

The Municipal Manager
Gert Sibande District Municipality
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Date: 20 April 2022
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Dear Mr Hlanyane

TUTUKA POWER STATION'S MONTHLY REPORT FOR THE MONTH OF MARCH 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 March 2023

The report presents the monthly trends for each monitored pollutant. There were few PM exceedances recorded which fell outside the 48-hour period given for normal start-ups, maintenance and shutdowns, in units 2 and 5. These were due to the challenges with the dust handling plant. The rest of the information demonstrates compliance with the emission license conditions.

The station also experienced challenges with its maintenance contract for gas monitors, hence maintenance of monitors was not conducted during the month of March. This affected the monitor reliability for Noxious gases in units 2 and 5. A short-term order was however put in place, maintenance and calibration of meters was done on the 4th of April 2023. The PM monitor for unit 2 maxed up due to upset operational conditions.

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 Mar-2023
	Coal	Tons	1 200 000	487 170
	Fuel Oil	Tons	10 000	6076.13

Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Mar-2023
	Energy	GWh	2611.44	735.2
	Ash	Tons	350 000	128 954
	RE Ash	kg/MWh	not specified	2.58

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
CV Content	MJ/kg	16-24	21.010
Sulphur Content	%	0.6 TO >2.6	1.210
Ash Content	%	21 TO >33	26.470

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 Mar-2023
Unit 1	Electro Static Precipitators (ESP)	99.2%
Unit 2	Electro Static Precipitators (ESP)	95.5%
Unit 3	Electro Static Precipitators (ESP)	100.0%
Unit 4	Electro Static Precipitators (ESP)	99.4%
Unit 5	Electro Static Precipitators (ESP)	98.1%
Unit 6	Electro Static Precipitators (ESP)	Unit off-load

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

5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO ₂	NO	O ₂
Unit 1	99.3	100.0	100.0	100.0
Unit 2	46.1	95.3	49.5	96.4
Unit 3	<i>Unit offload</i>			
Unit 4	100.0	100.0	100.0	100.0
Unit 5	99.8	99.5	66.5	100.0
Unit 6	<i>Unit offload</i>			

Note:

1. The station also experienced challenges with its maintenance contract for gas monitors, hence maintenance of monitors was not conducted during the month of March. This affected the monitor reliability for Noxious gases in units 2 and 5. A short-term order was however put in place, maintenance and calibration of meters was done on the 4th of April 2023.

2. The PM monitor for unit 2 maxed up due to upset operational conditions

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
Unit 1	31	0	0	0	0	208.4
Unit 2	0	4	0	15	19	414.4
Unit 3	0	0	0	0	0	
Unit 4	16	2	0	0	2	228.4
Unit 5	9	8	0	4	12	314.5
Unit 6	0	0	0	0	0	
SUM	56	14	0	19	33	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO ₂ (mg/Nm ³)
Unit 1	31	0	0	0	0	1 913.4
Unit 2	22	0	0	0	0	1 677.3
Unit 3	0	0	0	0	0	
Unit 4	19	0	0	0	0	1 993.7
Unit 5	23	0	0	0	0	1 906.7
Unit 6	1	0	0	0	0	2 446.5
SUM	96	0	0	0	0	

Table 6.4: Operating days in compliance to NOx AEL Limit - March 2023

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm ³)
Unit 1	31	0	0	0	0	934.0
Unit 2	10	0	0	1	1	860.1
Unit 3	0	0	0	0	0	
Unit 4	19	0	0	0	0	915.3
Unit 5	16	0	0	0	0	835.7
Unit 6	0	0	0	0	0	
SUM	76	0	0	1	1	

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

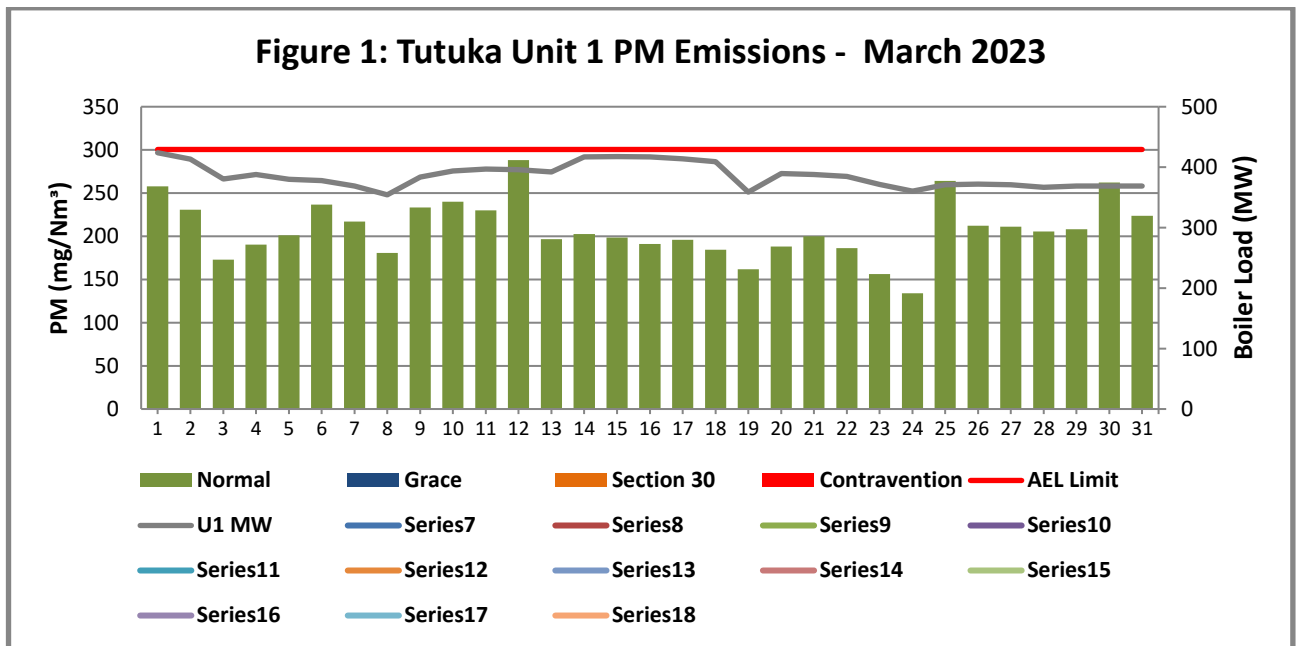
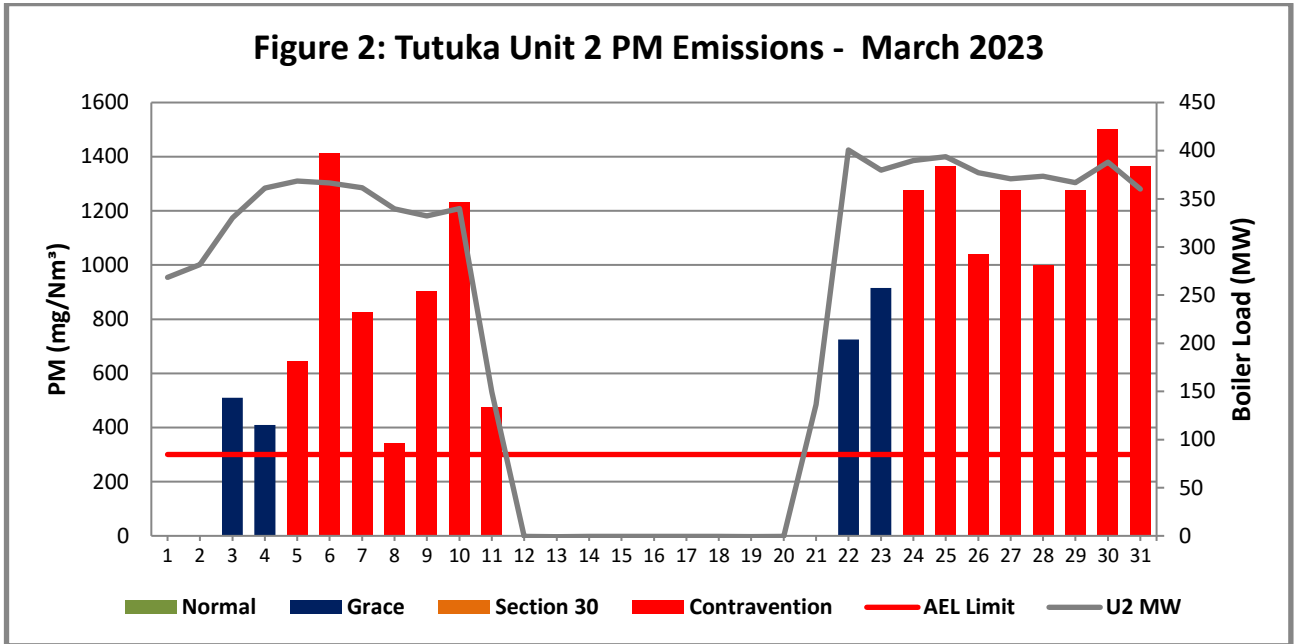


