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Date: 17 October 2022
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Dear Mr Hlanyane

TUTUKA POWER STATION'S MONTHLY REPORT FOR THE MONTH OF SEPTEMBER 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 September 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 September 2022. There is one and six PM exceedances recorded in units 5 and 6 respectively, which fell outside the 48-hour grace period. These were due to challenges with the dust handling plant.

Generation Division

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Eskom Holdings SOC Ltd Reg No 2002/015527/30

1. RAW MATERIALS AND PRODUCTS

Raw Materials and Products	Raw Material Type	Units	Max. Permitted	Actual Consumption Sep-2022
	Coal	Tons	1 200 000	375 562
	Fuel Oil	Tons	10 000	7745.3

Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Sep-2022
	Energy	GWh	2527.2	640.5
	Ash	Tons	350 000	98 247
	RE Ash	kg/MWh	not specified	2.05

2. ENERGY SOURCE CHARACTERISTICS

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
CV Content	MJ/kg	16-24	21.290
Sulphur Content	%	0.6 TO >2.6	1.190
Ash Content	%	21 TO >33	26.160

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 Sep-2022
Unit 1	Electro Static Precipitators (ESP)	99.1%
Unit 2	Electro Static Precipitators (ESP)	
Unit 3	Electro Static Precipitators (ESP)	99.1%
Unit 4	Electro Static Precipitators (ESP)	99.1%
Unit 5	Electro Static Precipitators (ESP)	97.0%
Unit 6	Electro Static Precipitators (ESP)	97.2%

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	96.0	96.0	96.0
Unit 2				
Unit 3	95.0	99.3	99.3	94.4
Unit 4	98.5	99.2	97.5	98.6
Unit 5	100.0	100.0	100.0	100.0
Unit 6	69.2	99.4	99.4	99.1

Note: Unit 6 Particulate Matter (PM) monitors maxed between 5 – 9 September and 18 – 19 September 2022. Therefore, dust concentrations could be higher than what was recorded.

6. EMISSION PERFORMANCE

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

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO _x (tons)
Unit 1	117.4	1 265	462
Unit 2	0.0	0	0
Unit 3	229.7	2 278	960
Unit 4	224.2	2 058	875
Unit 5	95.8	204	127
Unit 6	640.3	1 665	757
SUM	1 307.4	7 470	3 181

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
Unit 1	11	1	0	0	1	204.7
Unit 2	0	0	0	0	0	
Unit 3	20	2	0	0	2	217.6
Unit 4	20	1	0	0	1	195.4
Unit 5	0	2	0	1	3	709.1
Unit 6	7	6	0	5	11	395.5
SUM	58	12	0	6	18	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO ₂ (mg/Nm ³)
Unit 1	13	0	0	0	0	2 232.4
Unit 2	0	0	0	0	0	
Unit 3	25	0	0	0	0	2 219.7
Unit 4	22	0	0	0	0	1 981.5
Unit 5	5	0	0	0	0	1 831.0
Unit 6	20	0	0	0	0	2 062.7
SUM	60	0	0	0	0	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO _x (mg/Nm ³)
Unit 1	13	0	0	0	0	808.8
Unit 2	0	0	0	0	0	
Unit 3	25	0	0	0	0	928.7
Unit 4	22	0	0	0	0	847.9
Unit 5	5	0	0	0	0	1 073.9
Unit 6	20	0	0	0	0	919.3
SUM	60	0	0	0	0	

