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Date:  
 19 May 2023

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Dear Mr Hlanyane

### TUTUKA POWER STATION MONTHLY REPORT FOR APRIL 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 April 2023

The report presents monthly trends for each monitored pollutant. There was a total of 15 PM exceedances recorded which fell outside the 48-hour grace period incurred in units 2, 3 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.

#### 1. RAW MATERIALS AND PRODUCTS

Raw Materials and Products	Raw Material Type	Units	Max. Permitted	Actual Consumptio Apr-2023
	Coal	Tons	1 200 000	406 586
	Fuel Oil	Tons	10 000	5343.39
Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Apr-2023
	Energy	GWh	2527.2	653.8
	Ash	Tons	350 000	111 160
	RE Ash	kg/MWh	not specified	2.44

## 2. ENERGY SOURCE CHARACTERISTICS

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
CV Content	MJ/kg	16-24	20.080
Sulphur Content	%	0.6 TO >2.6	1.170
Ash Content	%	21 TO >33	27.340

## 3. EMISSION LIMITS (mg/Nm<sup>3</sup>)

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 Apr-2023
Unit 1	Electro Static Precipitators (ESP)	99.4%
Unit 2	Electro Static Precipitators (ESP)	97.3%
Unit 3	Electro Static Precipitators (ESP)	98.3%
Unit 4	Electro Static Precipitators (ESP)	99.1%
Unit 5	Electro Static Precipitators (ESP)	97.8%
Unit 6	Electro Static Precipitators (ESP)	

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

## 5. MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO <sub>2</sub>	NO	O <sub>2</sub>
Unit 1	100.0	99.7	99.7	99.7
Unit 2	71.5	79.8	76.7	98.9
Unit 3	79.9	100.0	100.0	100.0
Unit 4	98.5	52.2	73.0	95.1
Unit 5	100.0	31.4	1.9	99.6
Unit 6		0.0	0.0	0.0

Note:

1. There were challenges with the maintenance contract for gas monitors, hence maintenance of monitors was not conducted once during month of April. This affected the monitor reliability for Noxious gases in units 2, 4 and 5.

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

## 6. EMISSION PERFORMANCE

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

Associated Unit/Stack	PM (tons)	SO <sub>2</sub> (tons)	NO <sub>x</sub> (tons)
Unit 1	86.6	1 164	498
Unit 2	458.4	1 037	420
Unit 3	137.2	649	317
Unit 4	296.6	1 986	699
Unit 5	615.5	960	44
Unit 6	0.0	0	0
<b>SUM</b>	<b>1 594.3</b>	<b>5 796</b>	<b>1 978</b>

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm <sup>3</sup> )
Unit 1	12	0	0	0	0	150.9
Unit 2	2	7	0	4	11	346.7
Unit 3	3	2	0	1	3	274.9
Unit 4	12	9	0	0	9	283.6
Unit 5	15	5	0	10	15	300.4
Unit 6	0	0	0	0	0	
<b>SUM</b>	<b>44</b>	<b>23</b>	<b>0</b>	<b>15</b>	<b>38</b>	

Table 6.3: Operating days in compliance to SO<sub>2</sub> AEL Limit - April 2023

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO <sub>2</sub> (mg/Nm <sup>3</sup> )
Unit 1	12	0	0	0	0	2 073.9
Unit 2	14	0	0	0	0	1 787.8
Unit 3	7	0	0	0	0	2 058.5
Unit 4	23	0	0	0	0	2 087.3
Unit 5	11	0	0	0	0	1 234.7
Unit 6	1	0	0	0	0	2 446.5
<b>SUM</b>	<b>68</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

Table 6.4: Operating days in compliance to NO<sub>x</sub> AEL Limit - April 2023

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO <sub>x</sub> (mg/Nm <sup>3</sup> )
Unit 1	12	0	0	0	0	877.6
Unit 2	12	0	0	0	0	810.4
Unit 3	3	0	0	0	0	1 007.7
Unit 4	20	0	0	3	3	892.3
Unit 5	2	0	0	0	0	316.3
Unit 6	1	0	0	0	0	749.1
<b>SUM</b>	<b>50</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>3</b>	