Figure 2: Tutuka Unit 2 PM Emissions - March 2023



Note: Dust Handling plant broke down. The transfer conveyor A2 gearbox and motor were damaged, the gearbox was collected by the manufacturer for quote and strip. Electrical Maintenance Department attended to the transfer conveyor C2 motor on site. A 11-kW motor pinion and hub were also sent away for new pinions manufacturing.

Figure 3: Tutuka Unit 3 PM Emissions - March 2023

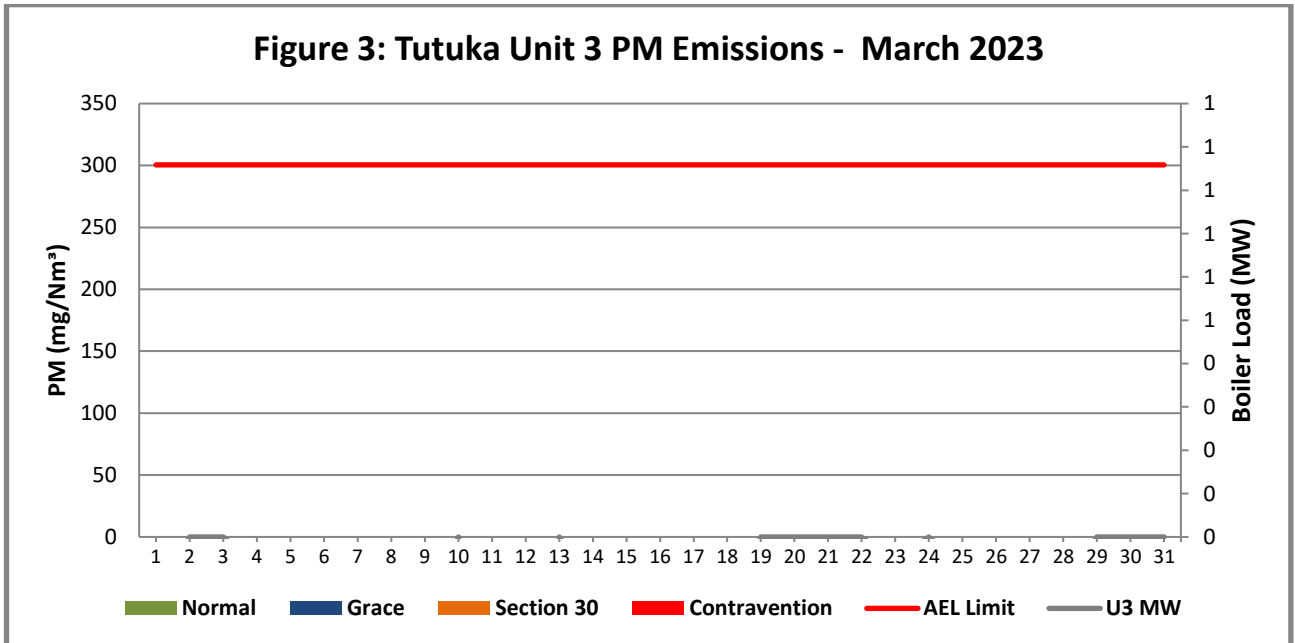


Figure 4: Tutuka Unit 4 PM Emissions - March 2023

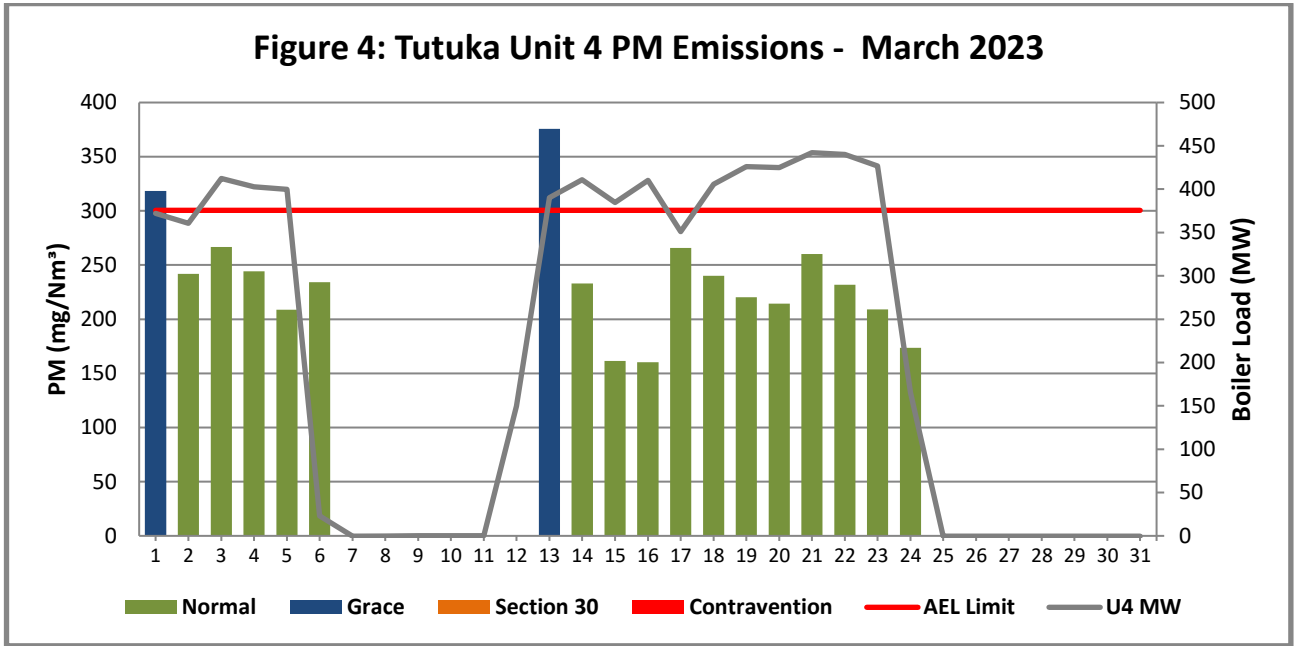


Figure 5: Tutuka Unit 5 PM Emissions - March 2023

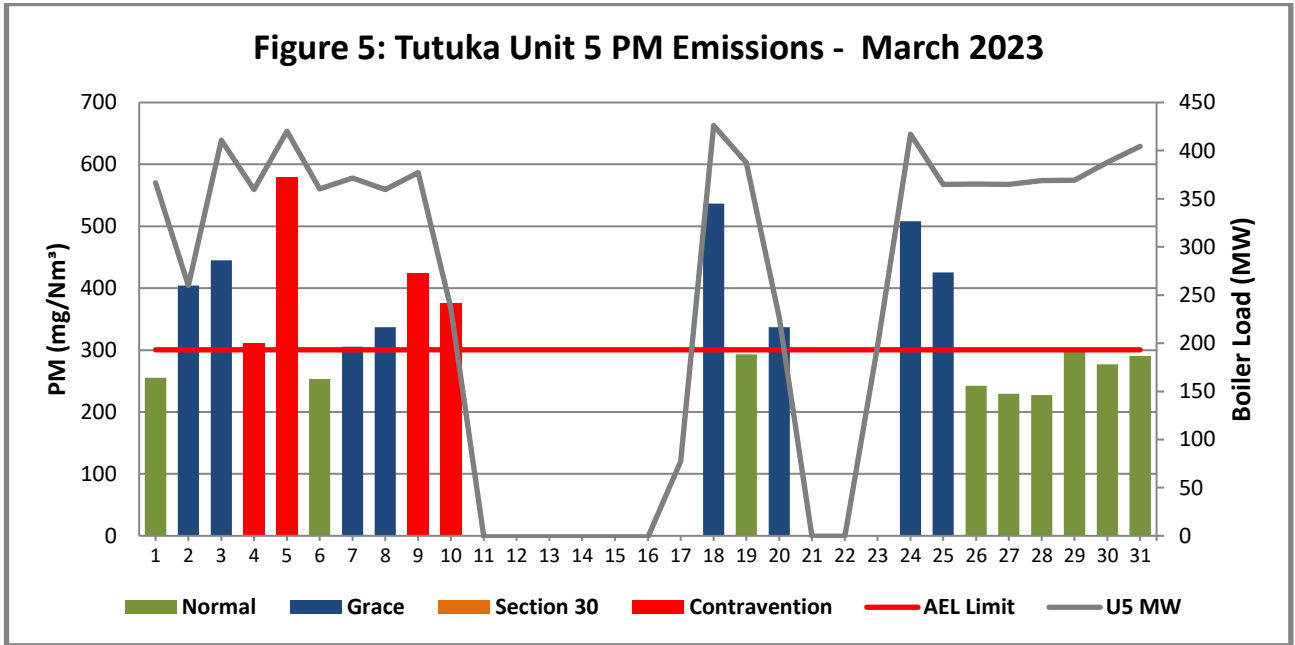


Figure 6: Tutuka Unit 6 PM Emissions - March 2023