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 - September 2022

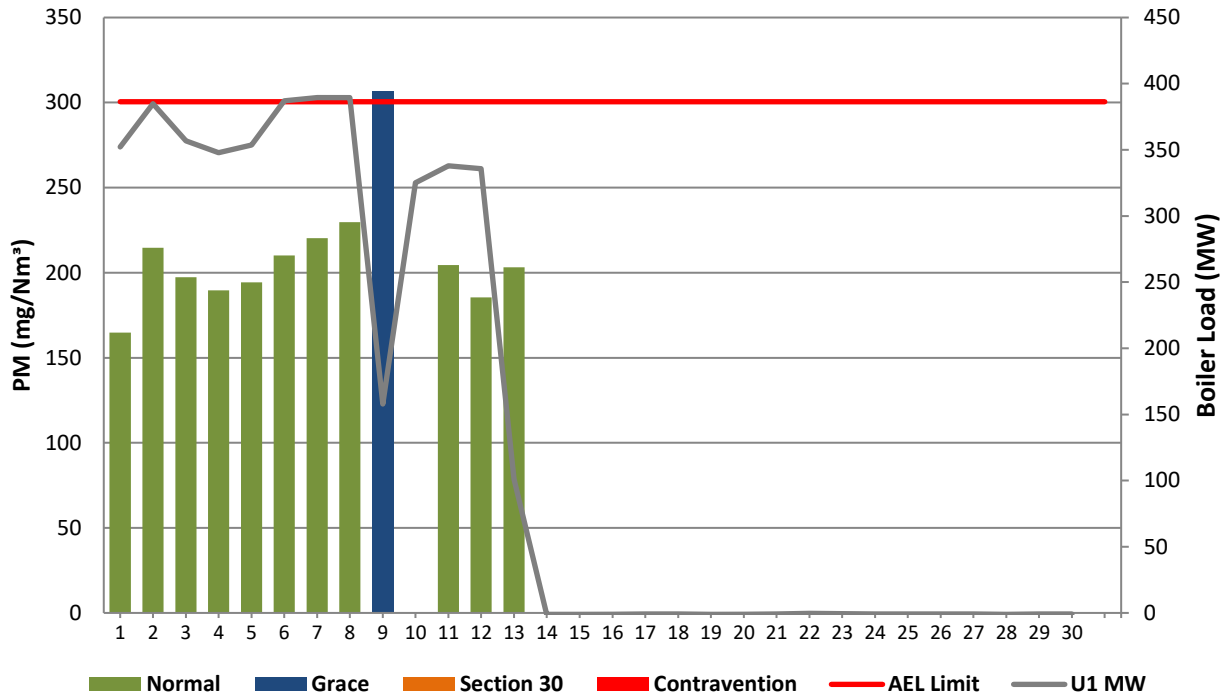


Figure 2: Tutuka Unit 2 PM Emissions - September 2022

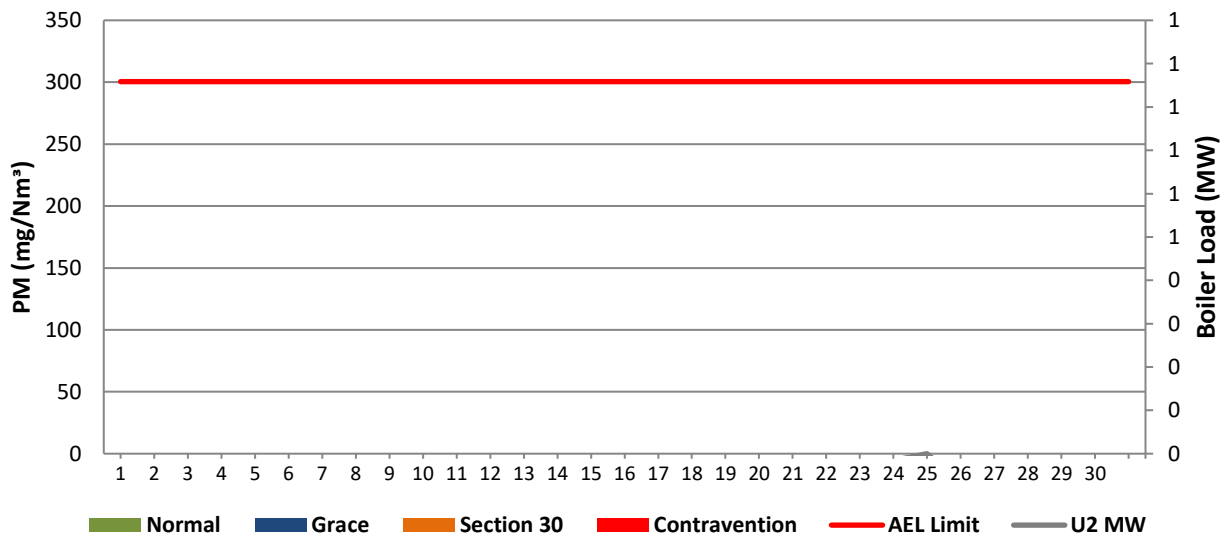


Figure 3: Tutuka Unit 3 PM Emissions - September 2022

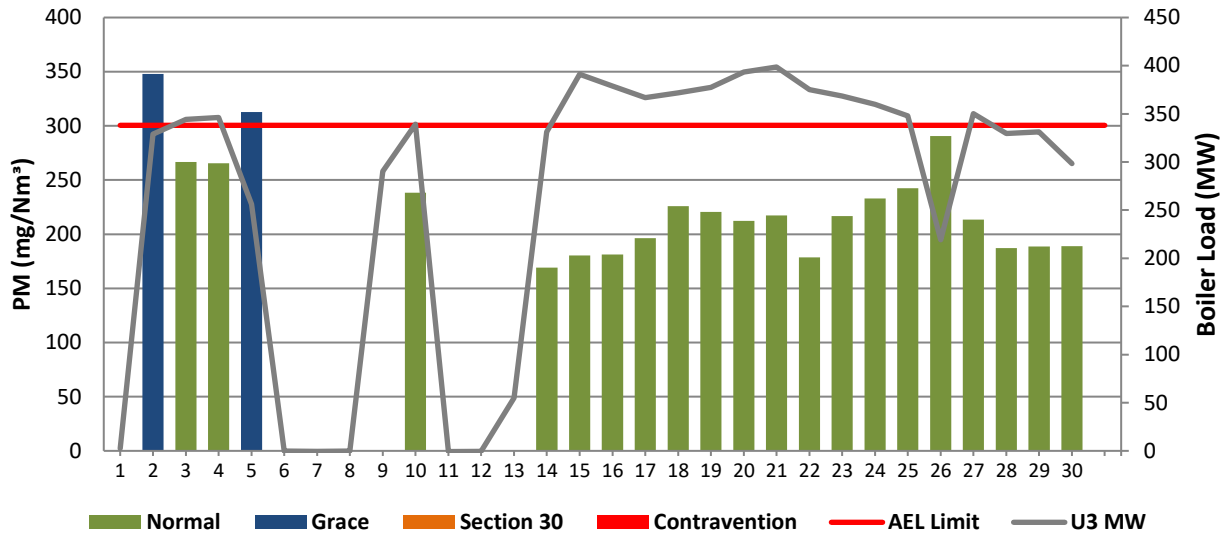


Figure 4: Tutuka Unit 4 PM Emissions - September 2022