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 - April 2023

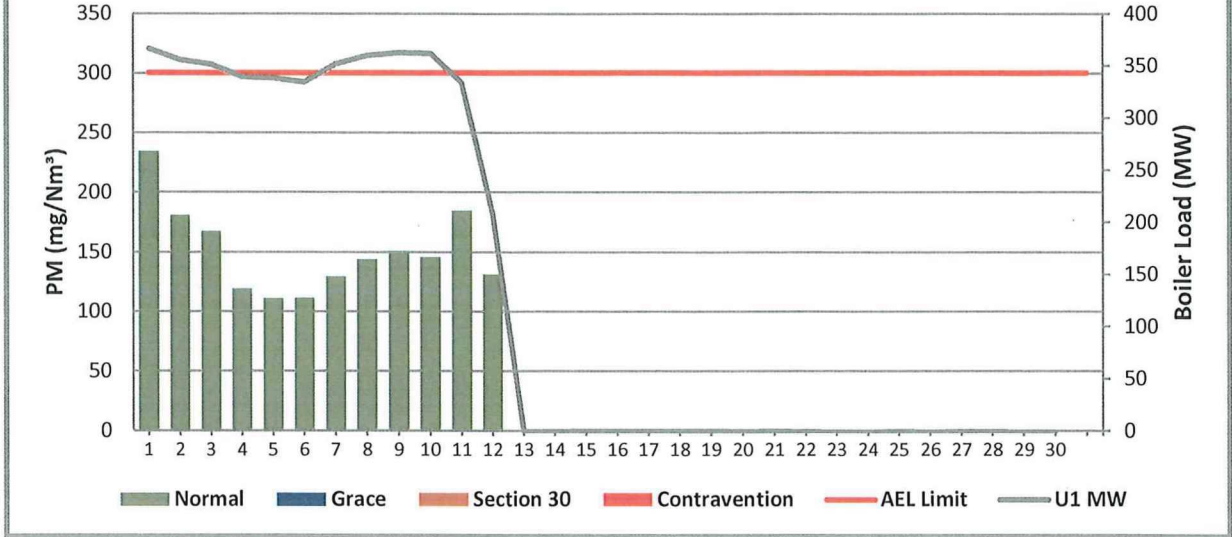
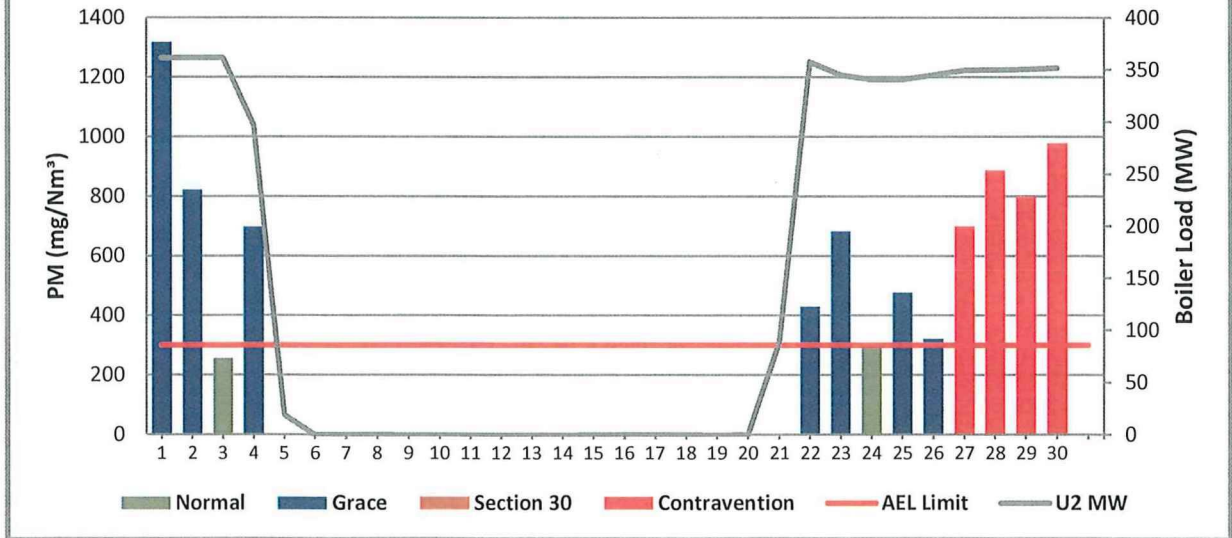
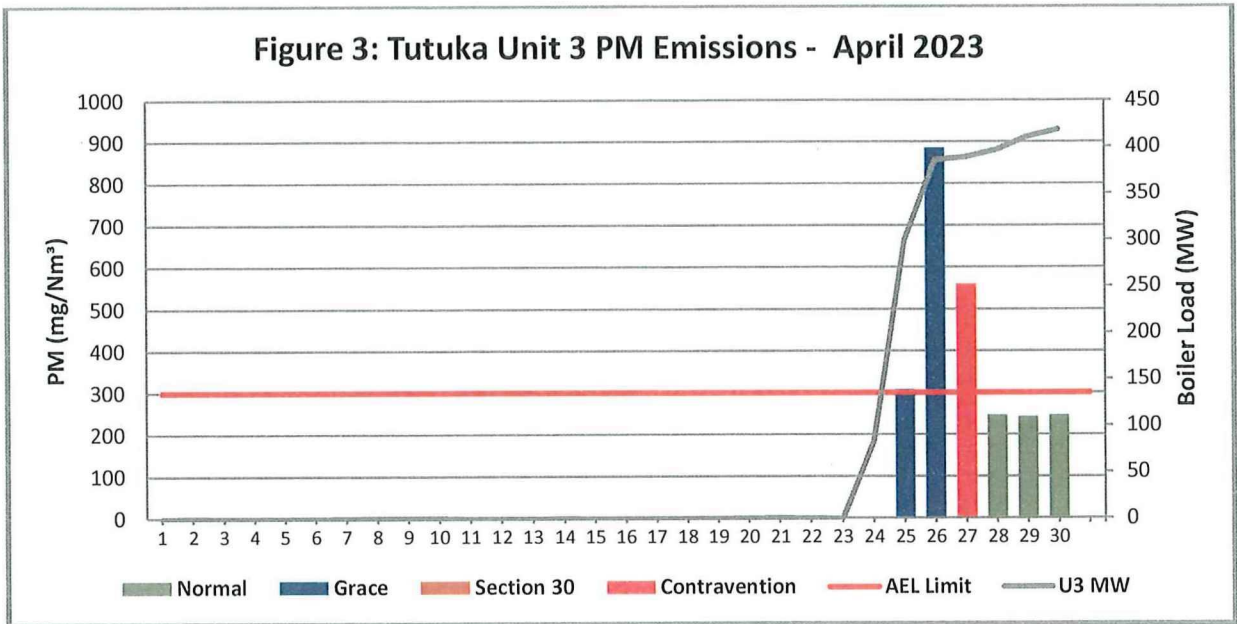


