

The Municipal Manager
 Gert Sibande District Municipality
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Date: 23 November 2022
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Dear Mr Hlanyane

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

The report presents monthly trends for each pollutant monitored from all the units, except unit 2 which has been out of service for the month of October 2022. The Station did not incur any legal contraventions during the month of October, all the exceedances recorded fell within the 48-hour grace period.

1 RAW MATERIALS AND PRODUCTS

Raw Materials and Products	Raw Material Type	Units	Max. Permitted	Actual Consumption Oct-2022
	Coal	Tons	1 200 000	336 051
	Fuel Oil	Tons	10 000	6441.34
Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Oct-2022
	Energy	GWh	2611.44	621.0
	Ash	Tons	350 000	89 524
	RE Ash	kg/MWh	not specified	1.25

Generation Division

Tutuka Power Station
 Standerton/Bethal Road, Standerton
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 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	21.220
Sulphur Content	%	0.6 TO >2.6	1.150
Ash Content	%	21 TO >33	26.640

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 Oct-2022
Unit 1	Electro Static Precipitators (ESP)	99.3%
Unit 2	Electro Static Precipitators (ESP)	
Unit 3	Electro Static Precipitators (ESP)	98.9%
Unit 4	Electro Static Precipitators (ESP)	99.1%
Unit 5	Electro Static Precipitators (ESP)	
Unit 6	Electro Static Precipitators (ESP)	98.9%

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	100.0	100.0	90.1	95.2
Unit 2				
Unit 3	93.7	98.1	98.1	97.6
Unit 4	98.7	98.1	80.3	97.8
Unit 5				
Unit 6	99.4	74.4	73.9	74.4

Note: Poor gas monitor performance in unit 6 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. As an interim measure, sample pumps were stripped and cleaned out to enhance their effectiveness.

6 EMISSION PERFORMANCE

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

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO _x (tons)
Unit 1	116.7	1 540	531
Unit 2	0.0	0	0
Unit 3	118.7	1 083	434
Unit 4	187.3	1 902	803
Unit 5	0.0	0	0
Unit 6	352.4	2 754	952
SUM	775.2	7 280	2 720

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
Unit 1	17	0	0	0	0	168.0
Unit 2	0	0	0	0	0	
Unit 3	9	2	0	0	2	200.6
Unit 4	17	2	0	0	2	192.2
Unit 5	0	0	0	0	0	
Unit 6	22	5	0	0	5	283.4
SUM	65	9	0	0	9	

Table 6.3: Operating days in compliance to SO₂ AEL Limit – October 2022)

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO ₂ (mg/Nm ³)
Unit 1	19	0	0	0	0	2 201.4
Unit 2	0	0	0	0	0	
Unit 3	14	0	0	0	0	2 284.9
Unit 4	22	0	0	0	0	2 150.4
Unit 5	0	0	0	0	0	
Unit 6	28	0	0	0	0	2 293.5
SUM	83	0	0	0	0	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO _x (mg/Nm ³)
Unit 1	18	0	0	0	0	764.3
Unit 2	0	0	0	0	0	
Unit 3	14	0	0	0	0	921.1
Unit 4	22	0	0	0	0	845.1
Unit 5	0	0	0	0	0	
Unit 6	28	0	0	0	0	790.1
SUM	82	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