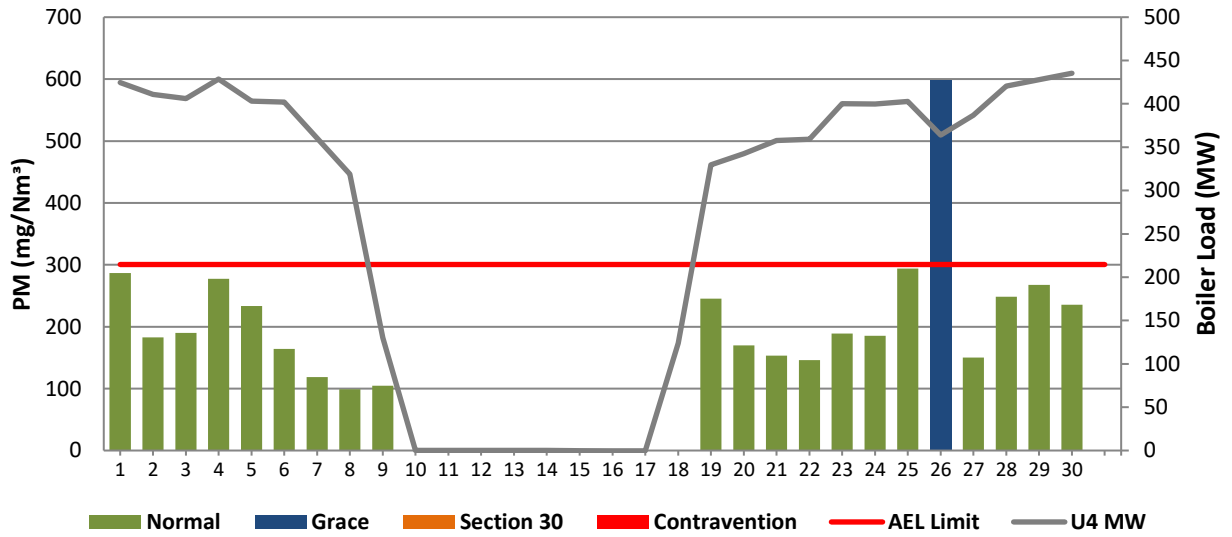


Figure 5: Tutuka Unit 5 PM Emissions - September 2022

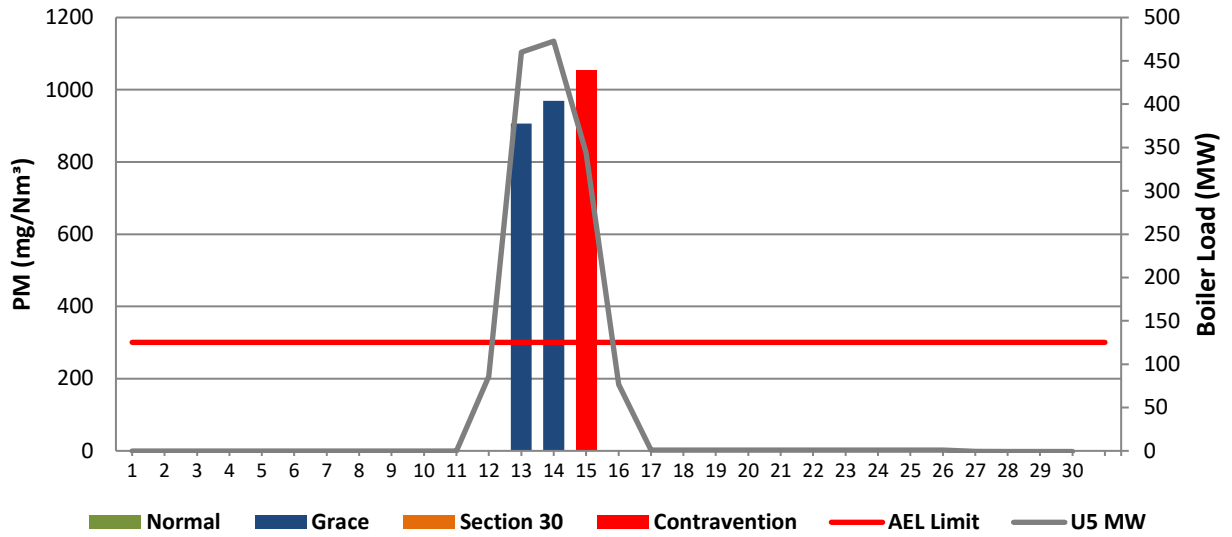


Figure 6: Tutuka Unit 6 PM Emissions - September 2022

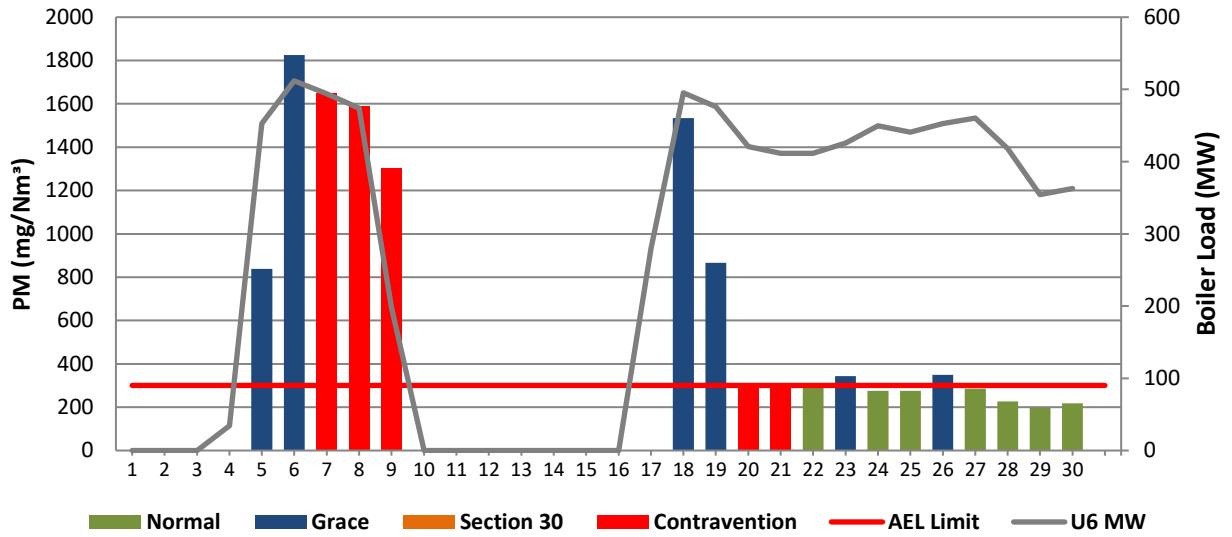


Figure 7: Tutuka Unit 1 SO₂ Emissions - September 2022

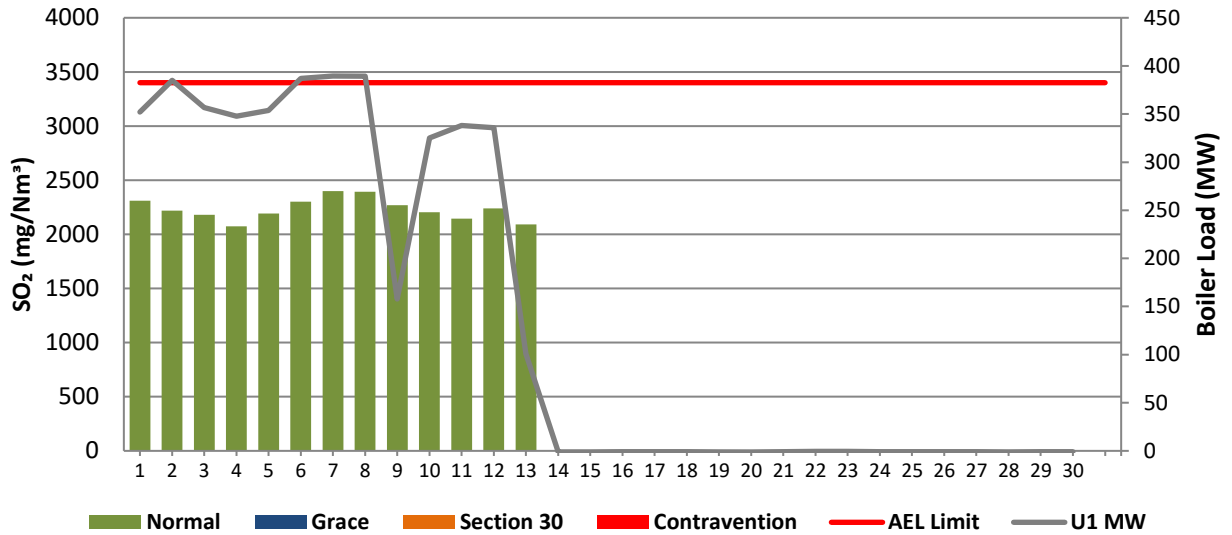


