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Gert Sibande District Municipality
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Date: 21 June 2022
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Dear Mr Hlanyane

TUTUKA POWER STATION'S MONTHLY REPORT FOR THE MONTH OF MAY 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 emissions of Particulate Matters, Sulphur, and Nitrogen dioxides for the month of May 2022

The report presents monthly trends for each pollutant that is monitored from all the units, except unit 2 which has been out of service for the month of May 2022. There were PM exceedances recorded which fell outside the 48-hour grace period in units 1, 3 and 6, these were due to challenges with the dust handling plant.

1. RAW MATERIALS AND PRODUCTS

Raw Materials and Products	Raw Material Type	Units	Max. Permitted	Actual Consumption May-2022
	Coal	Tons	1 200 000	380 126
	Fuel Oil	Tons	10 000	5044.74
Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate May-2022
	Energy	GWh	2611.44	656.3
	Ash	Tons	350 000	101 190
	RE Ash	kg/MWh	not specified	1.37

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	20.800
Sulphur Content	%	0.6 TO >2.6	1.140
Ash Content	%	21 TO >33	26.620

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 ABATEMET TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency May-2022
Unit 1	Electro Static Precipitators (ESP)	99.0%
Unit 2	Electro Static Precipitators (ESP)	
Unit 3	Electro Static Precipitators (ESP)	99.1%
Unit 4	Electro Static Precipitators (ESP)	99.3%
Unit 5	Electro Static Precipitators (ESP)	99.6%
Unit 6	Electro Static Precipitators (ESP)	98.8%

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

5. MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO ₂	NO	CO ₂	O ₂
Unit 1	90.7	99.7	99.5	97.9	98.1
Unit 2					
Unit 3	85.2	99.4	99.4	99.0	99.0
Unit 4	89.7	100.0	88.9	99.7	99.7
Unit 5	100.0	100.0	100.0	81.7	98.4
Unit 6	100.0	86.3	80.8	77.6	80.2

6. EMISSION PERFORMANCE

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

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO _x (tons)	CO ₂ (tons)
Unit 1	280,3	2 461	844	249 585
Unit 2	0,0	0	0	0
Unit 3	233,5	2 639	981	271 171
Unit 4	67,5	707	231	82 567
Unit 5	5,3	25	11	15 444
Unit 6	307,7	2 196	669	204 639
SUM	894,3	8 029	2 737	823 406

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
Unit 1	16	6	0	6	6	264.7
Unit 2	0	0	0	0	0	
Unit 3	15	3	0	3	3	214.6
Unit 4	5	1	0	1	1	243.1
Unit 5	0	1	0	1	1	454.2
Unit 6	9	10	0	10	10	313.2
SUM	45	21	0	21	21	

Table 6.3: Operating days in compliance to SO_x AEL Limit - May 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO _x (mg/Nm ³)
Unit 1	22	0	0	0	0	2 386.1
Unit 2	0	0	0	0	0	
Unit 3	18	0	0	0	0	2 430.0
Unit 4	6	0	0	0	0	2 526.7
Unit 5	1	0	0	0	0	2 128.8
Unit 6	18	0	0	1	1	2 385.1
SUM	65	0	0	1	1	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO _x (mg/Nm ³)
Unit 1	22	0	0	0	0	804.8
Unit 2	0	0	0	0	0	
Unit 3	18	0	0	0	0	901.6
Unit 4	6	0	0	0	0	865.0
Unit 5	1	0	0	0	0	978.2
Unit 6	19	0	0	0	0	698.0
SUM	66	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