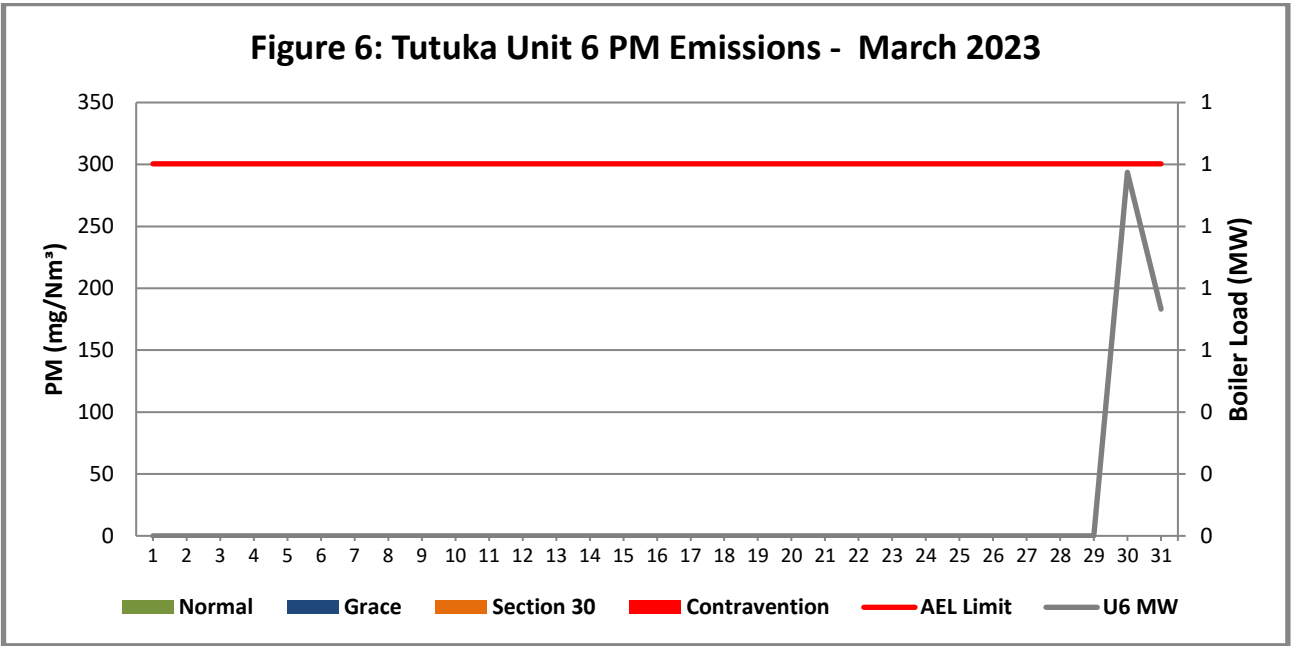


Figure 7: Tutuka Unit 1 SO₂ Emissions - March 2023

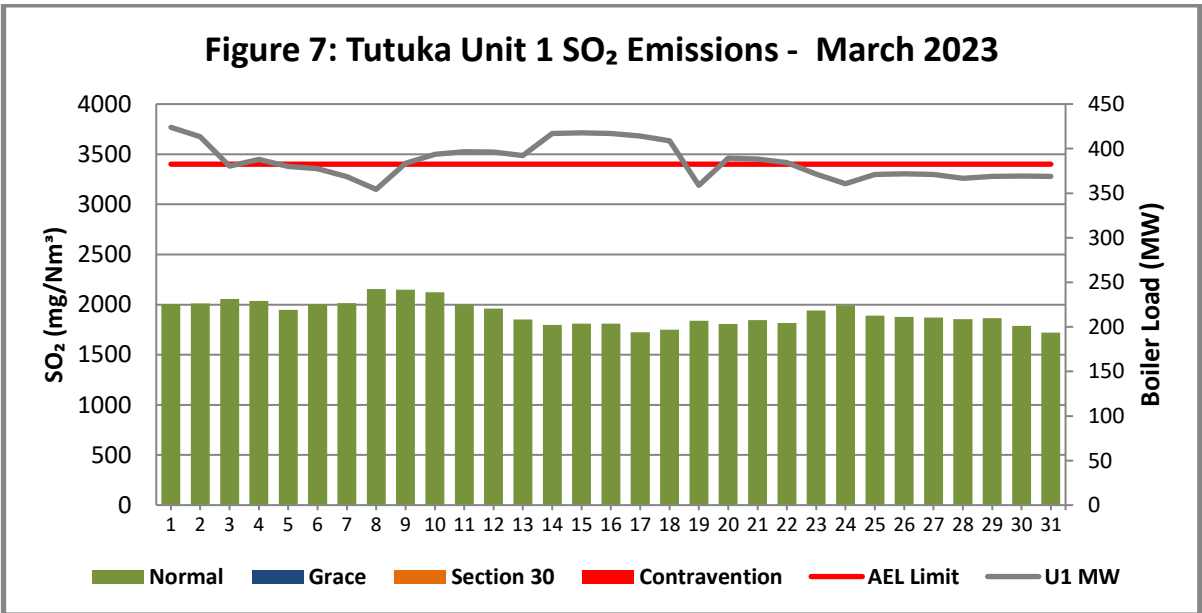


Figure 8: Tutuka Unit 2 SO₂ Emissions - March 2023

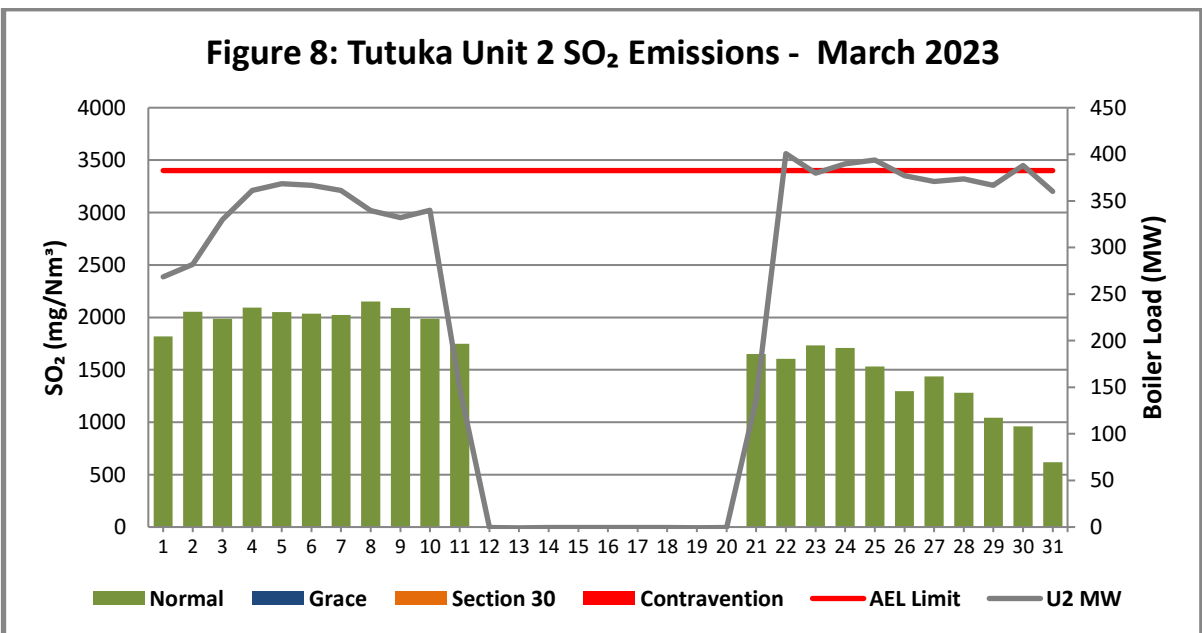


Figure 9: Tutuka Unit 3 SO₂ Emissions - March 2023

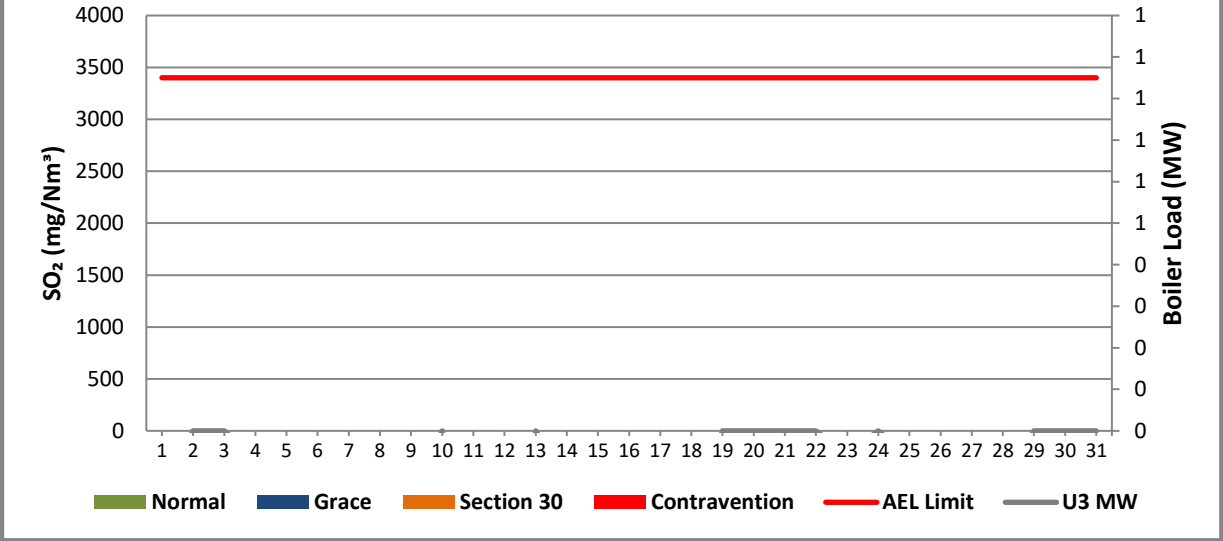


