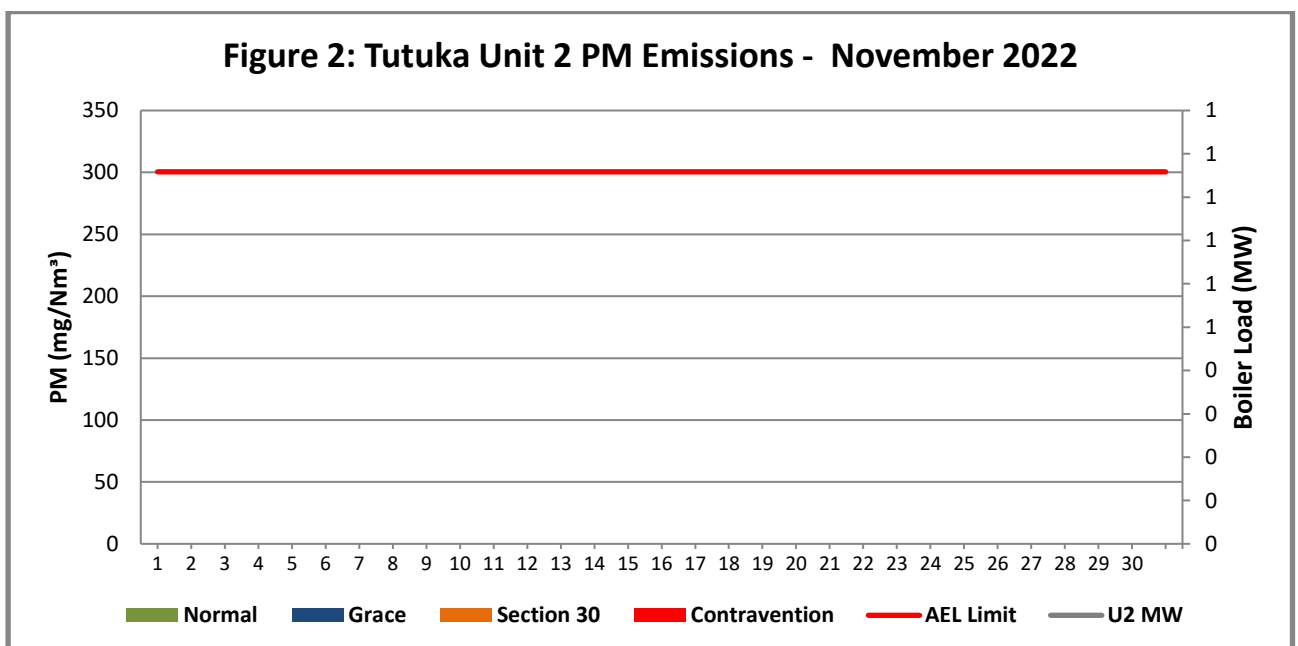
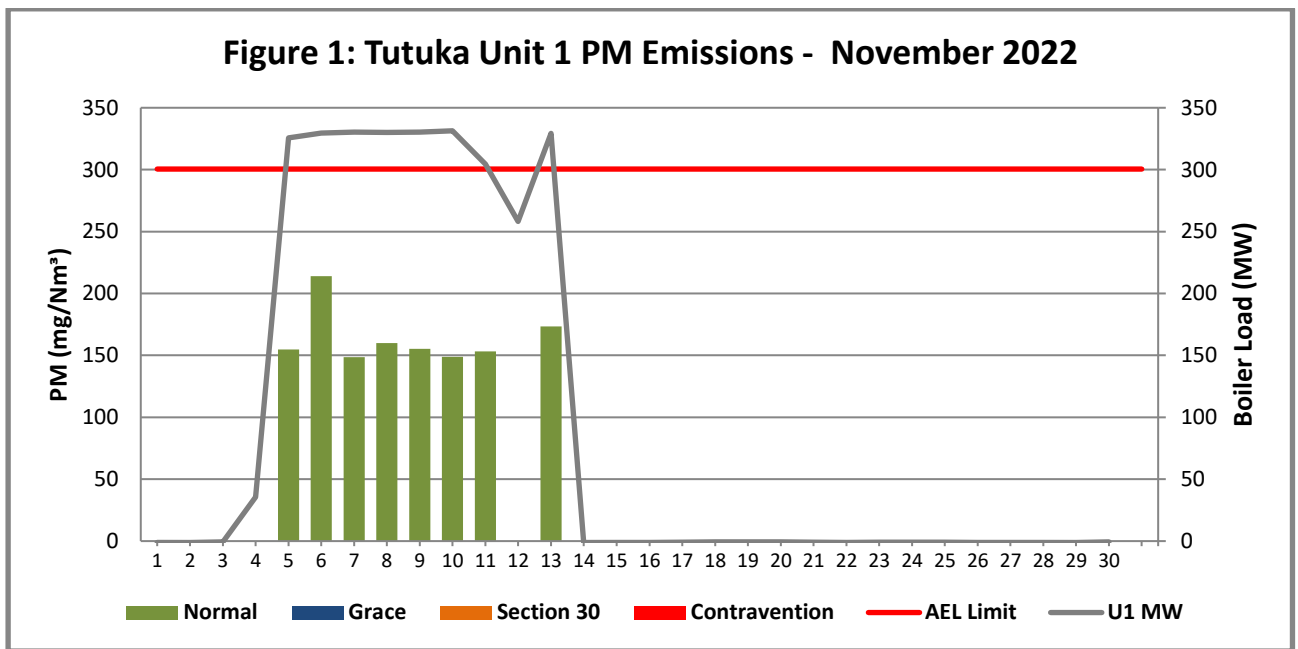