Figure 8: Tutuka Unit 2 SO₂ Emissions - September 2022

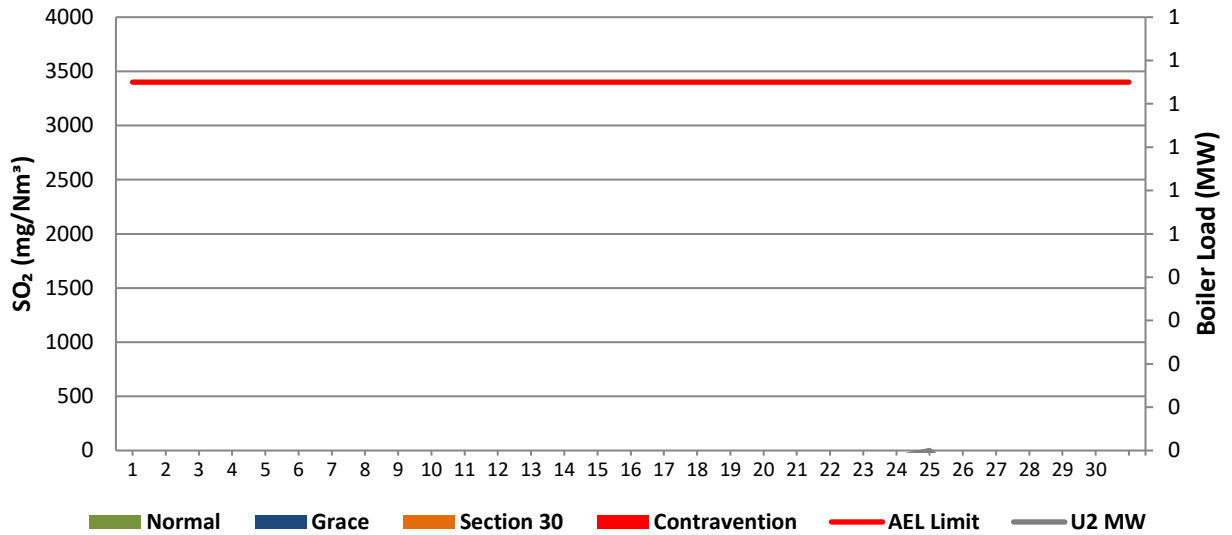


Figure 9: Tutuka Unit 3 SO₂ Emissions - September 2022

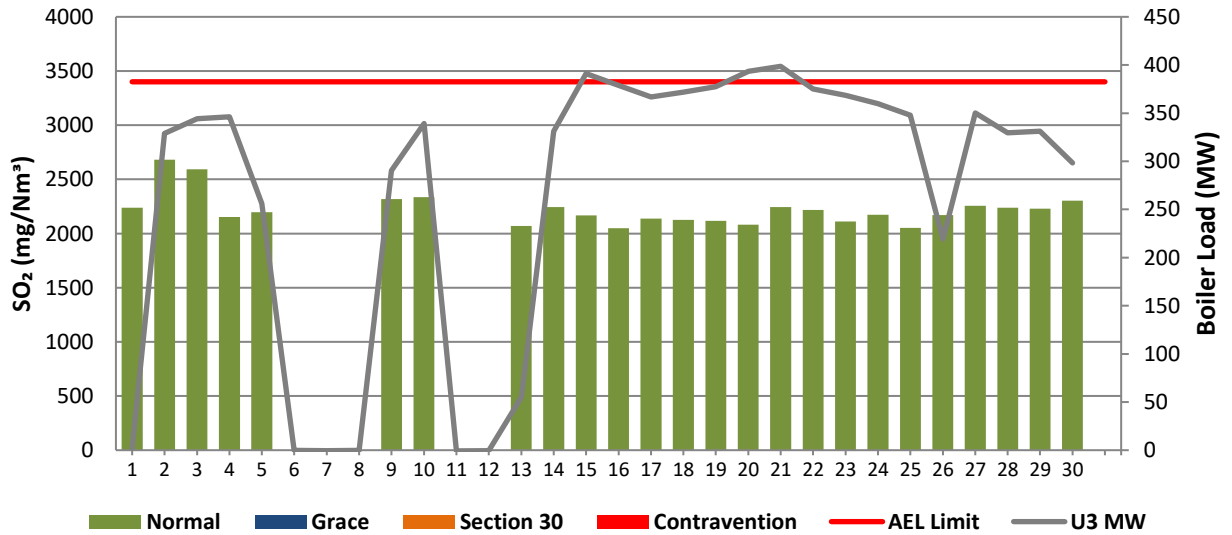


Figure 10: Tutuka Unit 4 SO₂ Emissions - September 2022

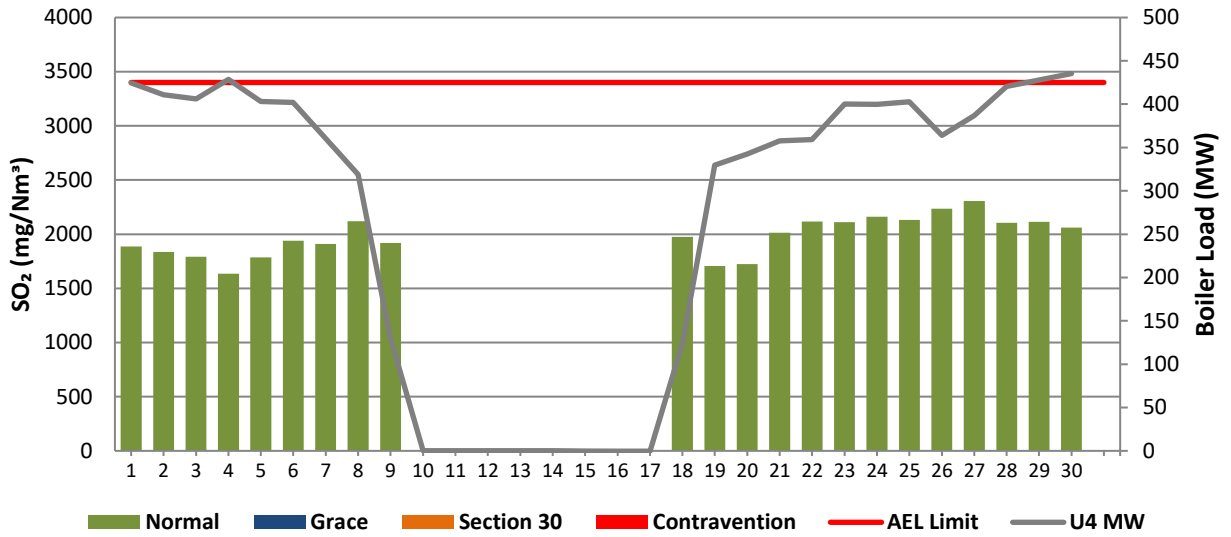


Figure 11: Tutuka Unit 5 SO₂ Emissions - September 2022