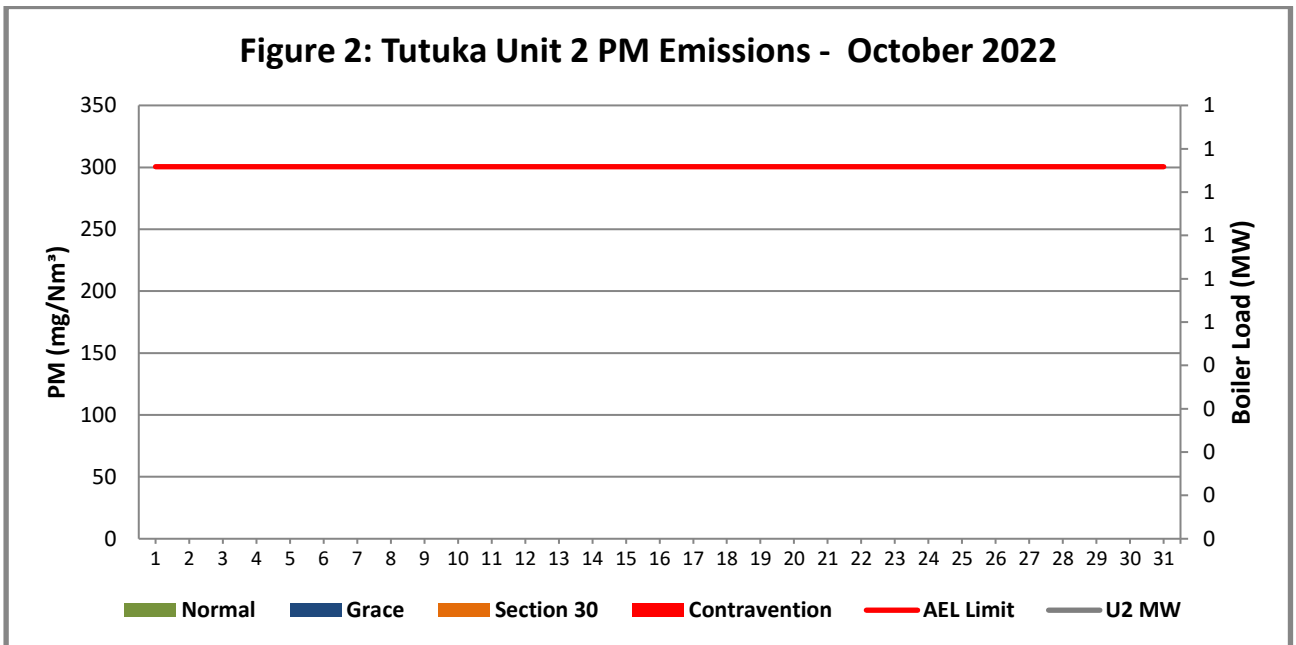
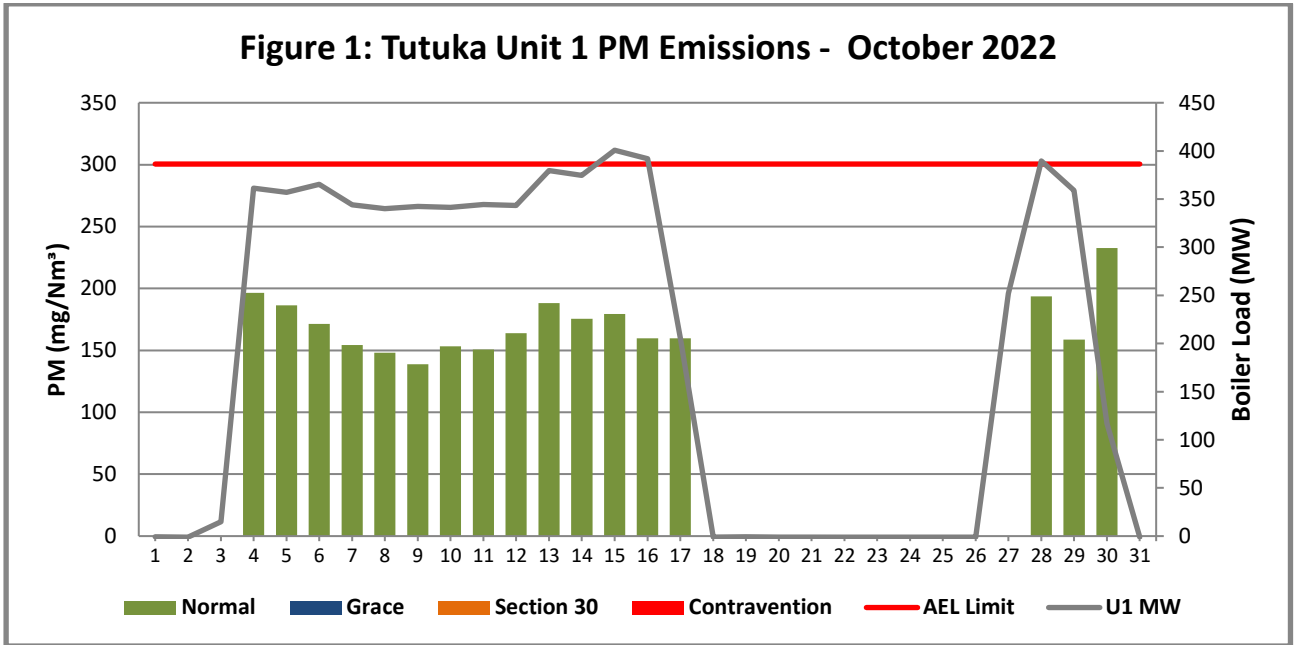