Figure 10: Tutuka Unit 4 SO₂ Emissions - March 2023

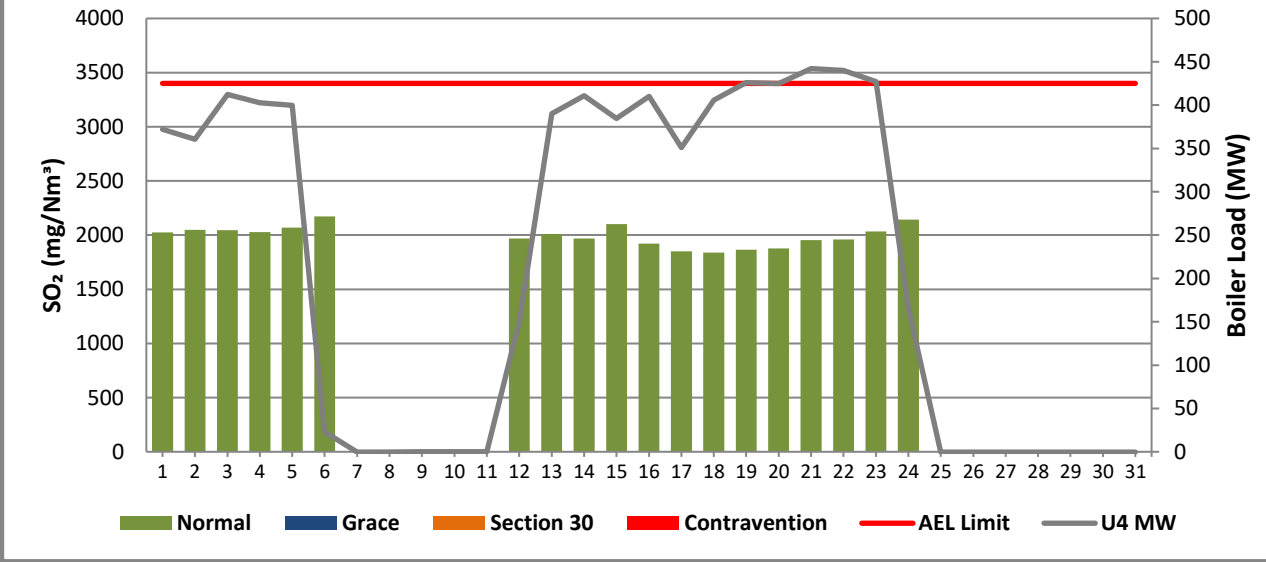


Figure 11: Tutuka Unit 5 SO₂ Emissions - March 2023

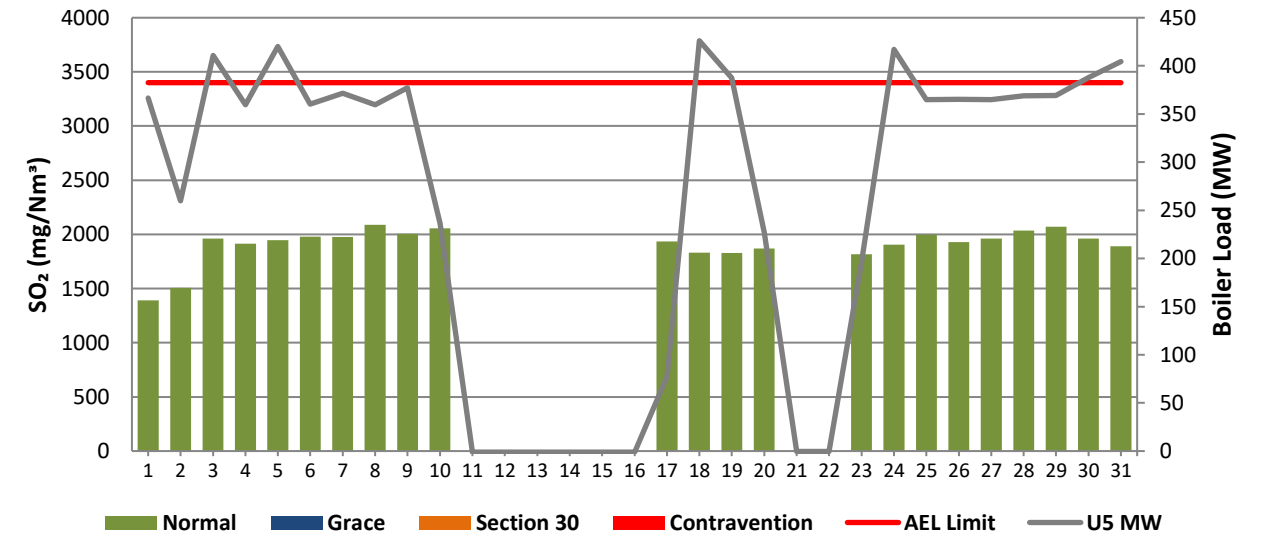


Figure 12: Tutuka Unit 6 SO₂ Emissions - March 2023

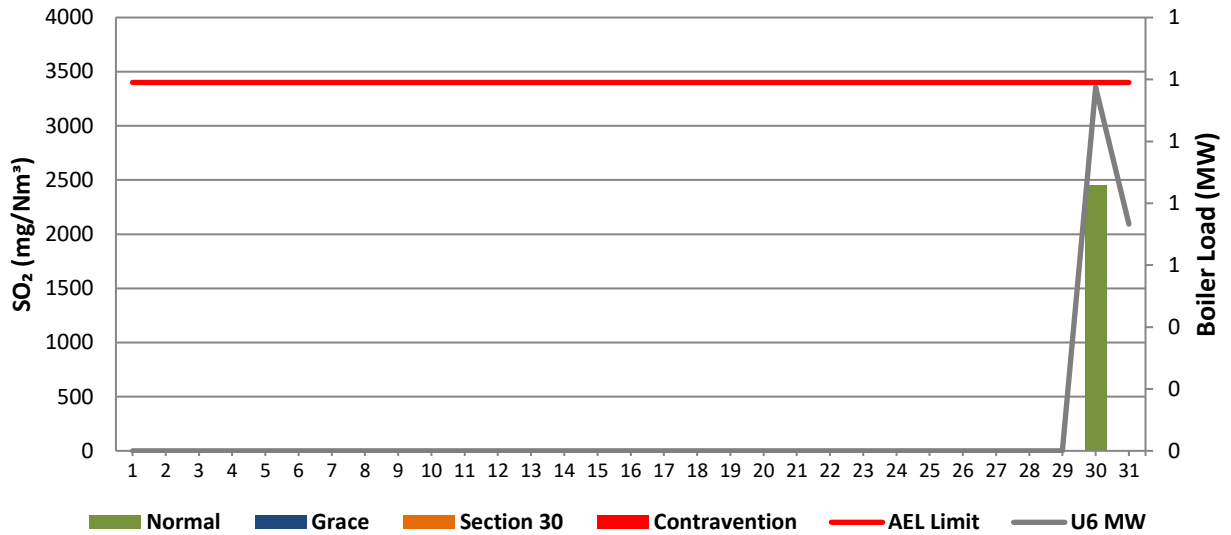


Figure 13: Tutuka Unit 1 NO_x Emissions - March 2023