Figure 3: Tutuka Unit 3 PM Emissions - November 2022

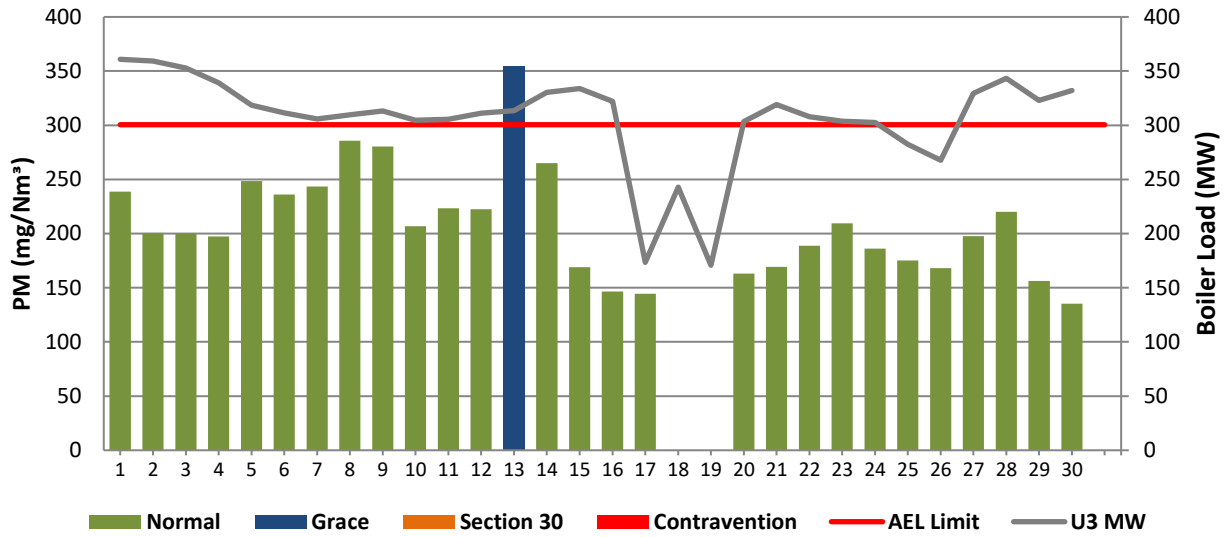


Figure 4: Tutuka Unit 4 PM Emissions - November 2022

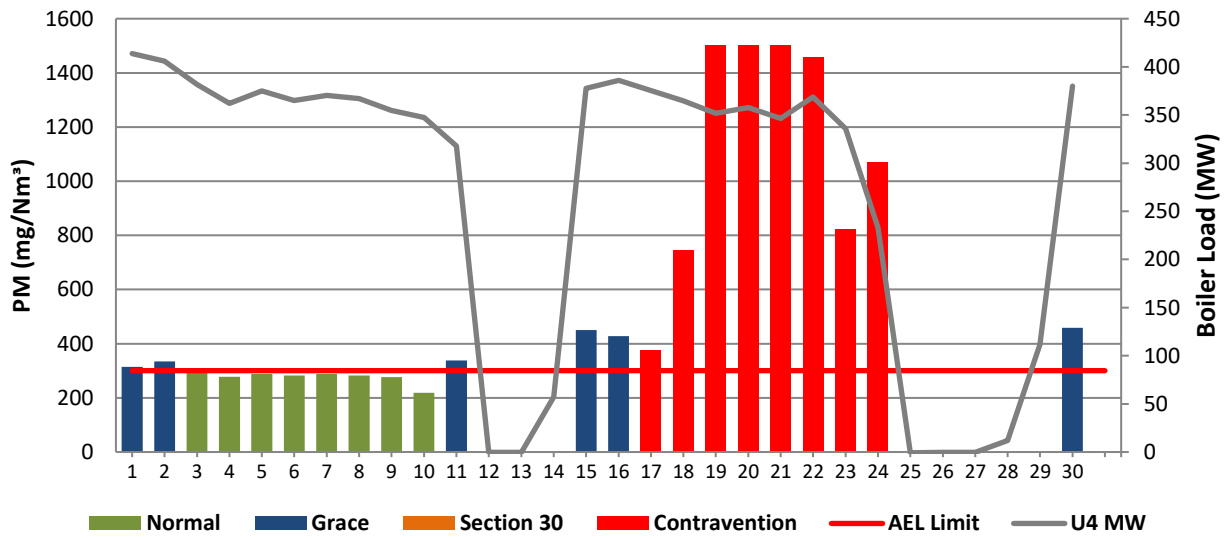


Figure 5: Tutuka Unit 5 PM Emissions - November 2022

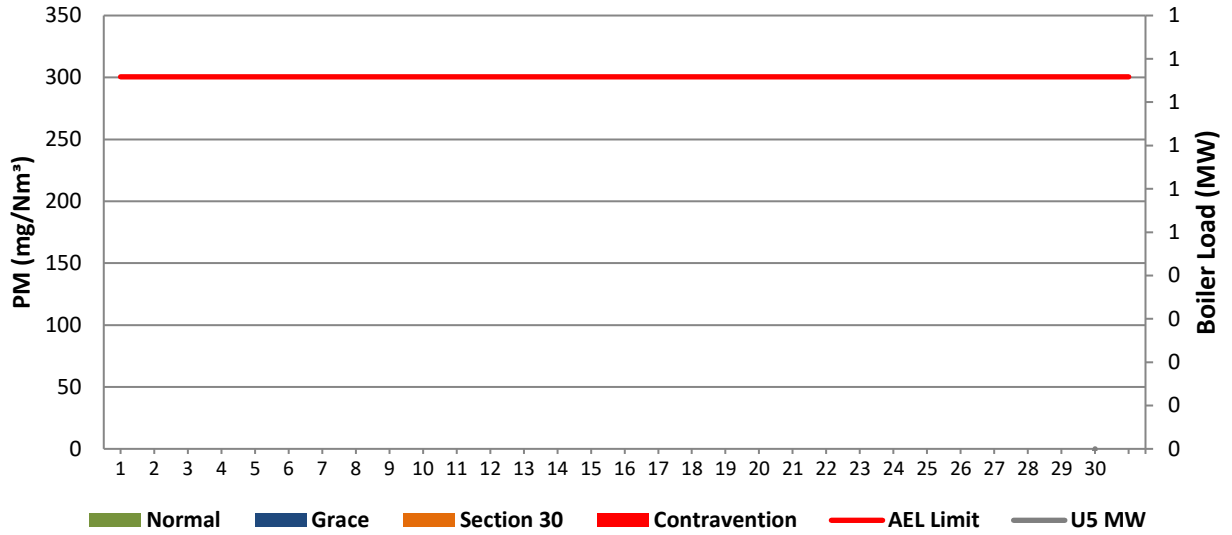


Figure 6: Tutuka Unit 6 PM Emissions - November 2022