Figure 3: Tutuka Unit 3 PM Emissions - October 2022

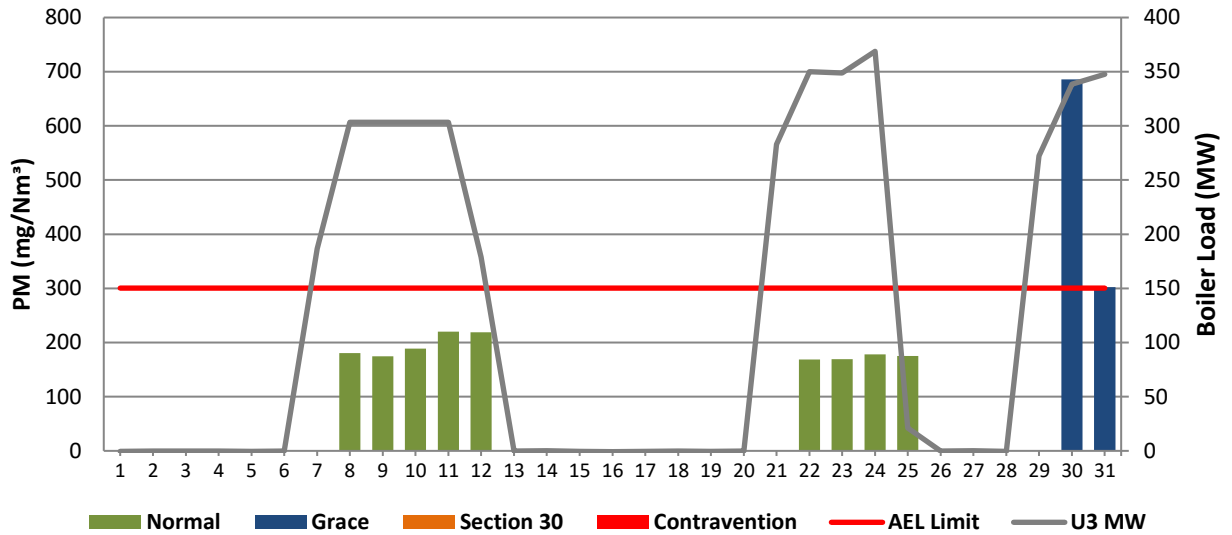


Figure 4: Tutuka Unit 4 PM Emissions - October 2022

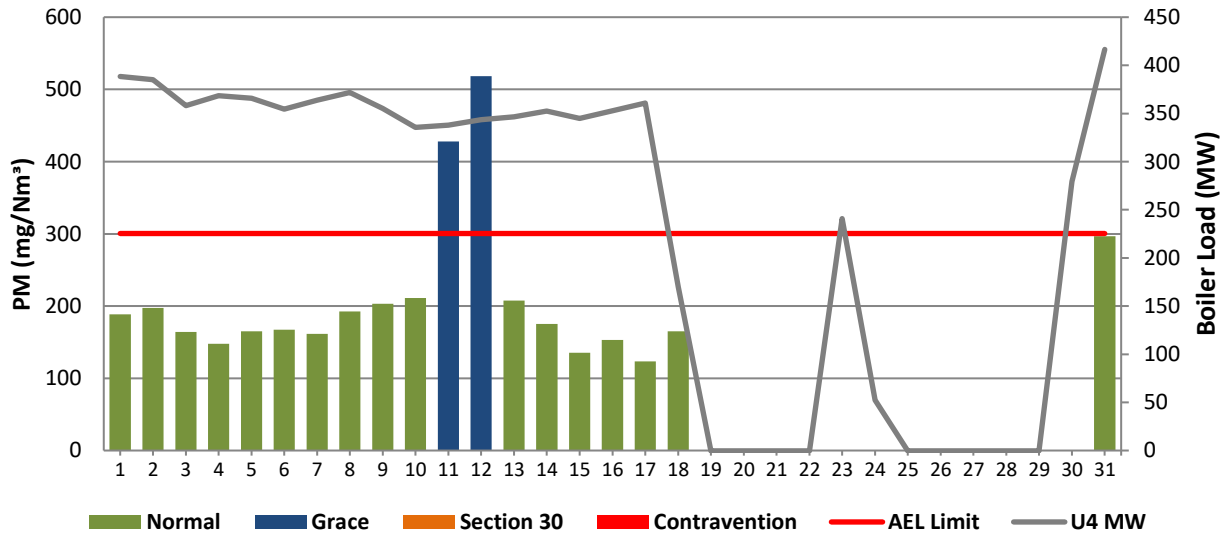


Figure 5: Tutuka Unit 5 PM Emissions - October 2022