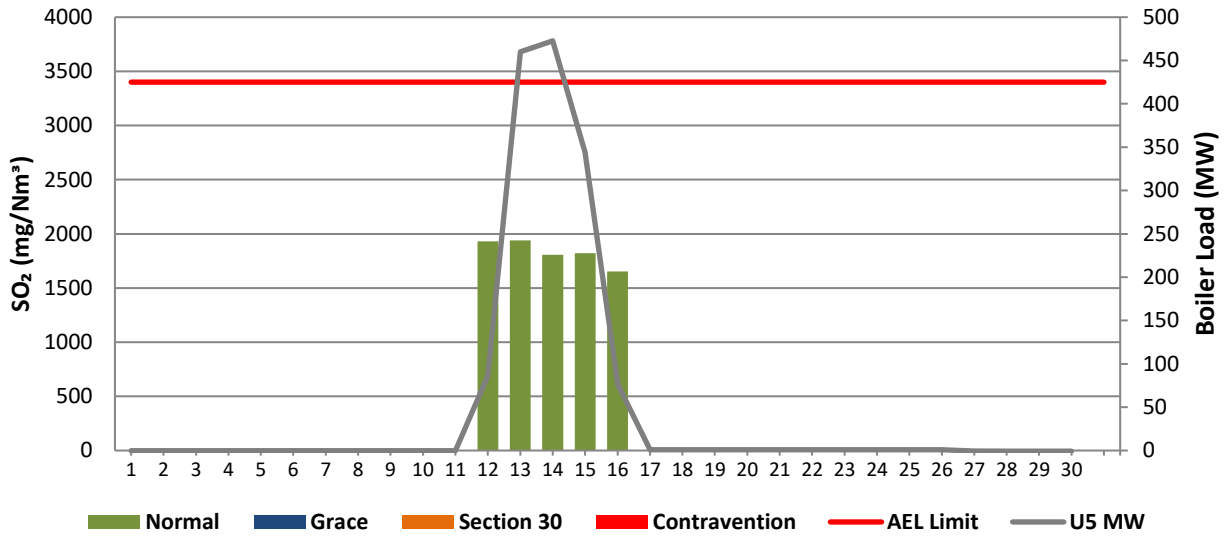


Figure 12: Tutuka Unit 6 SO₂ Emissions - September 2022

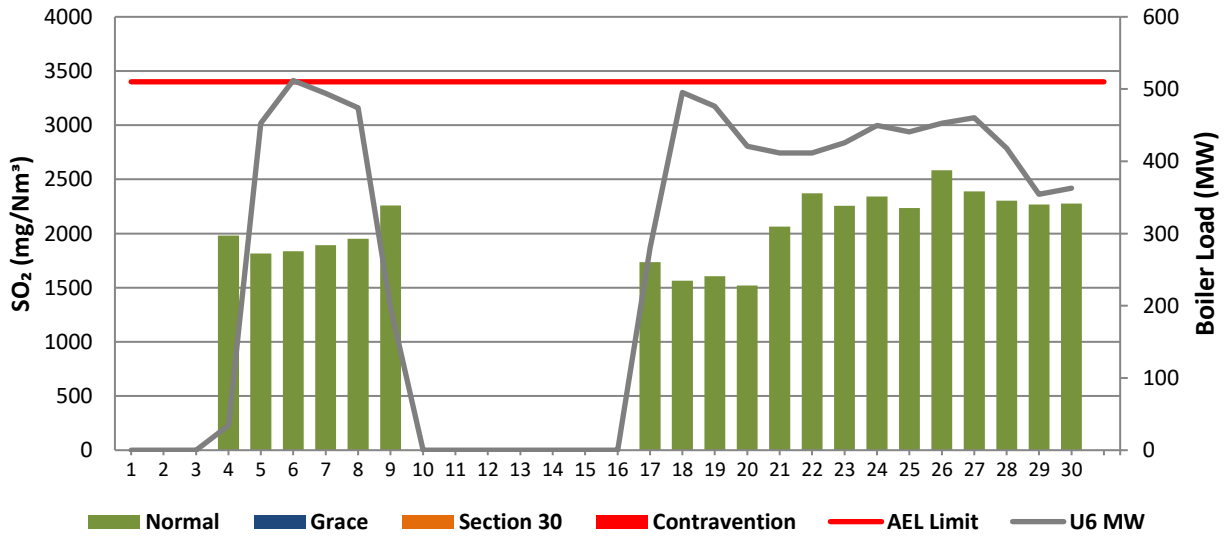


Figure 13: Tutuka Unit 1 NOx Emissions - September 2022

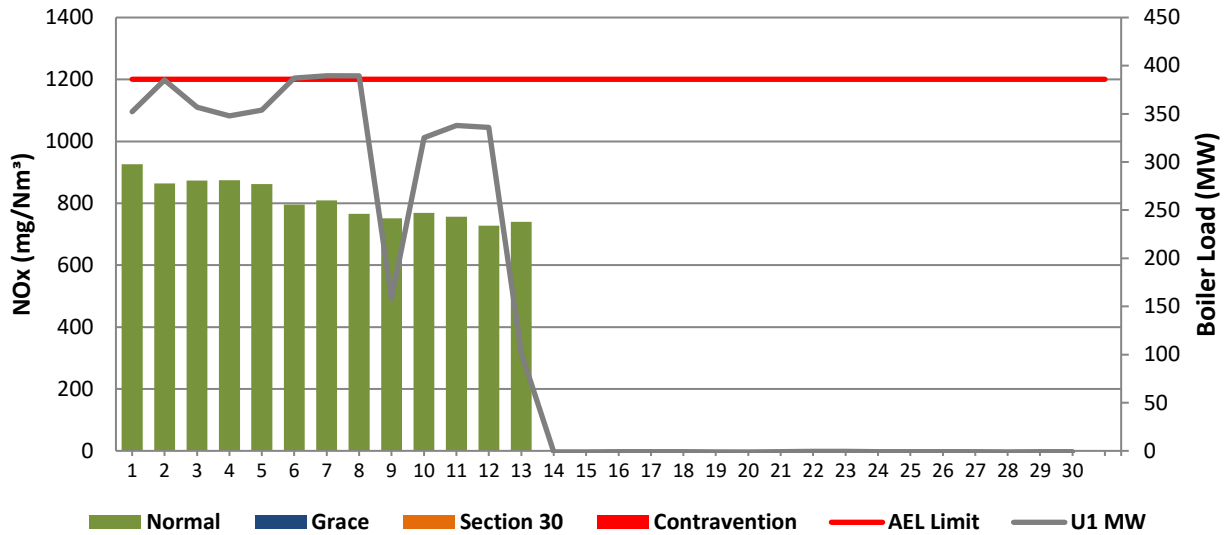


Figure 14: Tutuka Unit 2 NOx Emissions - September 2022