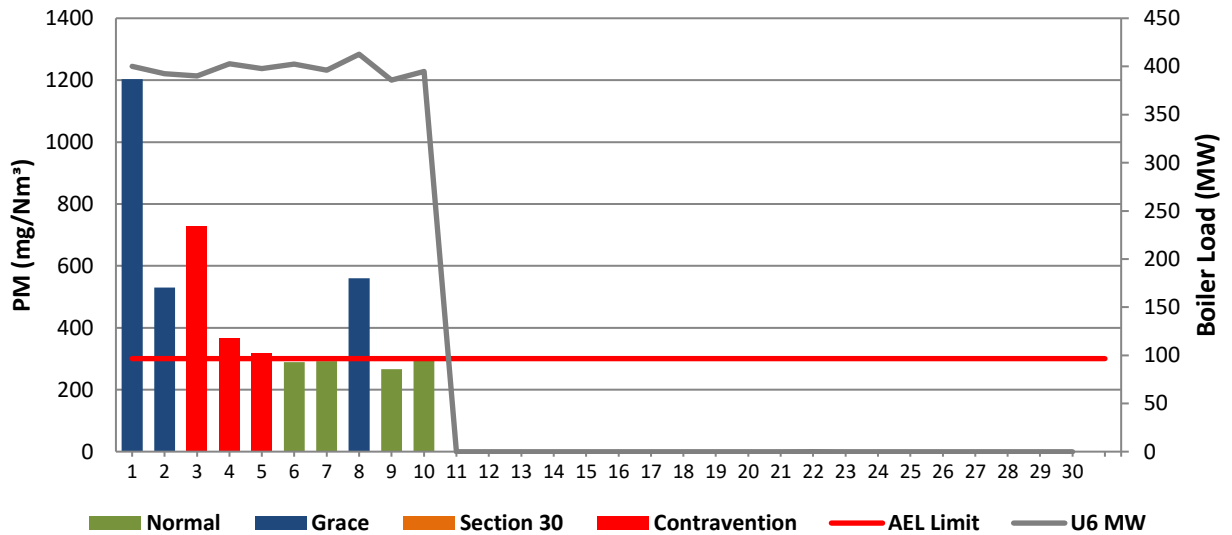


Figure 7: Tutuka Unit 1 SO₂ Emissions - November 2022

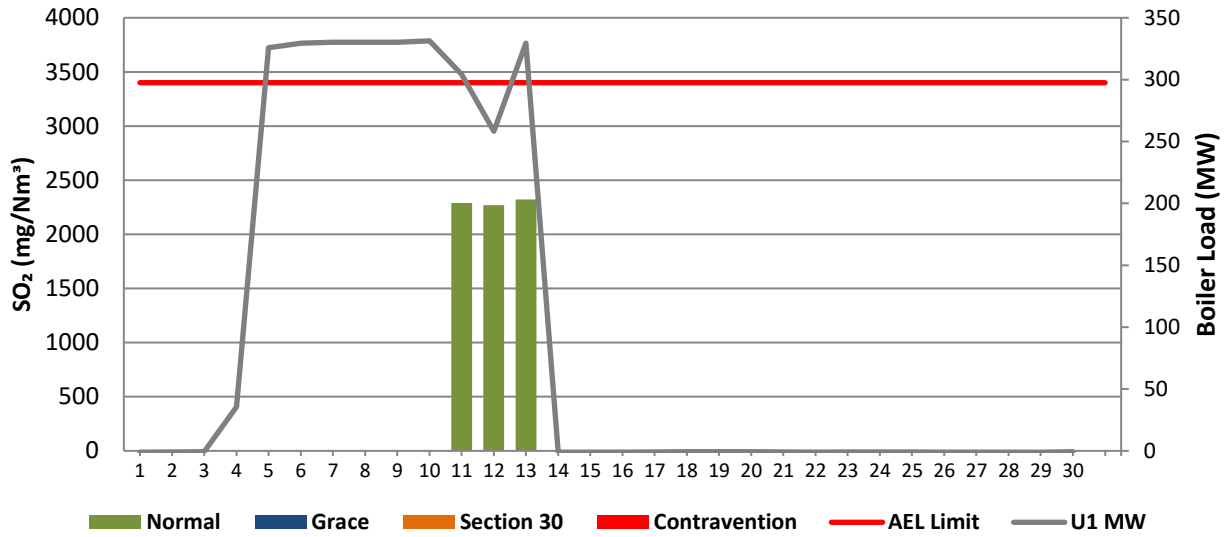


Figure 8: Tutuka Unit 2 SO₂ Emissions - November 2022

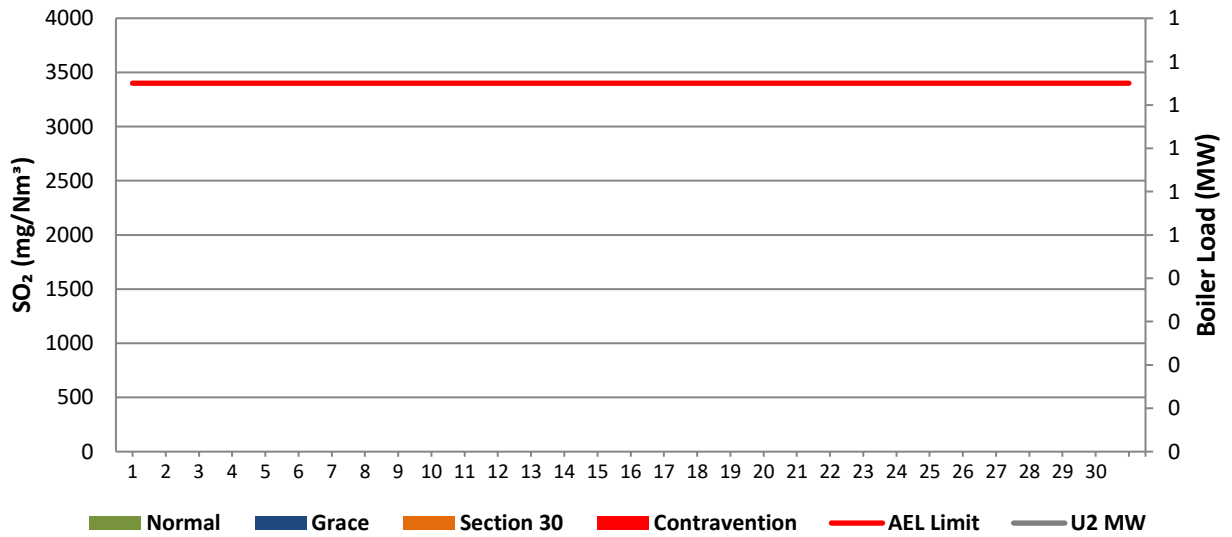


Figure 9: Tutuka Unit 3 SO₂ Emissions - November 2022

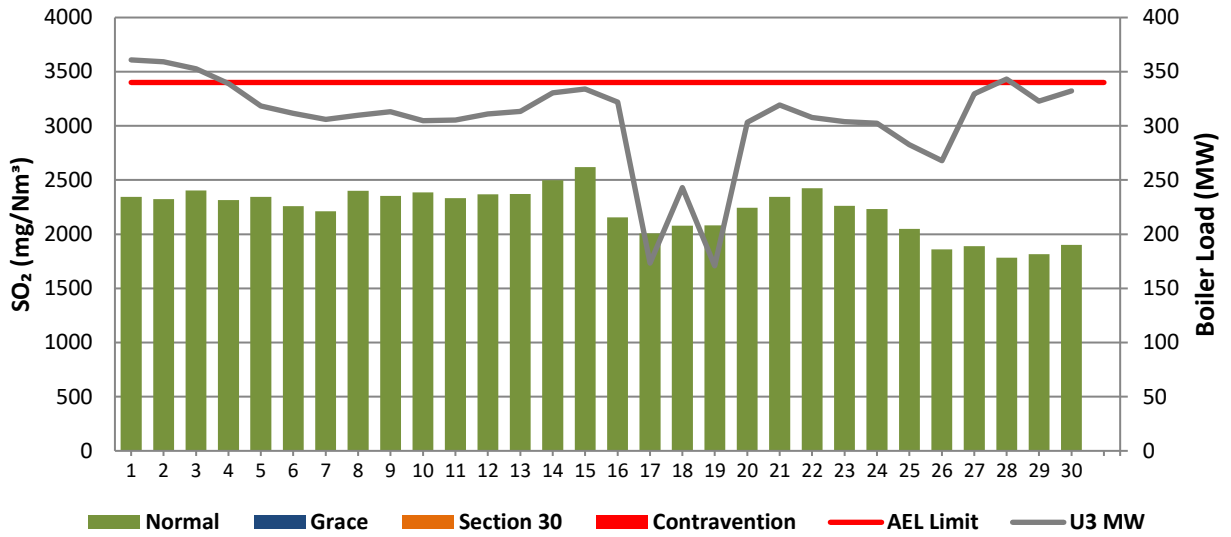