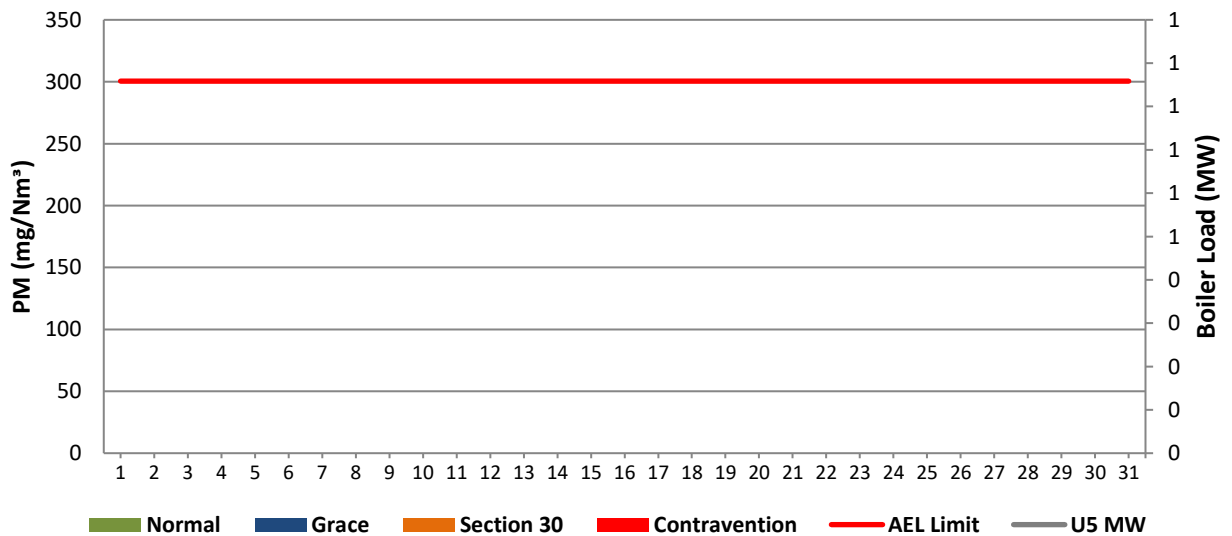


Figure 6: Tutuka Unit 6 PM Emissions - October 2022

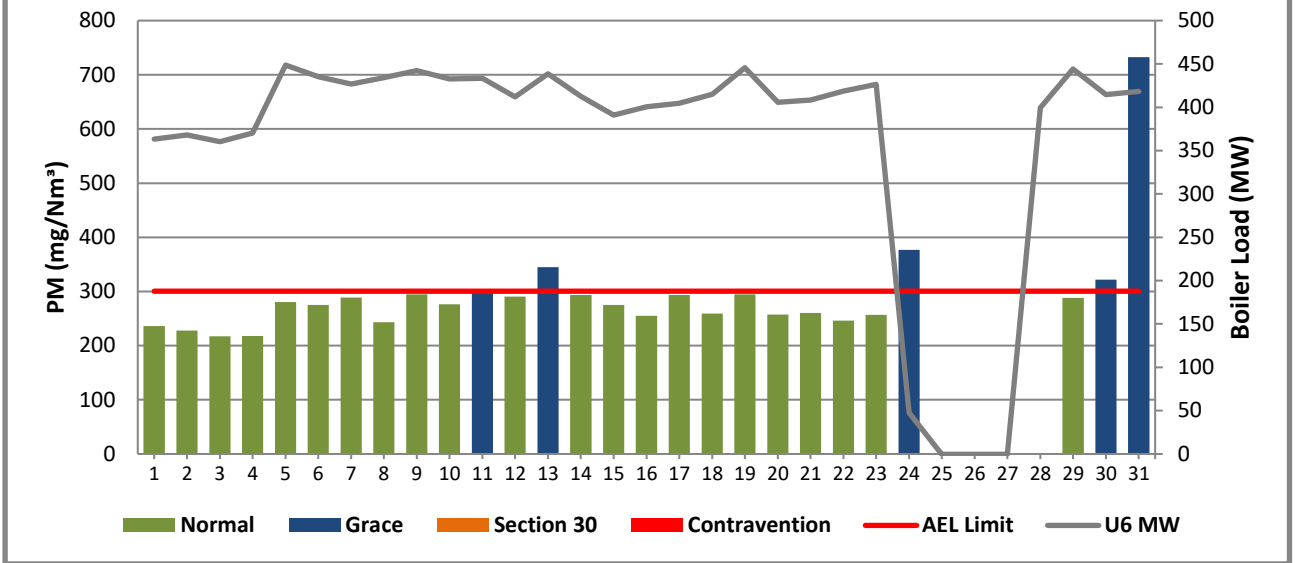


Figure 7: Tutuka Unit 1 SO₂ Emissions - October 2022

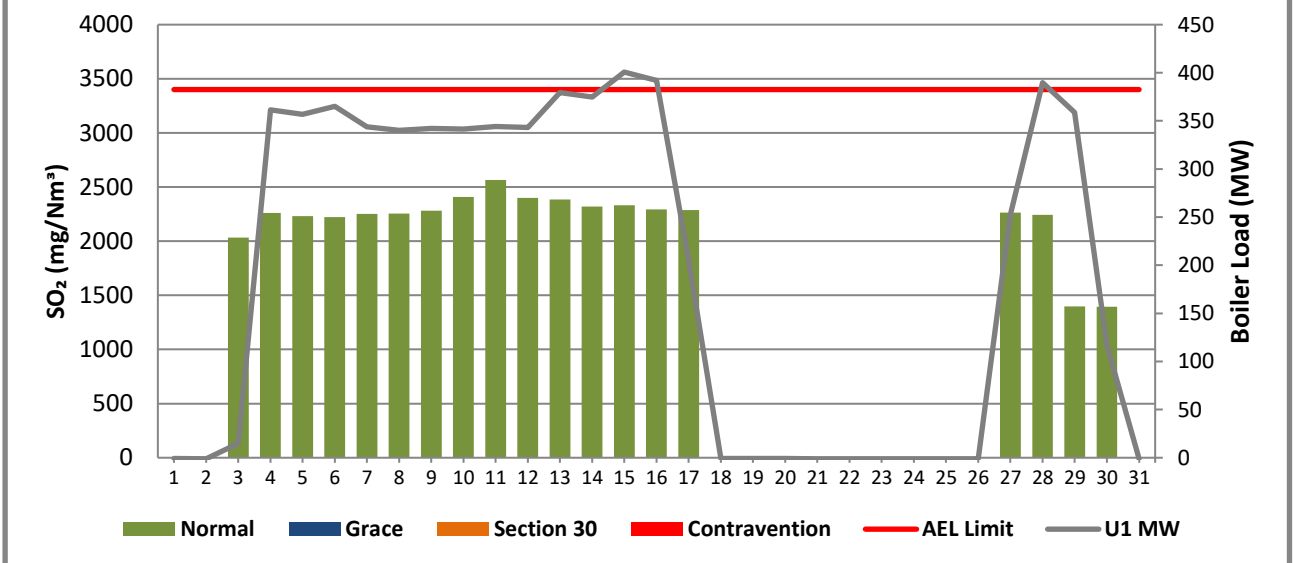