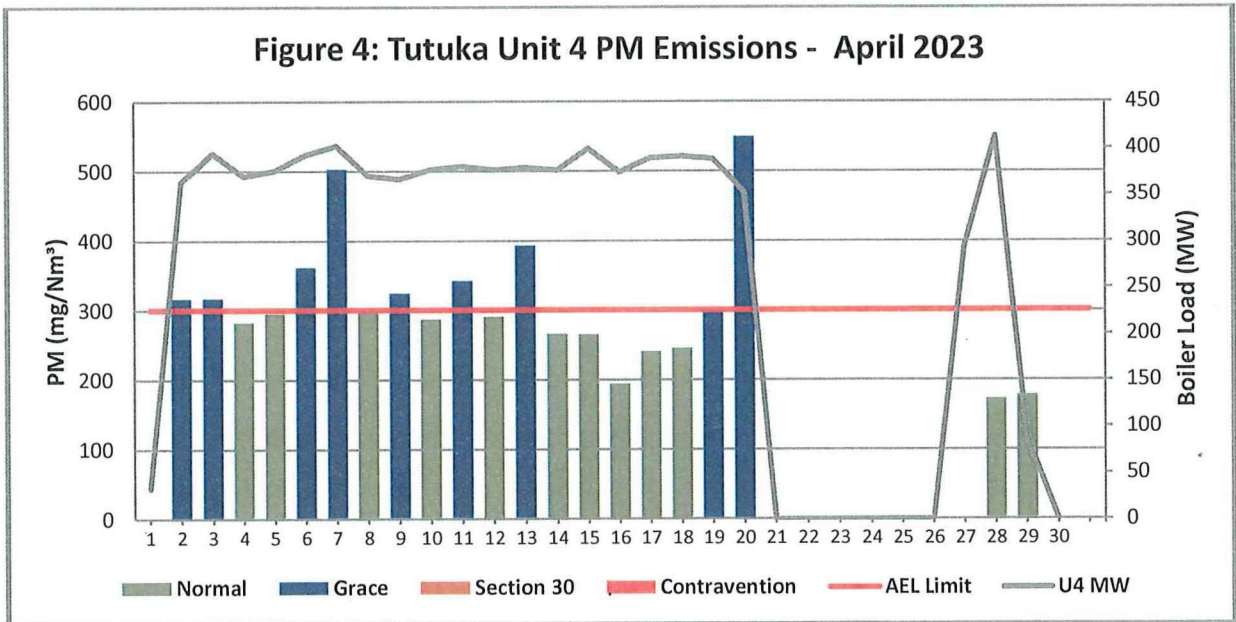
Figure 2: Tutuka Unit 2 PM Emissions - April 2023



**Figure 3: Tutuka Unit 3 PM Emissions - April 2023**



**Figure 4: Tutuka Unit 4 PM Emissions - April 2023**



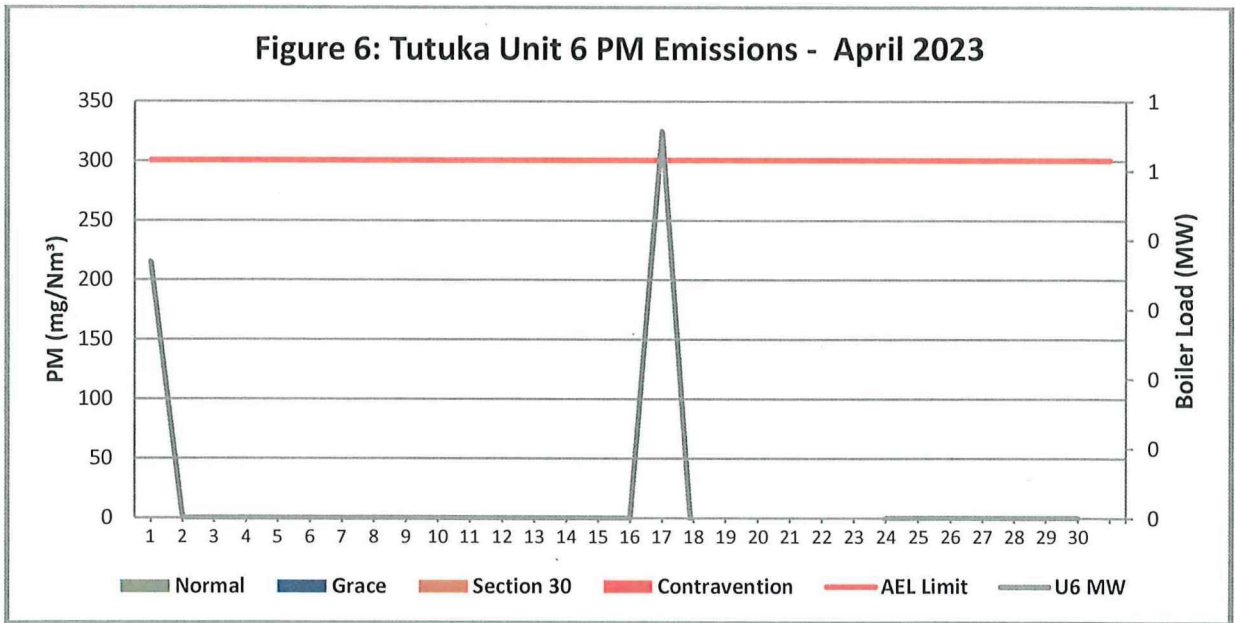
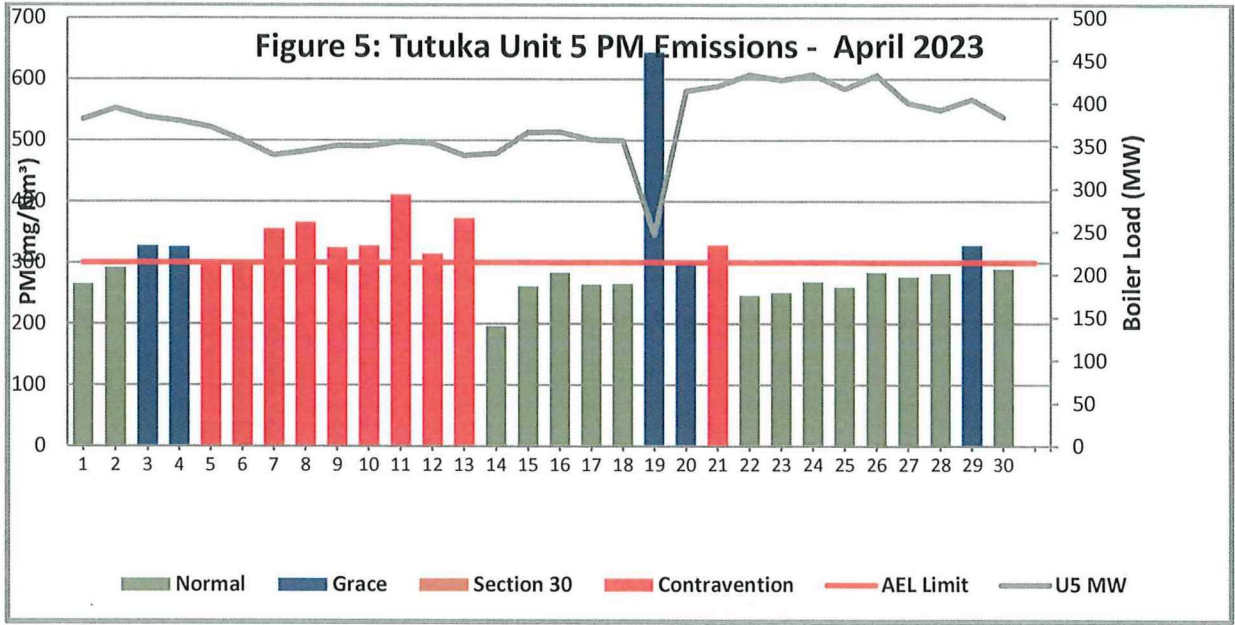