Figure 10: Tutuka Unit 4 SO₂ Emissions - November 2022

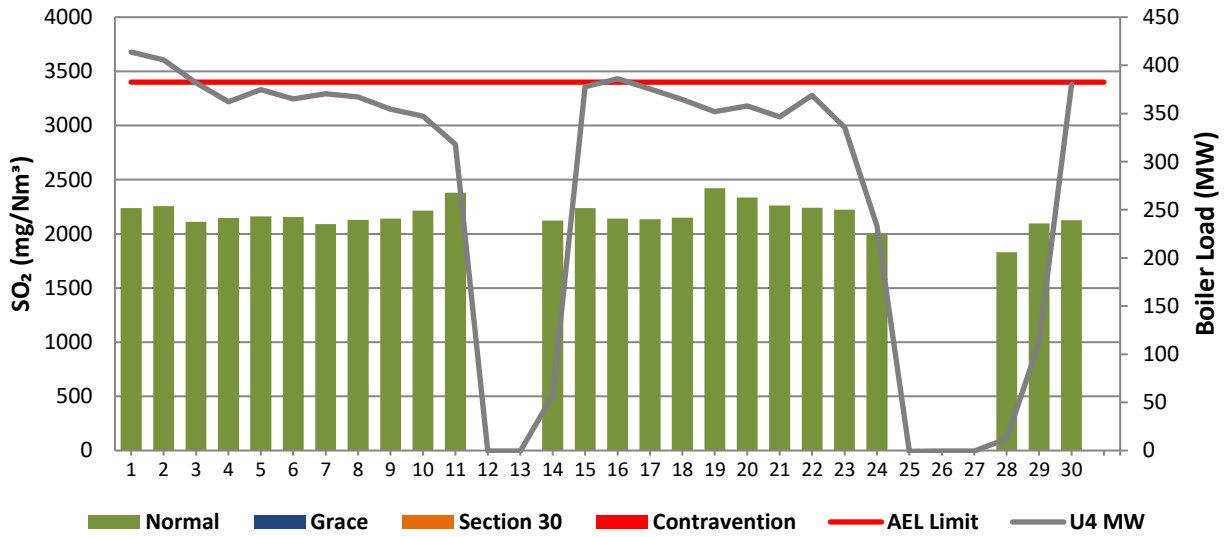


Figure 11: Tutuka Unit 5 SO₂ Emissions - November 2022

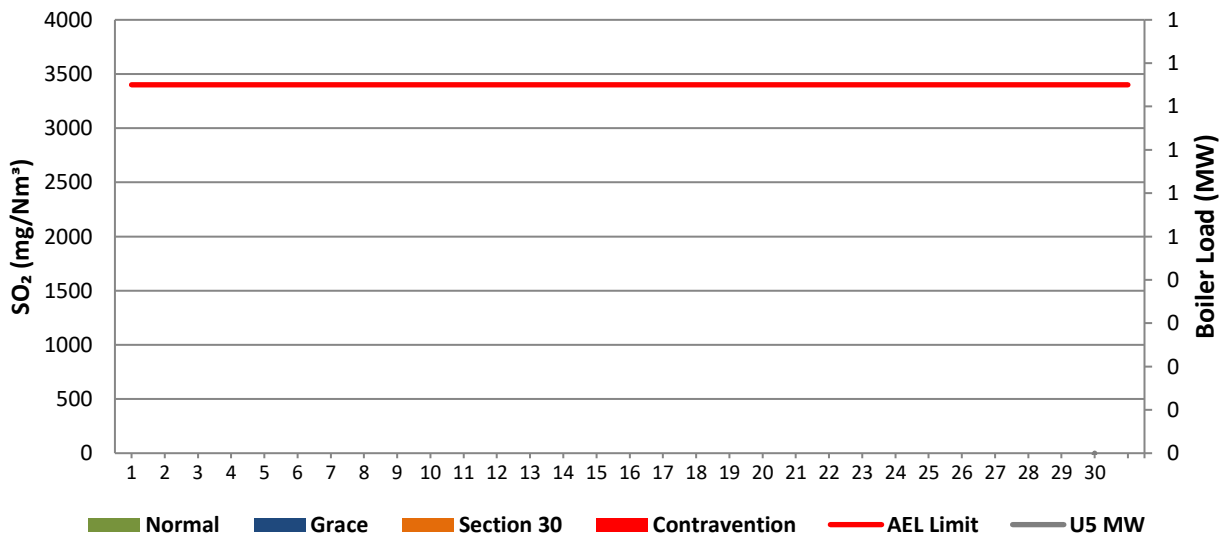


Figure 12: Tutuka Unit 6 SO₂ Emissions - November 2022

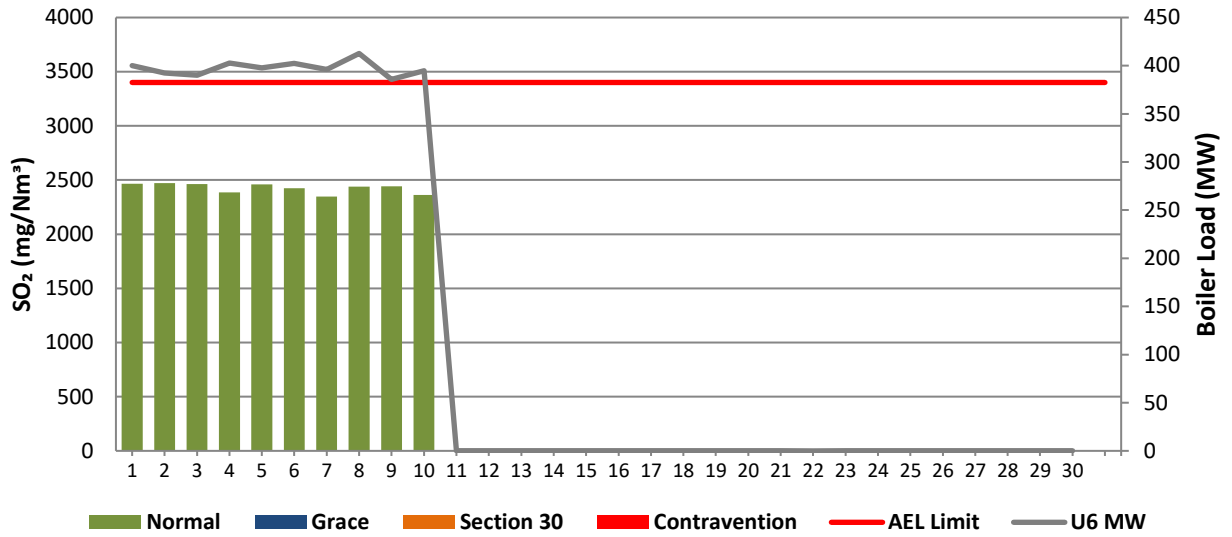


Figure 13: Tutuka Unit 1 NO_x Emissions - November 2022