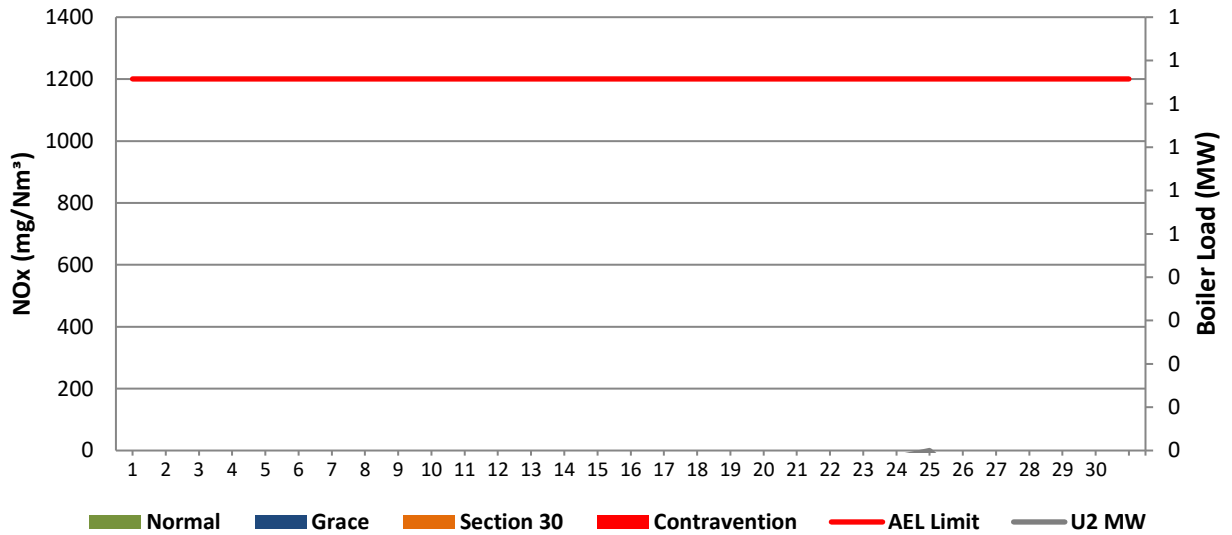


Figure 15: Tutuka Unit 3 NOx Emissions - September 2022

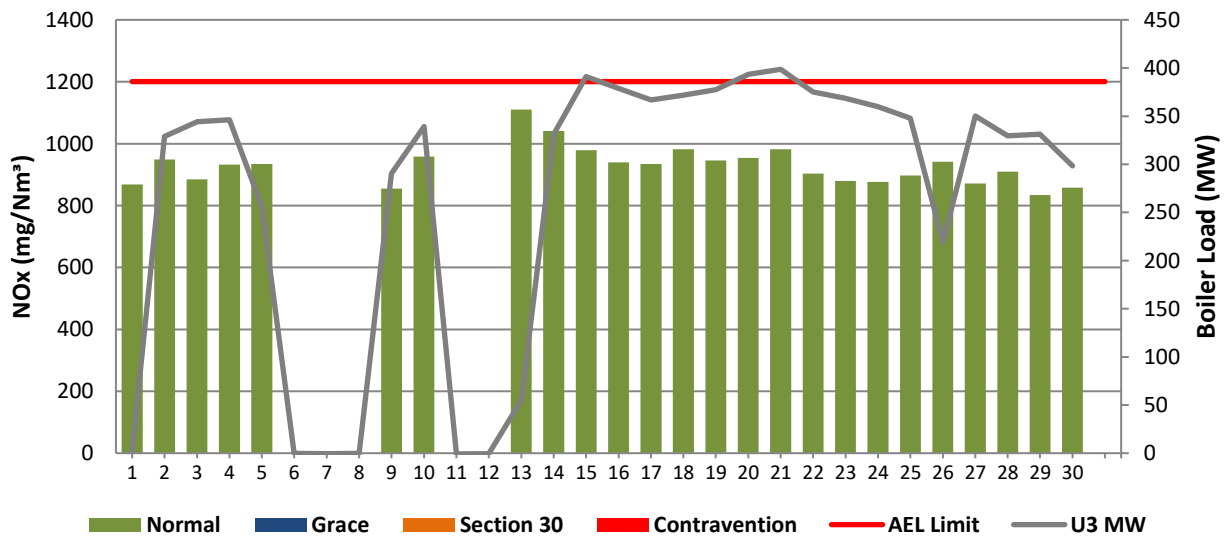


Figure 16: Tutuka Unit 4 NOx Emissions - September 2022

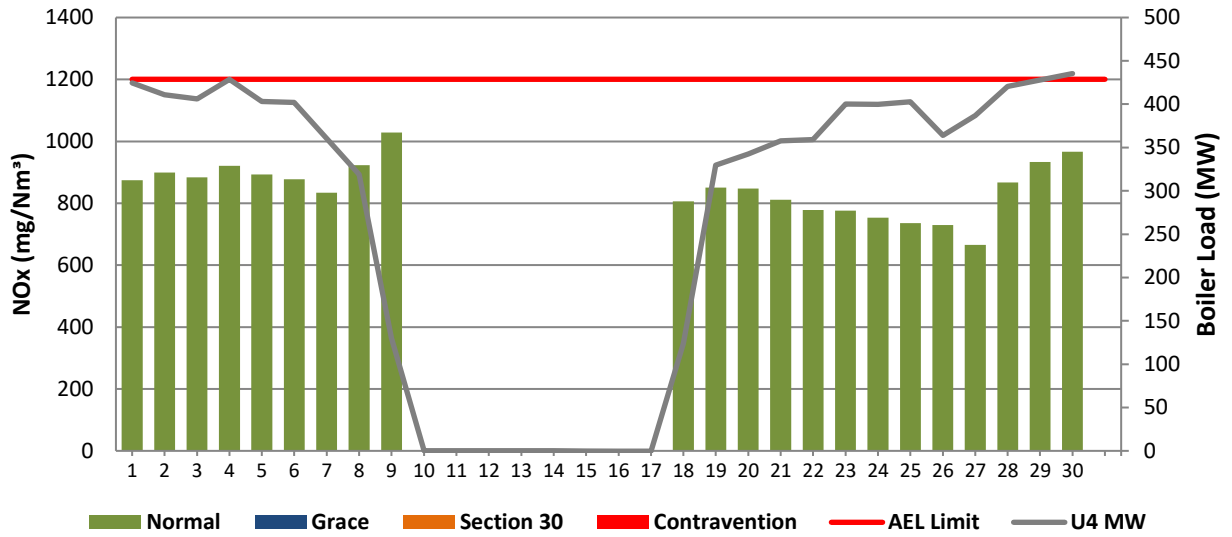


Figure 17: Tutuka Unit 5 NOx Emissions - September 2022

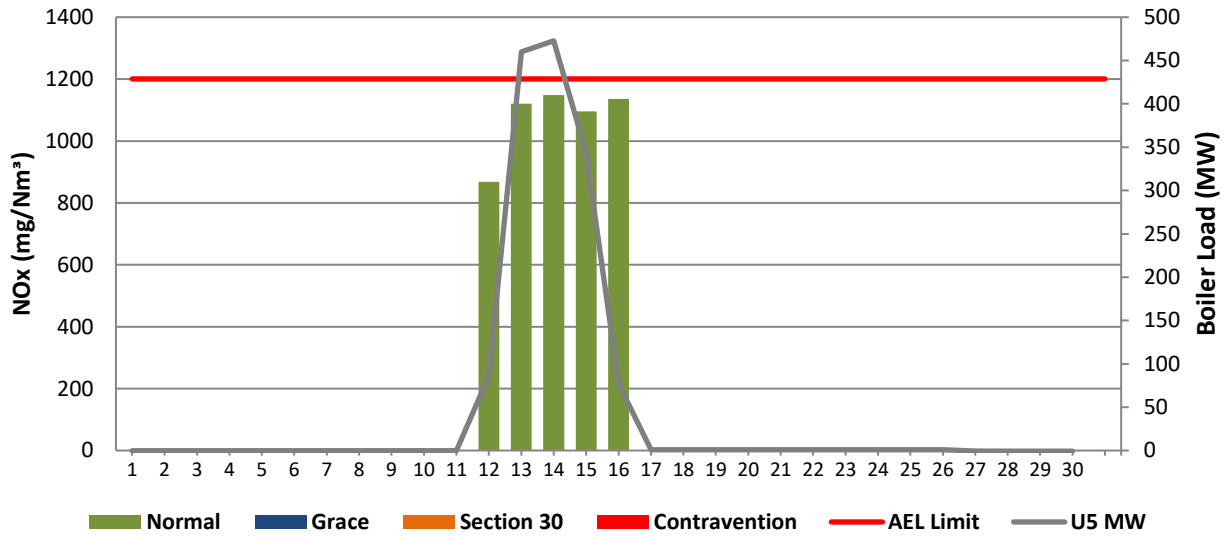