Figure 7: Tutuka Unit 1 SO<sub>2</sub> Emissions - April 2023

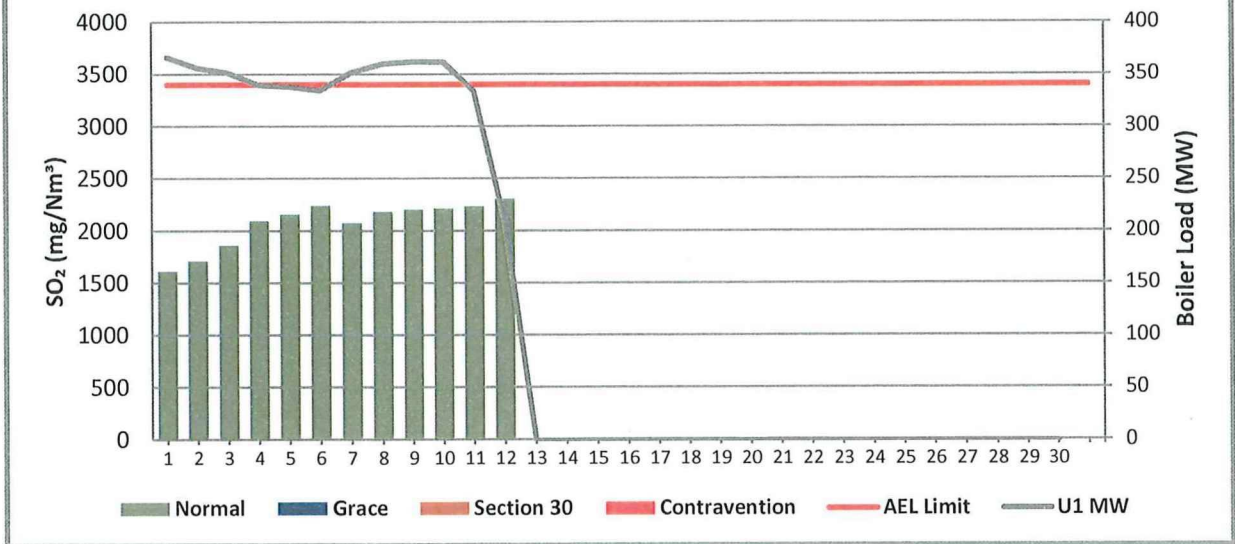


Figure 8: Tutuka Unit 2 SO<sub>2</sub> Emissions - April 2023

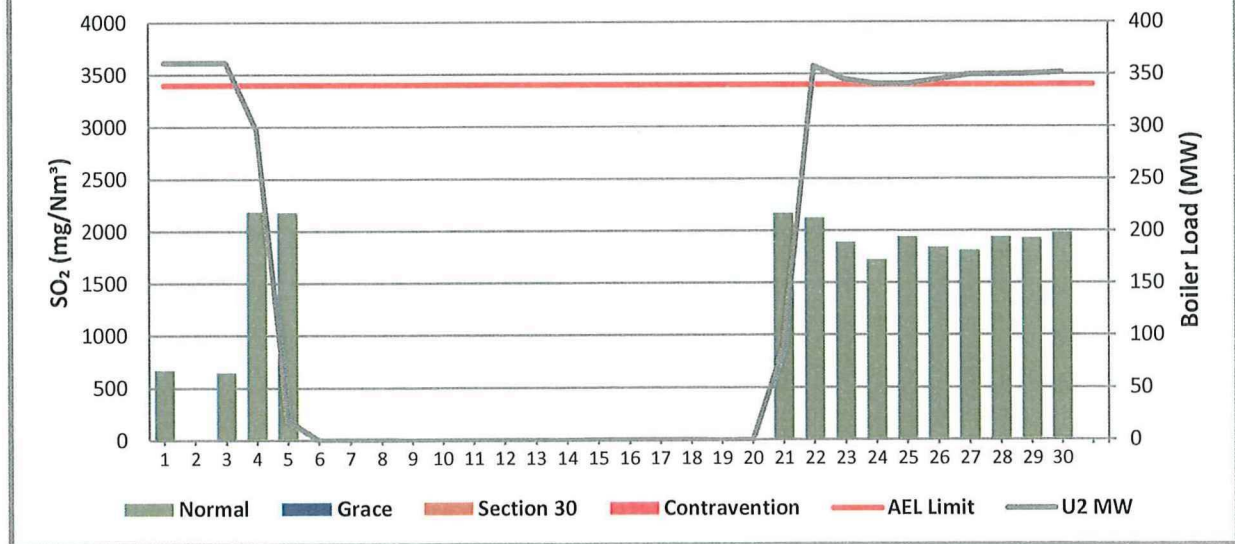