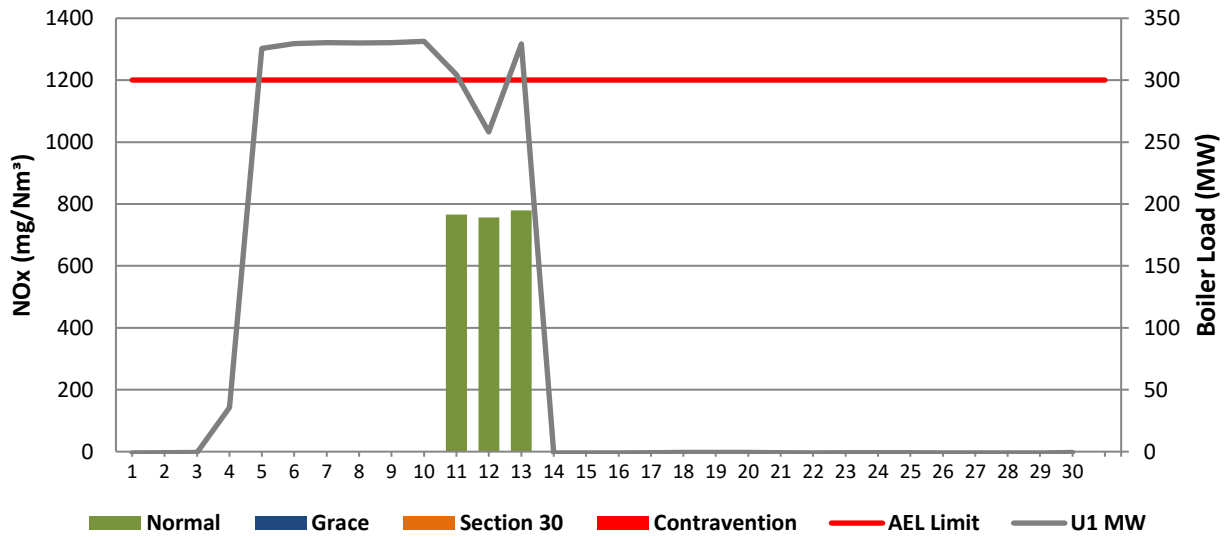


Figure 14: Tutuka Unit 2 NOx Emissions - November 2022

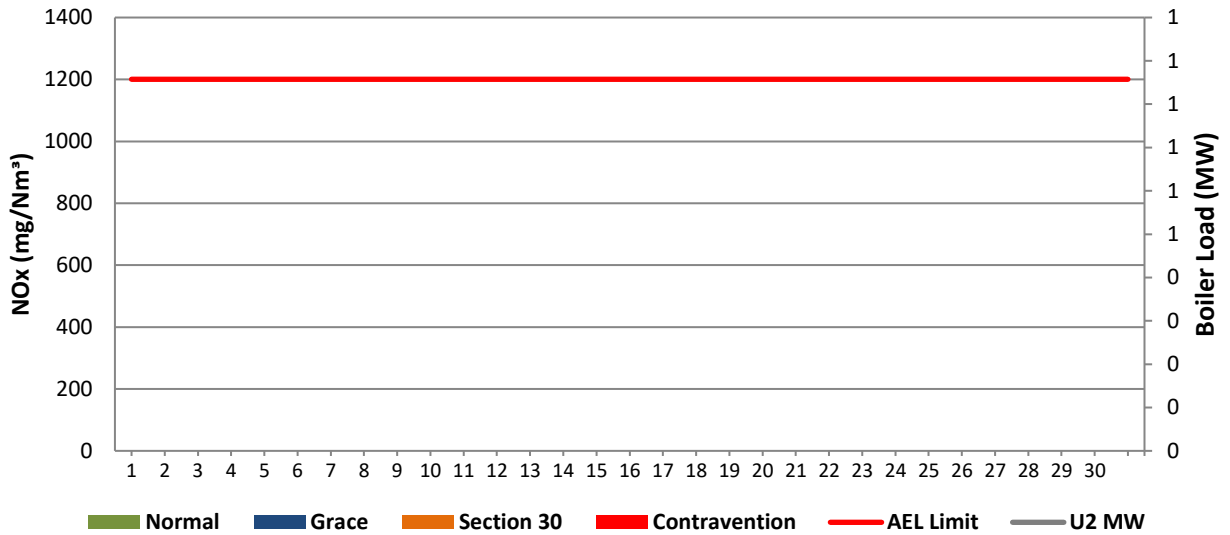


Figure 15: Tutuka Unit 3 NOx Emissions - November 2022

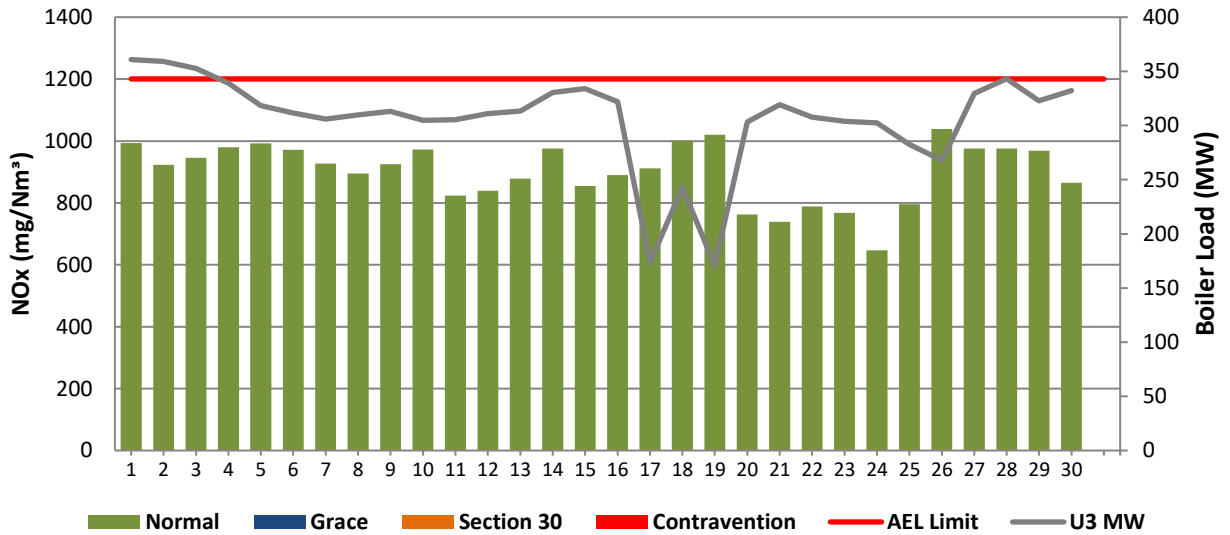


Figure 16: Tutuka Unit 4 NOx Emissions - November 2022