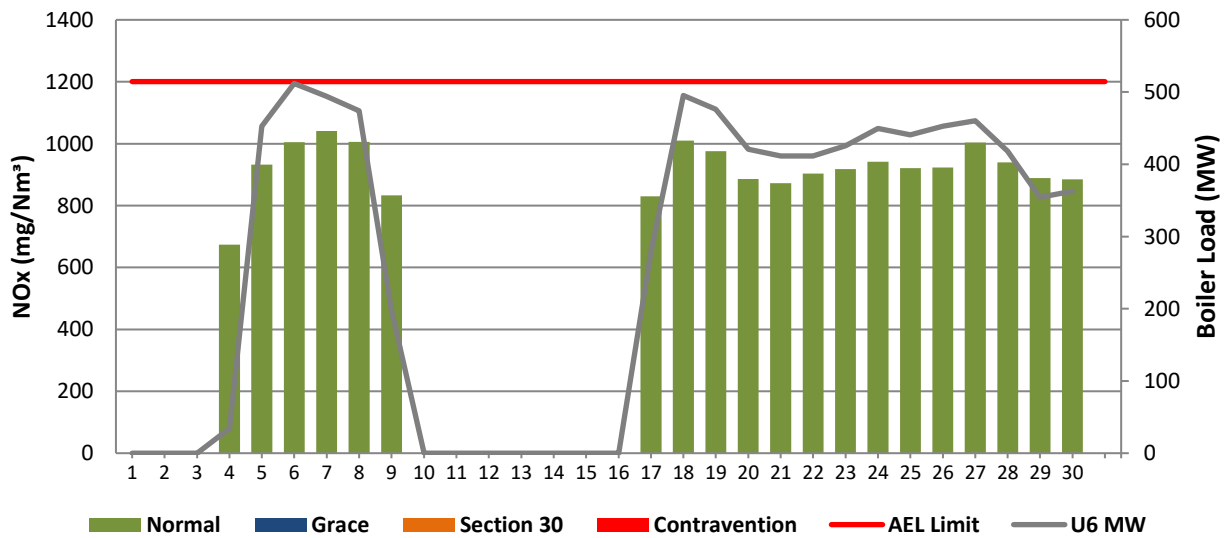


Figure 18: Tutuka Unit 6 NOx Emissions - September 2022



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 September 2022					

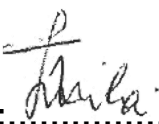
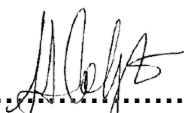

9. LIGHT UP INFORMATION

PM Start-up information for the month of September 2022

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

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 : 18 October 2022</p>	<p>Supported By: Mike Molepo</p> <p>SENIOR CHEMIST: BOILER ENGINEERING</p> <p>Signature: </p> <p>Date : 20/10/2022</p>
<p>Approved by: Sello Mametja GENERAL MANAGER: TUTUKA POWER STATION</p> <p>Signature: </p> <p>Date: 2022/10/20</p>	