Figure 9: Tutuka Unit 3 SO<sub>2</sub> Emissions - April 2023

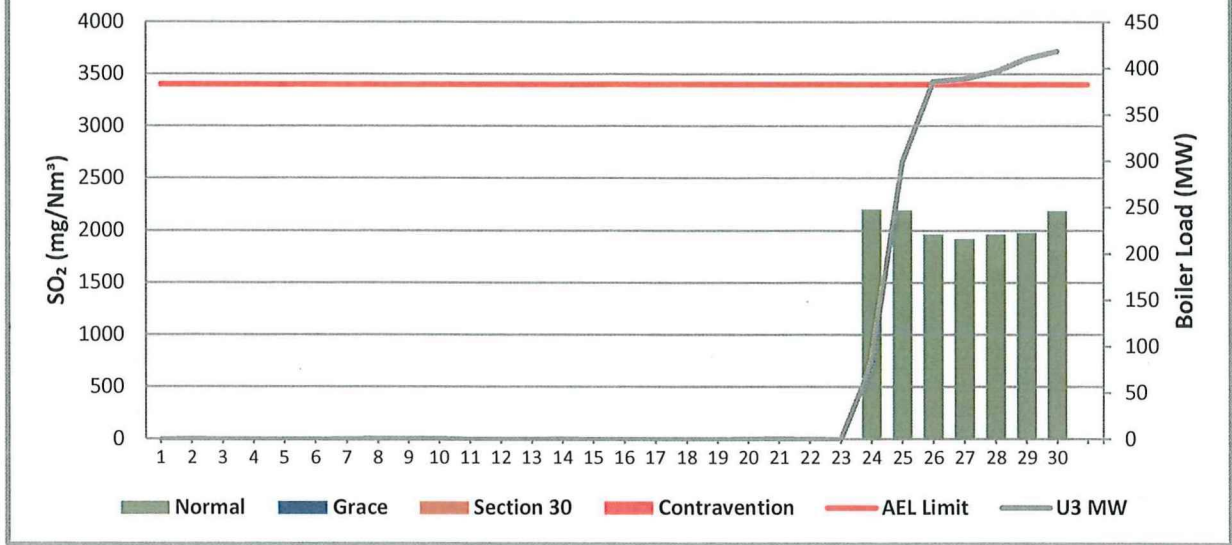


Figure 10: Tutuka Unit 4 SO<sub>2</sub> Emissions - April 2023

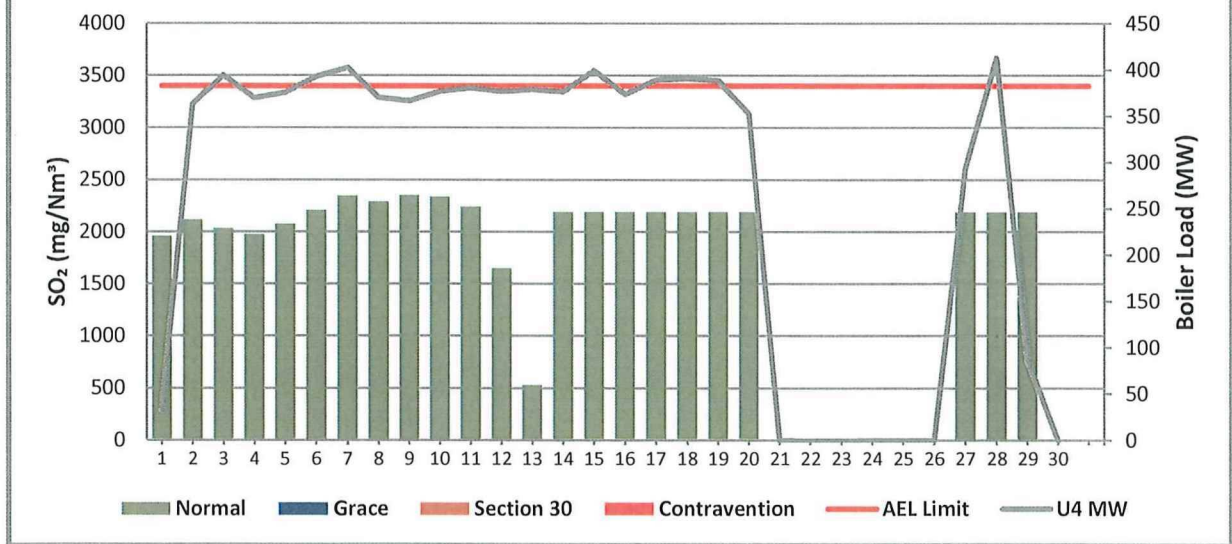