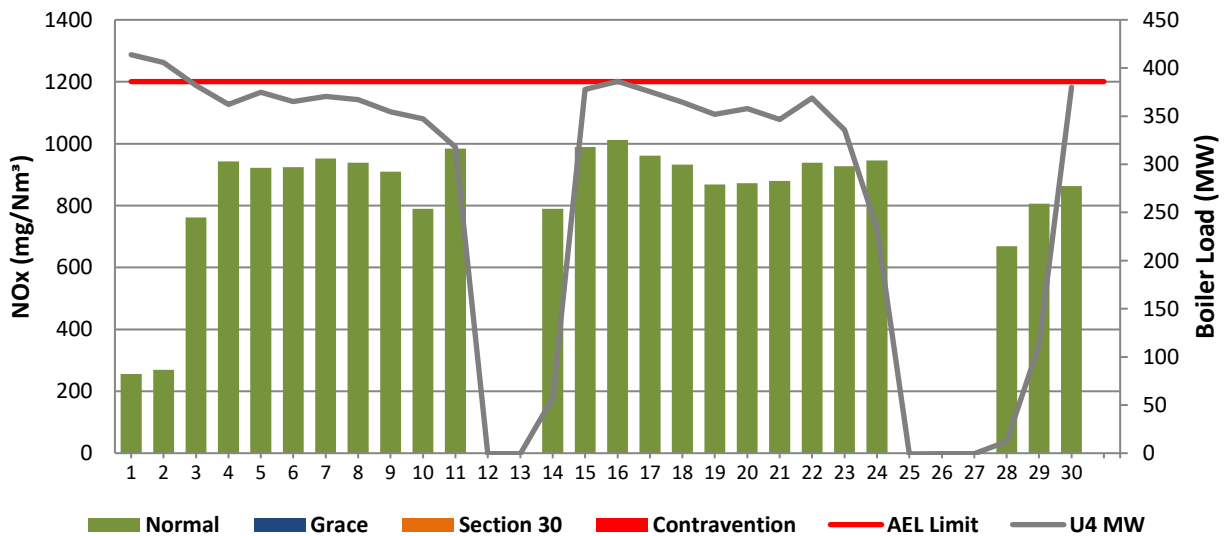


Figure 17: Tutuka Unit 5 NOx Emissions - November 2022

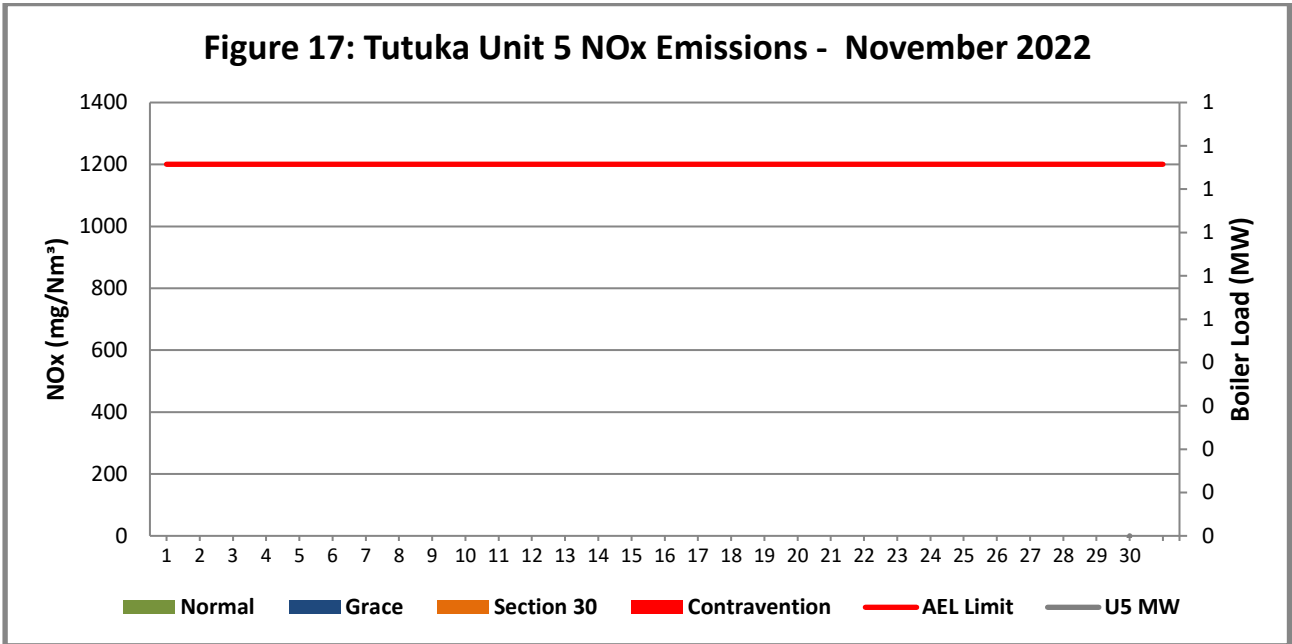
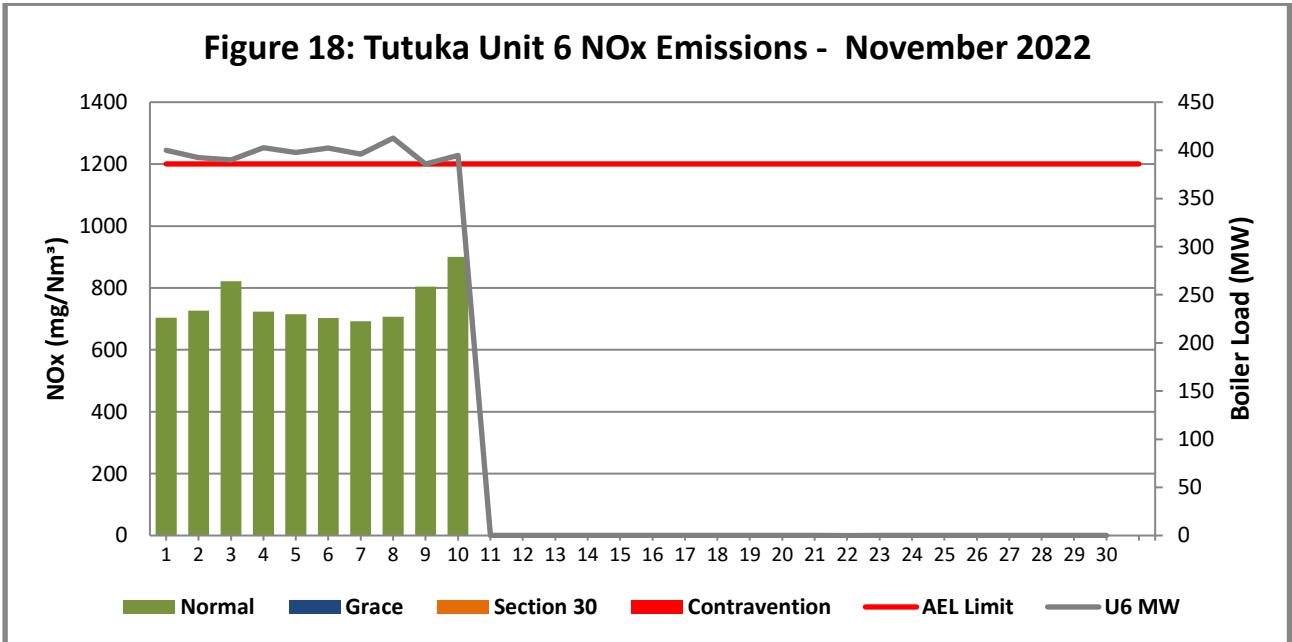


Figure 18: Tutuka Unit 6 NOx Emissions - November 2022



8. 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 2022					

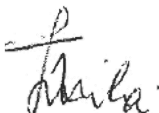


9. LIGHT UP INFORMATION

PM Start-up information for the month of November 2022

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Number of Hot Starts (Off-Load<30Hrs)	0	0	0	0	0	0
Number of Cold Starts (Off-Load>30hrs)	2	0	1	1	0	0

For more information or enquiries contact the Tutuka environmental team.

Yours Sincerely

<p>Compiled by: Xoli Jila</p> <p>SENIOR ADVISOR ENVIRONMENTAL</p> <p>Signature: </p> <p>Date : 21 December 2022</p>	<p>Supported By: Mike Molepo</p> <p>SENIOR CHEMIST: BOILER ENGINEERING</p> <p>Signature: </p> <p>Date : 21/12/2022</p>
<p>Approved by: Sello Mametja</p> <p>GENERAL MANAGER: TUTUKA POWER STATION</p> <p>Signature: </p> <p>Date: 2022/12/22</p>	