Figure 8: Tutuka Unit 2 SO₂ Emissions - October 2022

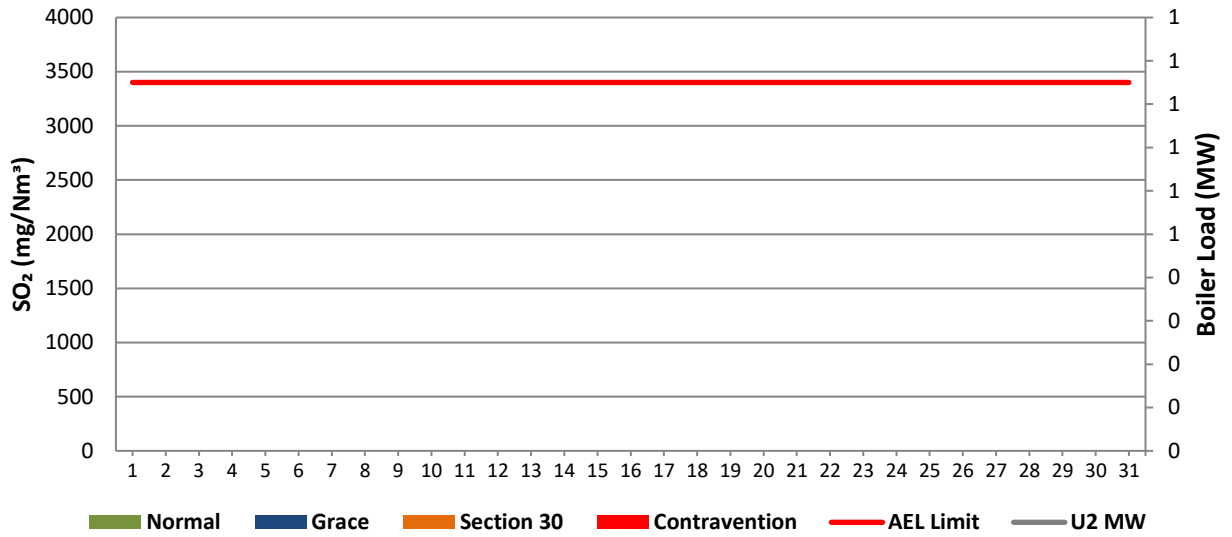


Figure 9: Tutuka Unit 3 SO₂ Emissions - October 2022



Figure 10: Tutuka Unit 4 SO₂ Emissions - October 2022

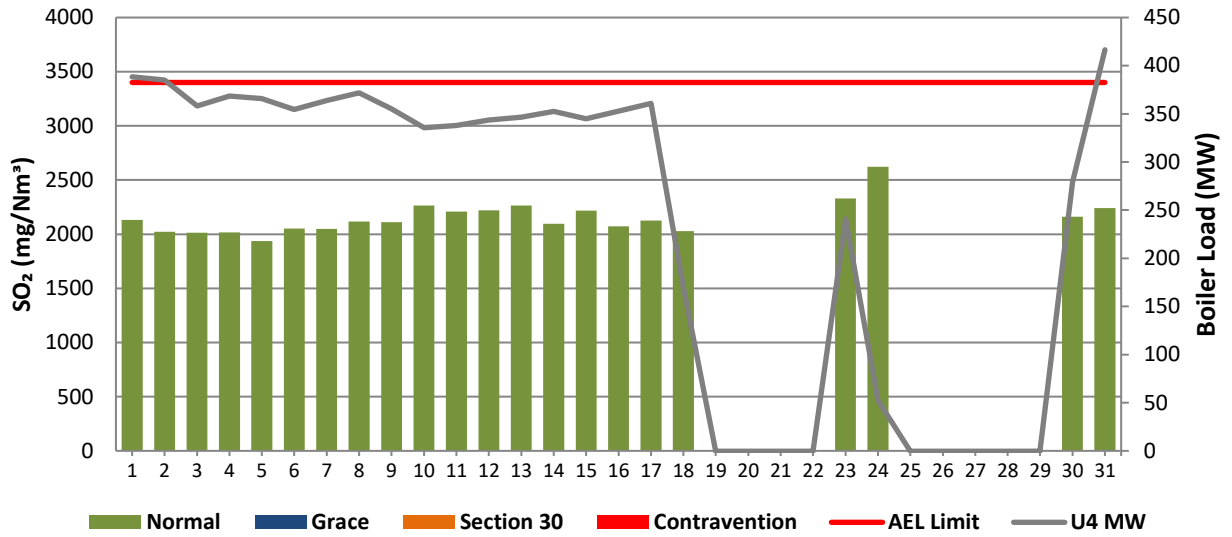