Figure 11: Tutuka Unit 5 SO<sub>2</sub> Emissions - April 2023

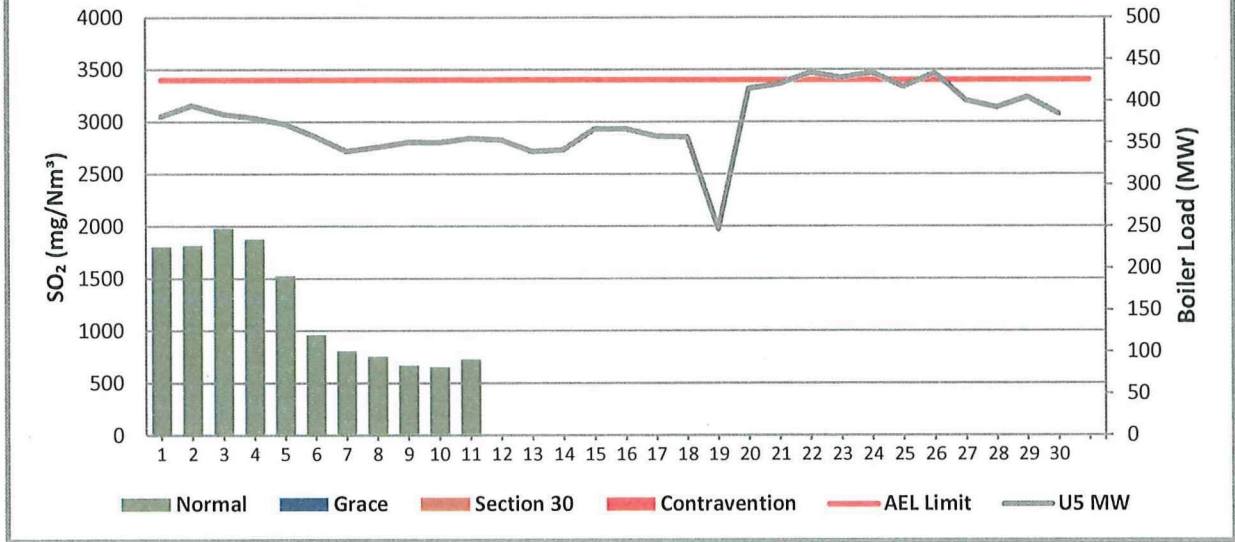
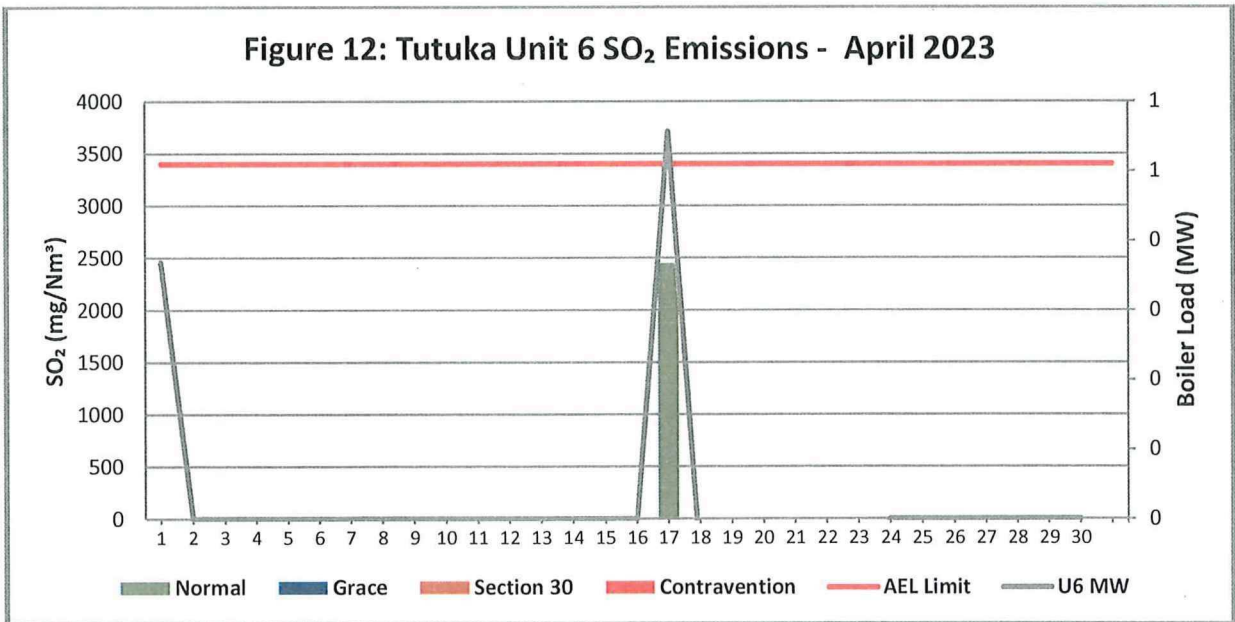
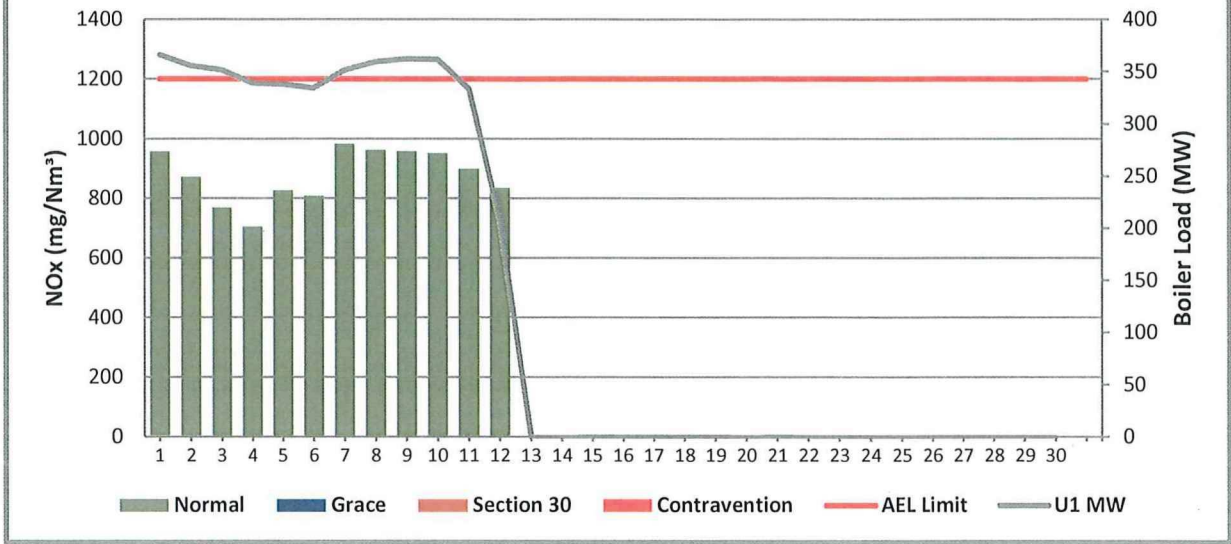