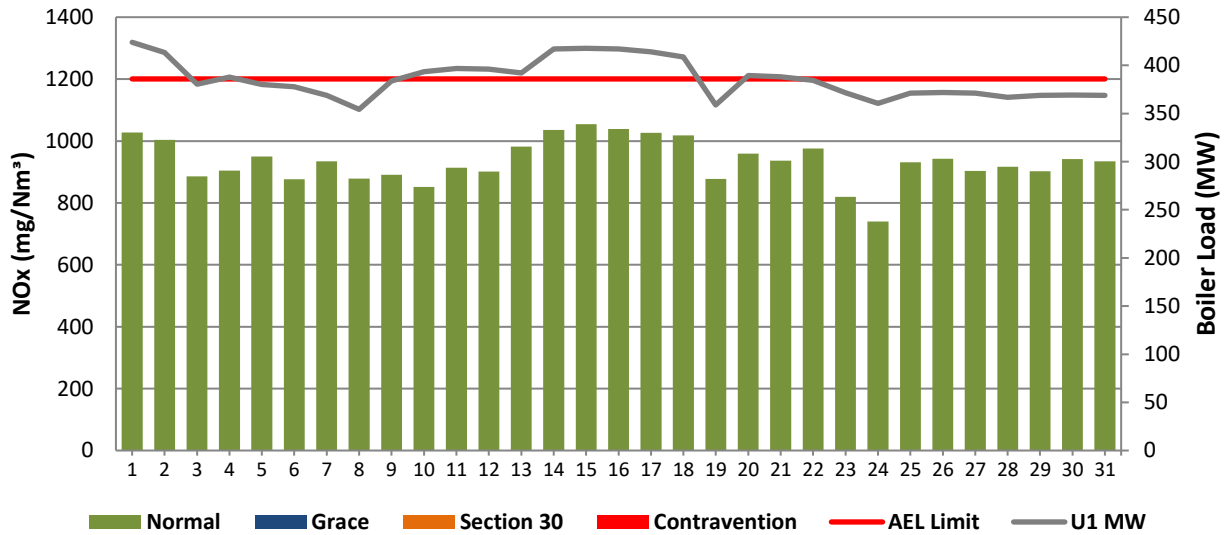


Figure 14: Tutuka Unit 2 NO_x Emissions - March 2023

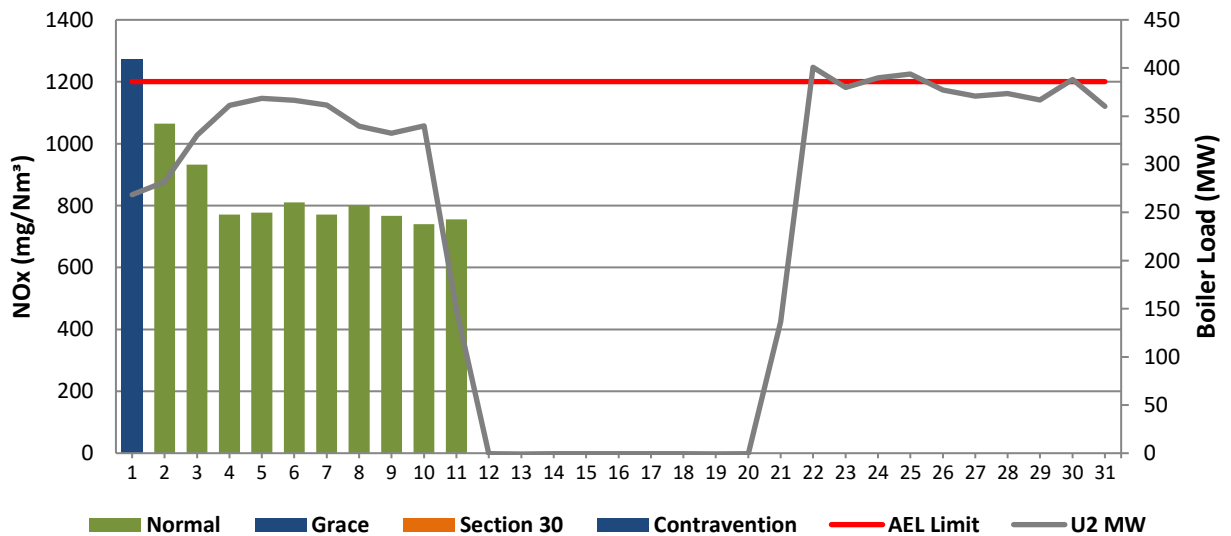


Figure 15: Tutuka Unit 3 NOx Emissions - March 2023

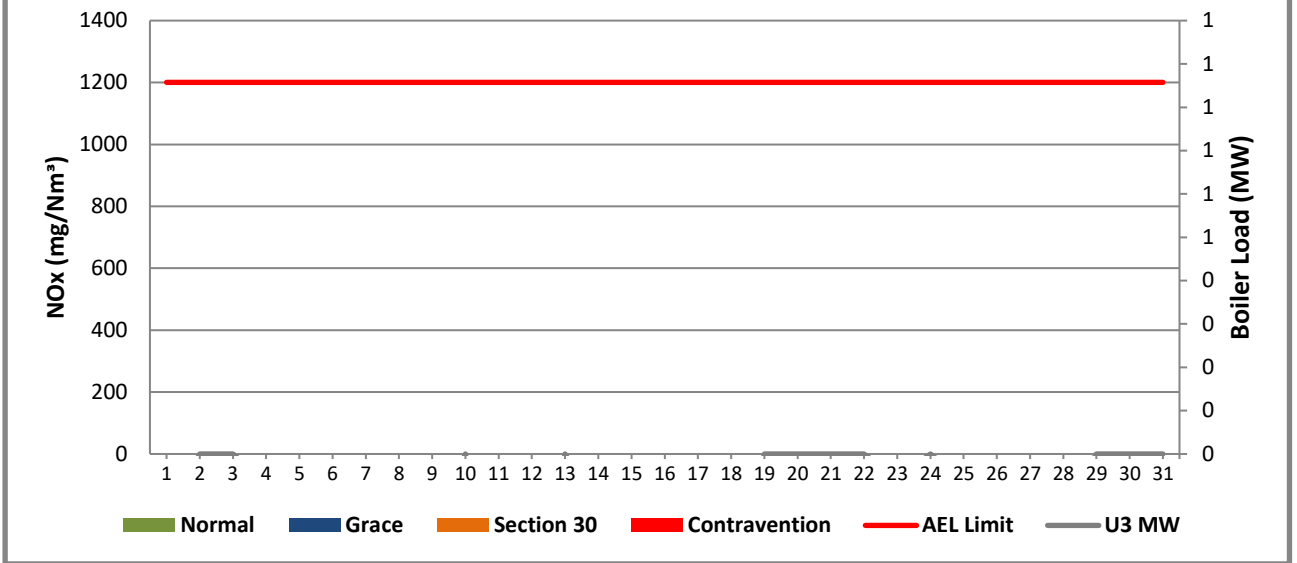
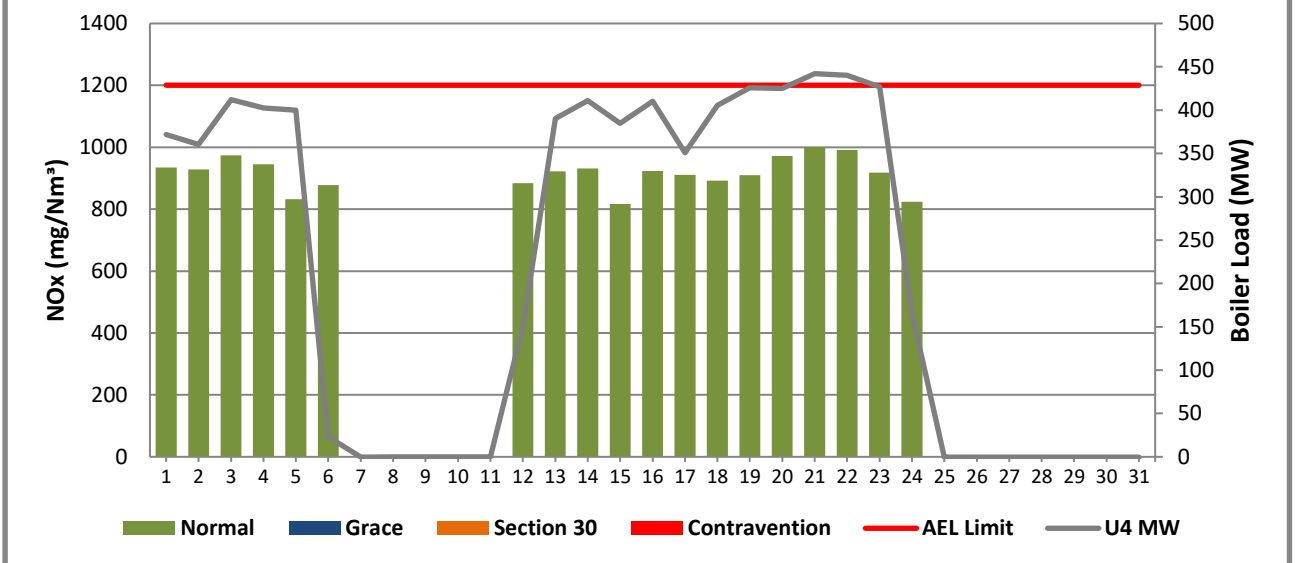
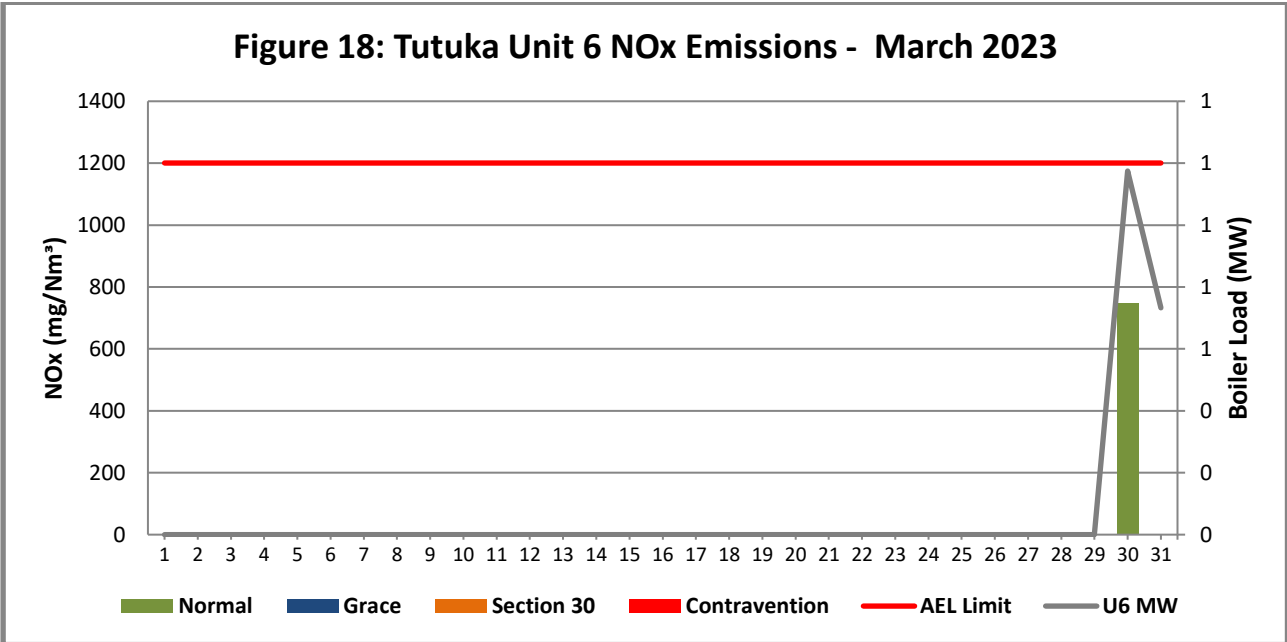
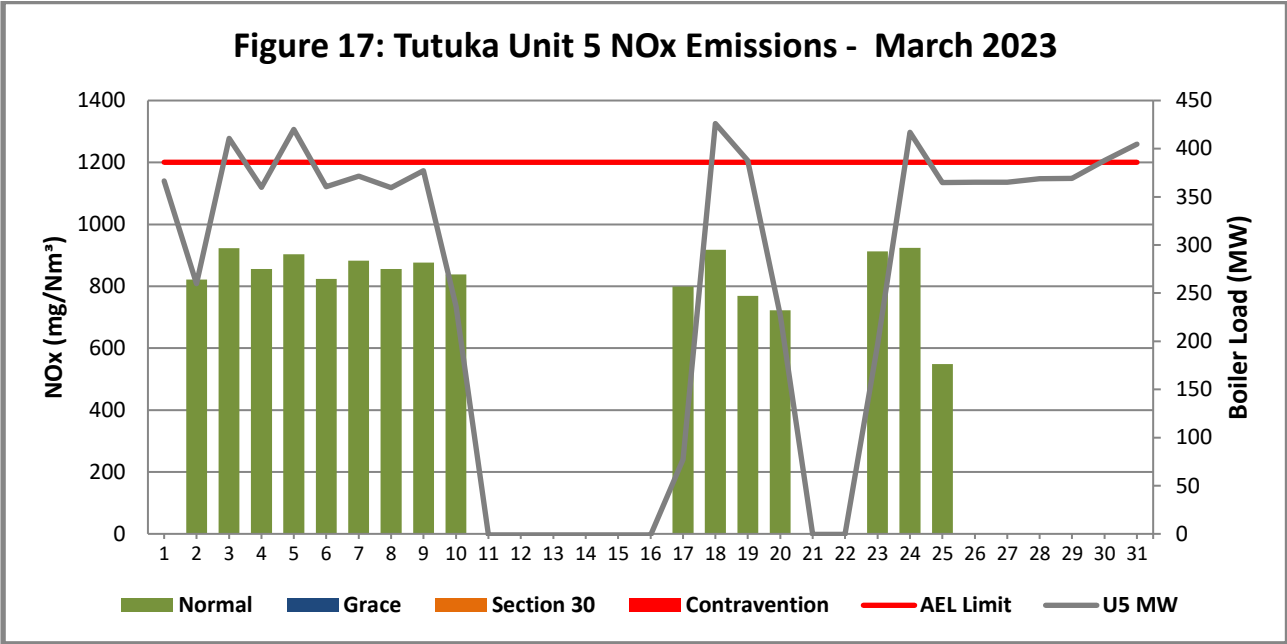


Figure 16: Tutuka Unit 4 NOx Emissions - March 2023







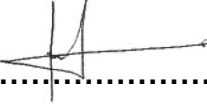
7. COMPLAINTS REGISTER

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
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No complaints were received for the month of April 2023

For more information or enquiries contact the Tutuka environmental team.

Yours Sincerely

<p>Compiled by: Xoli Jila SENIOR ADVISOR ENVIRONMENTAL</p> <p>Signature: </p> <p>Date : 25 April 2023</p>	<p>Supported By: Phil Hoop BOILER ENGINEERING MANAGER</p> <p>Signature: </p> <p>Date : 25 April 2023</p>
<p>Approved by: Mxolisi Ntanzu GENERAL MANAGER: TUTUKA POWER STATION</p> <p>Signature: </p> <p>Date: 25 April 2023</p>	