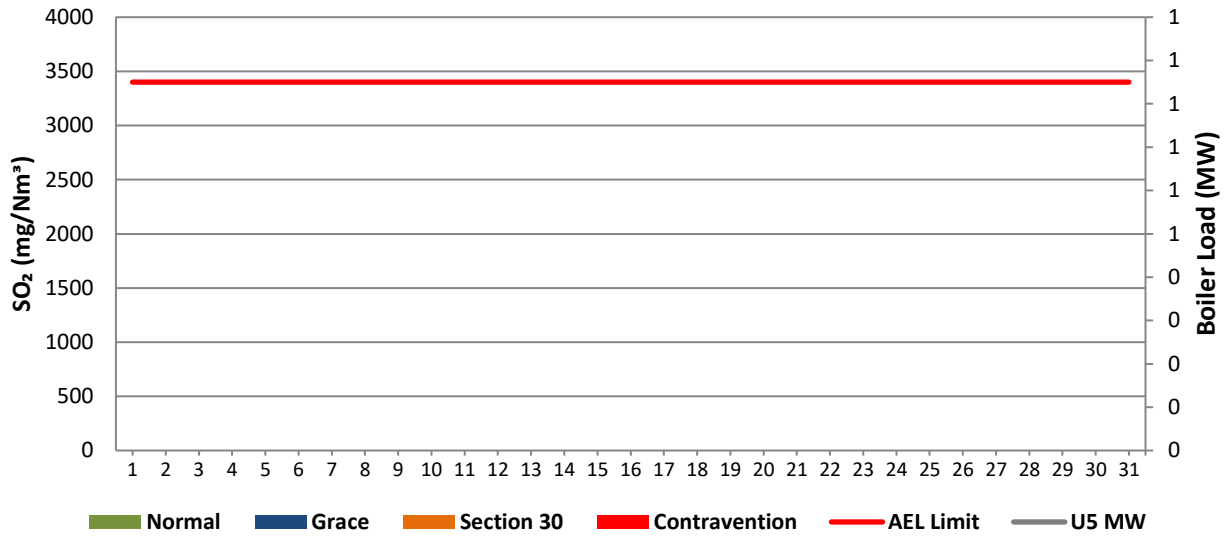
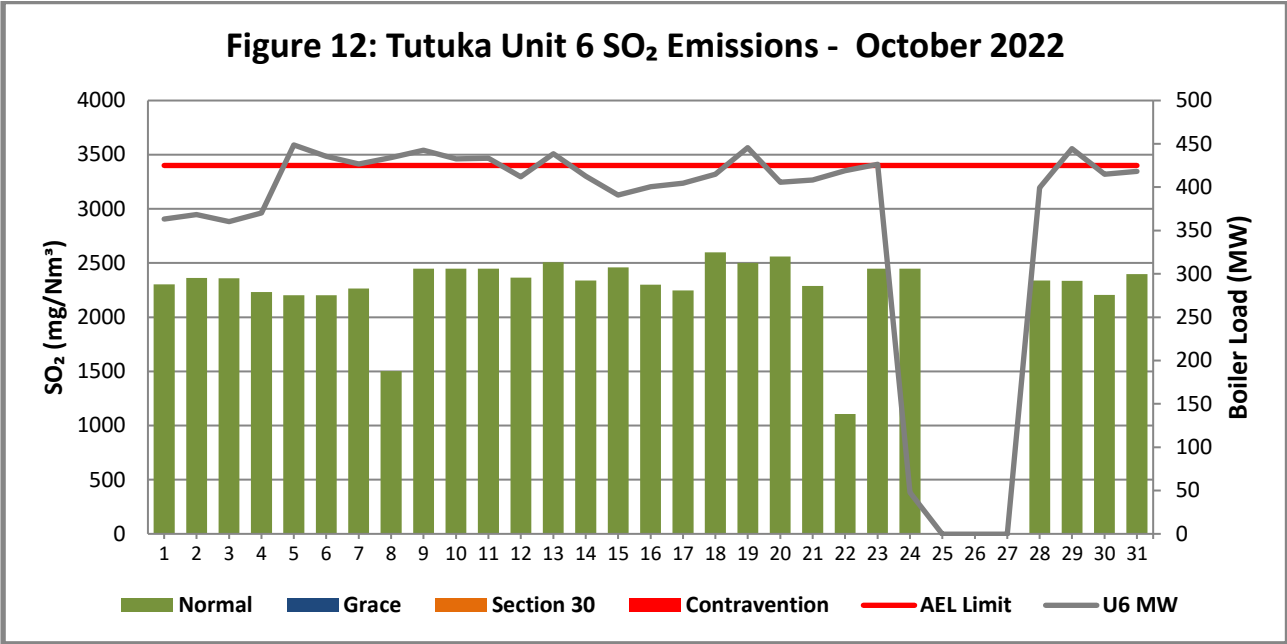


Figure 11: Tutuka Unit 5 SO₂ Emissions - October 2022





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 October 2022					

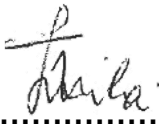


9. LIGHT UP INFORMATION

PM Start-up information for the month of October 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	3	1		1

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 : 23 November 2022</p>	<p>Supported By: Mike Molepo</p> <p>SENIOR CHEMIST: BOILER ENGINEERING</p> <p>Signature: </p> <p>Date : 24/11/2022</p>
<p>Approved by: Sello Mametja GENERAL MANAGER: TUTUKA POWER STATION</p> <p>Signature: </p> <p>Date: 2022/11/29</p>	