Figure 12: Tutuka Unit 6 SO<sub>2</sub> Emissions - April 2023



**Figure 13: Tutuka Unit 1 NOx Emissions - April 2023**



**Figure 14: Tutuka Unit 2 NOx Emissions - April 2023**

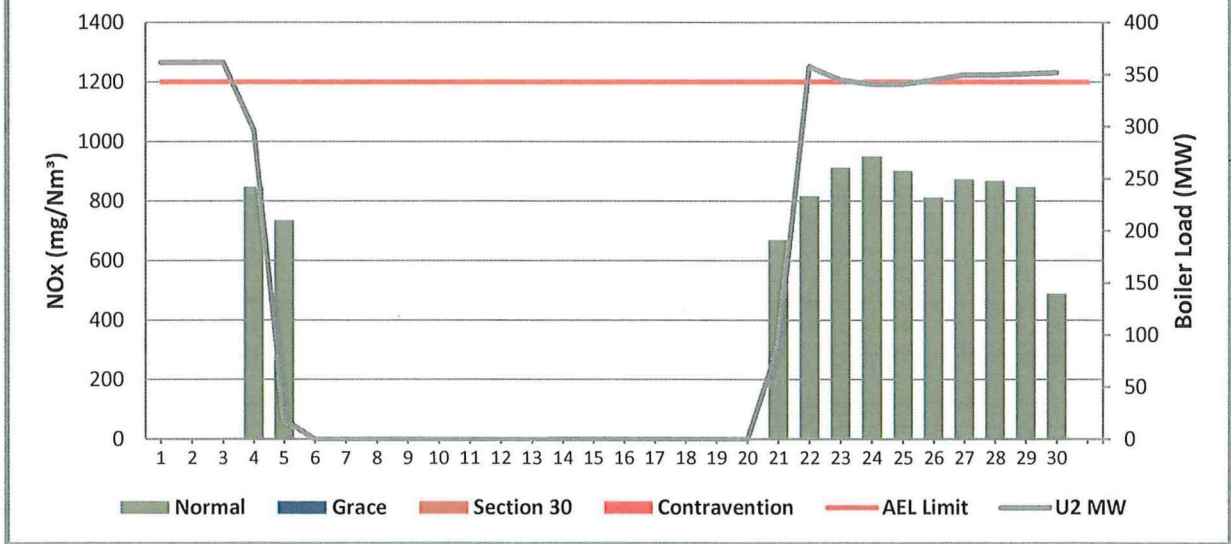


Figure 15: Tutuka Unit 3 NOx Emissions - April 2023

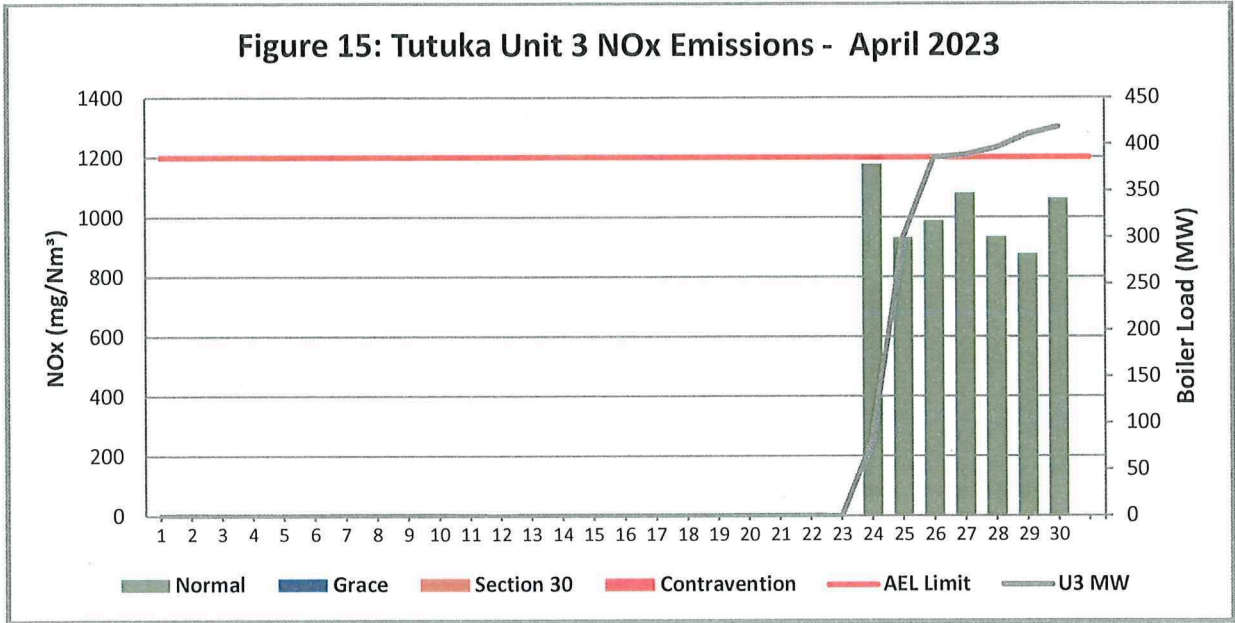


Figure 16: Tutuka Unit 4 NOx Emissions - April 2023

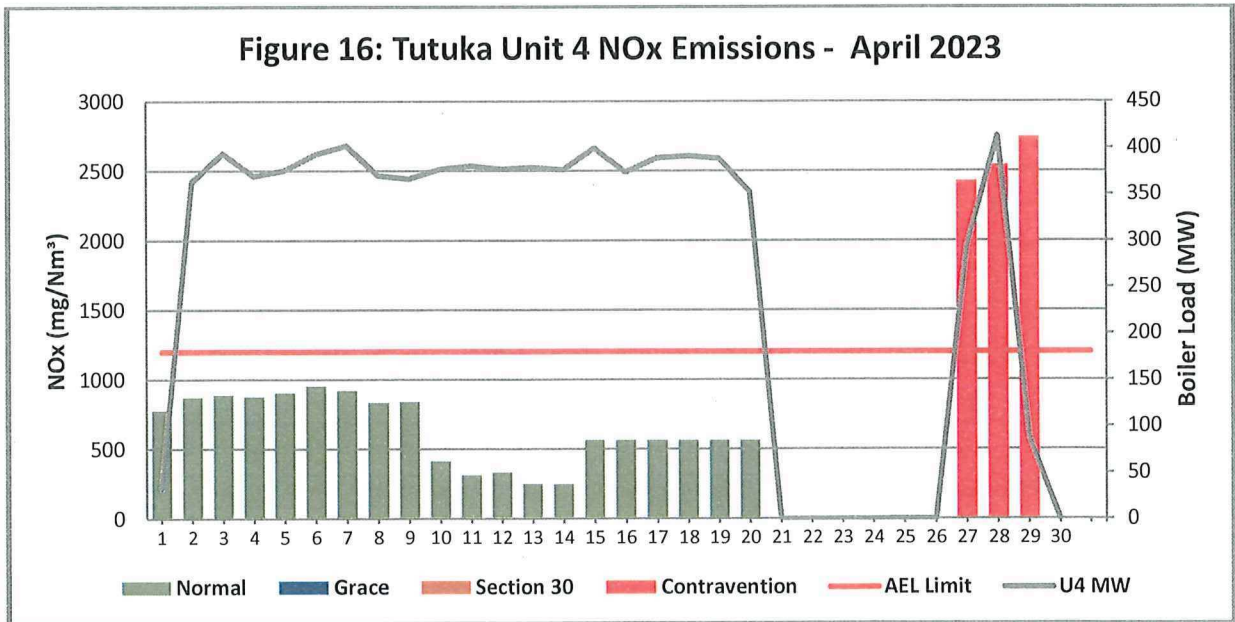


Figure 17: Tutuka Unit 5 NOx Emissions - April 2023

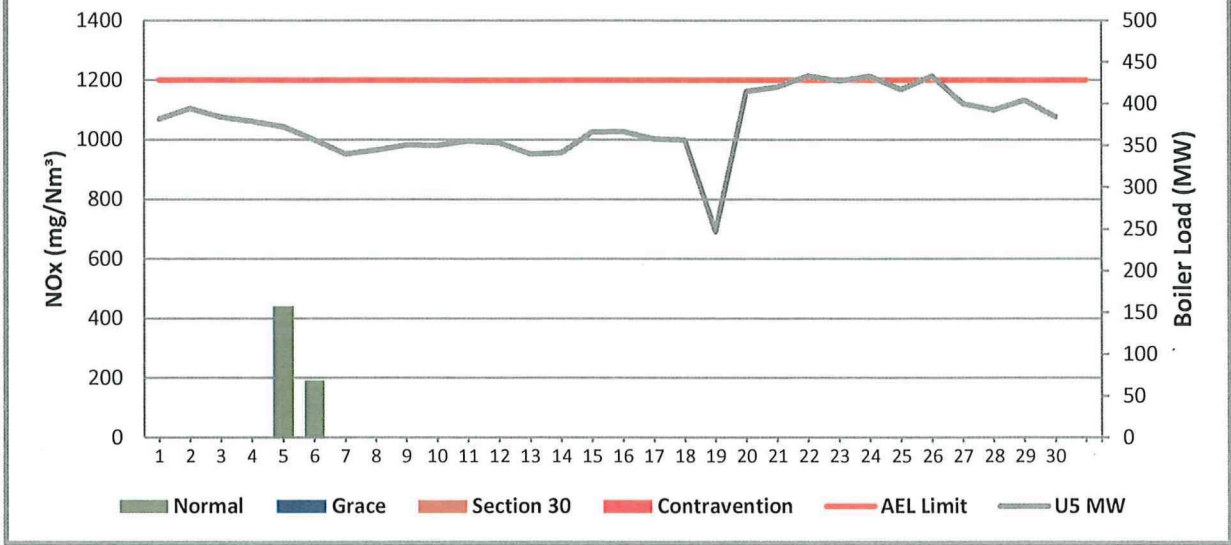
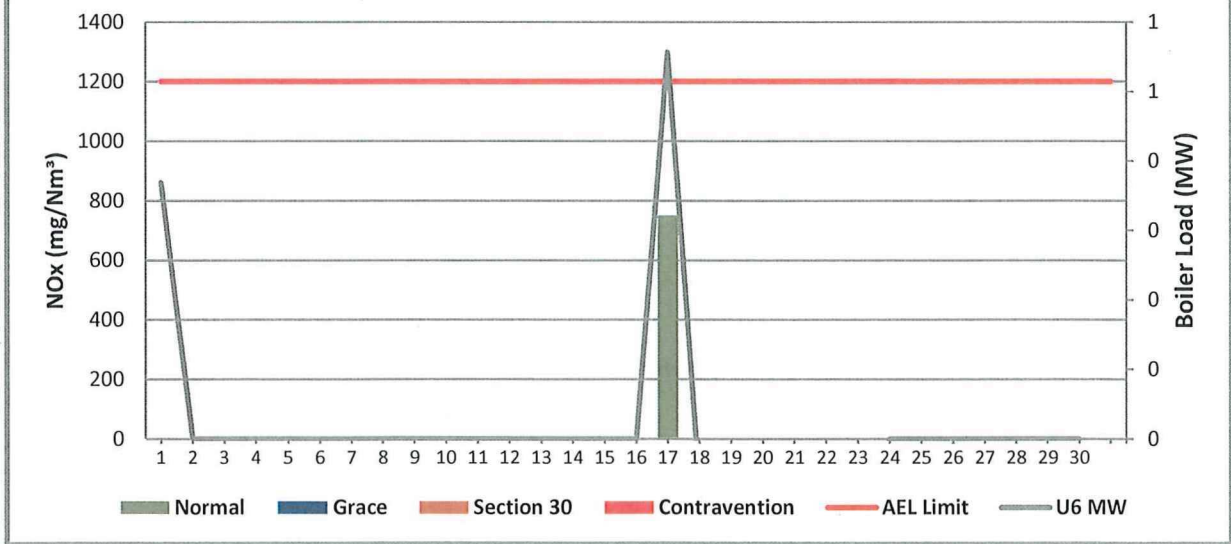


Figure 18: Tutuka Unit 6 NOx Emissions - April 2023

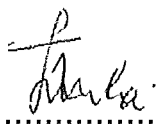

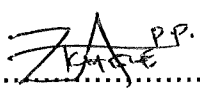


**7 COMPLAINTS REGISTER**

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
No complaints were received for the month of April 2023					

For more information or enquiries contact the Tutuka environmental team

Yours Sincerely

<p><b>Compiled by:</b> Xoli Jila</p> <p><b>SENIOR ADVISOR ENVIRONMENTAL</b></p> <p>Signature:  .....</p> <p><b>Date :</b> 22 May 2022</p>	<p><b>Supported By:</b> Mike Molepo</p> <p><b>SENIOR CHEMIST: BOILER ENGINEERING</b></p> <p>Signature:  .....</p> <p><b>Date :</b> 22/05/2023</p>
<p><b>Approved by:</b> Bruce Moyo</p> <p><b>GENERAL MANAGER: TUTUKA POWER STATION</b></p> <p>Signature:  .....</p> <p><b>Date:</b> 25/05/2023 .....</p>	