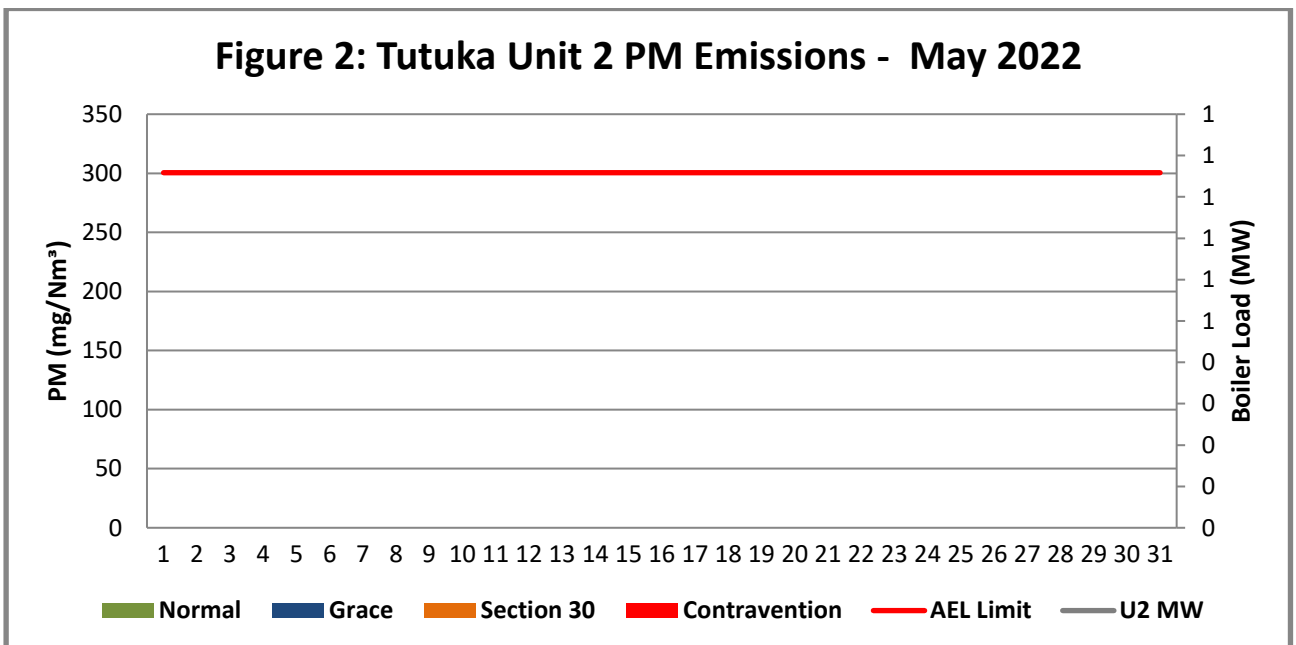
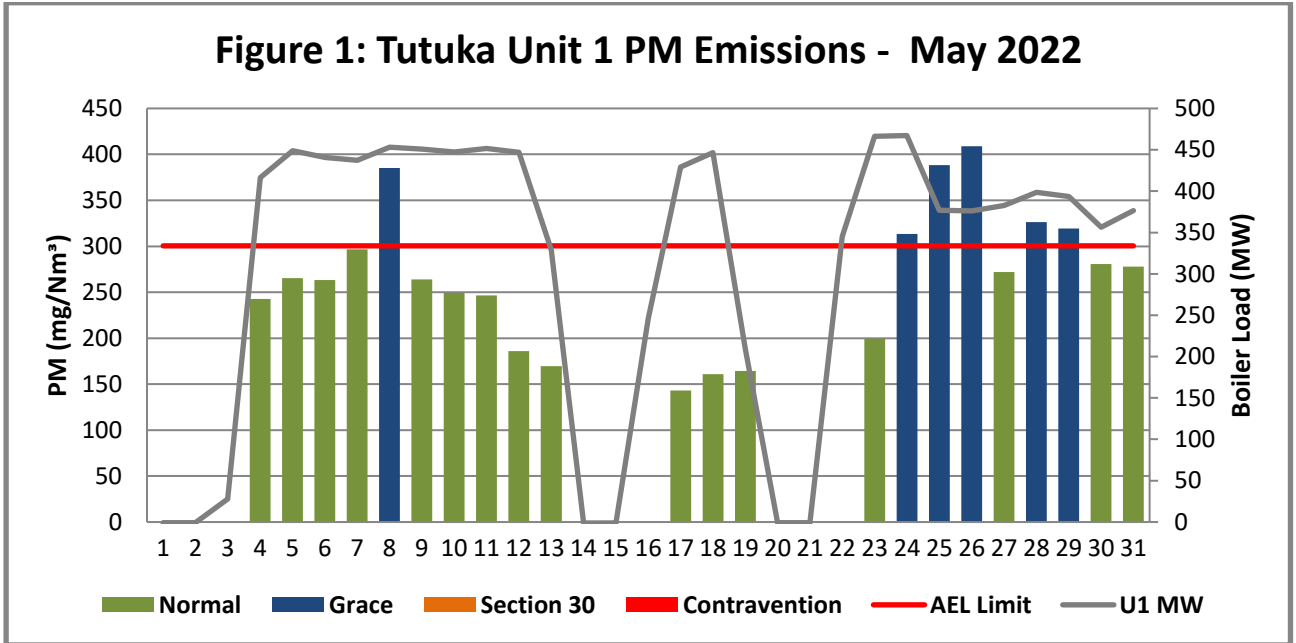


Figure 3: Tutuka Unit 3 PM Emissions - May 2022

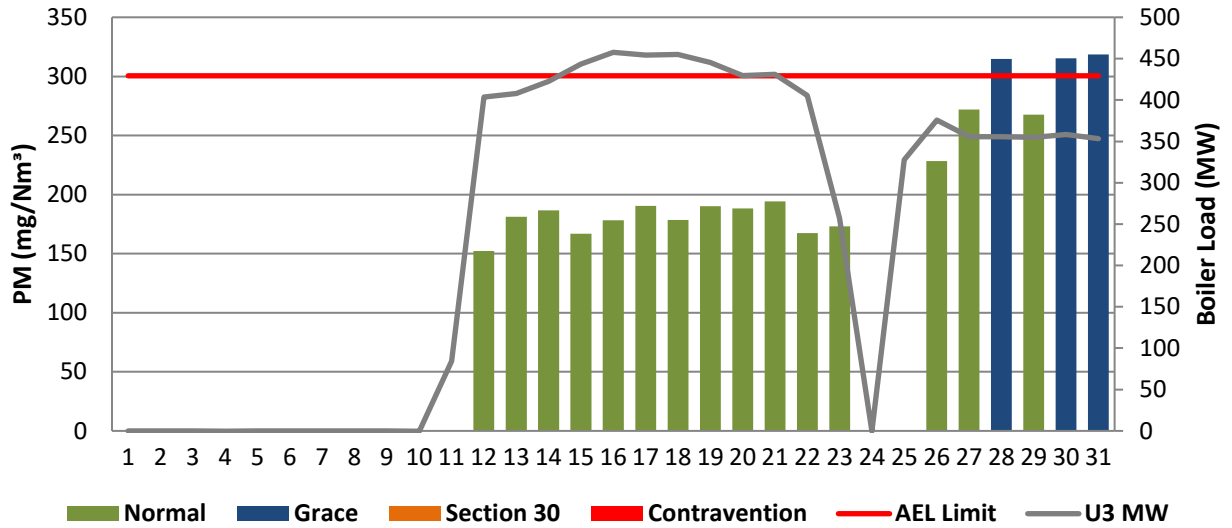


Figure 4: Tutuka Unit 4 PM Emissions - May 2022

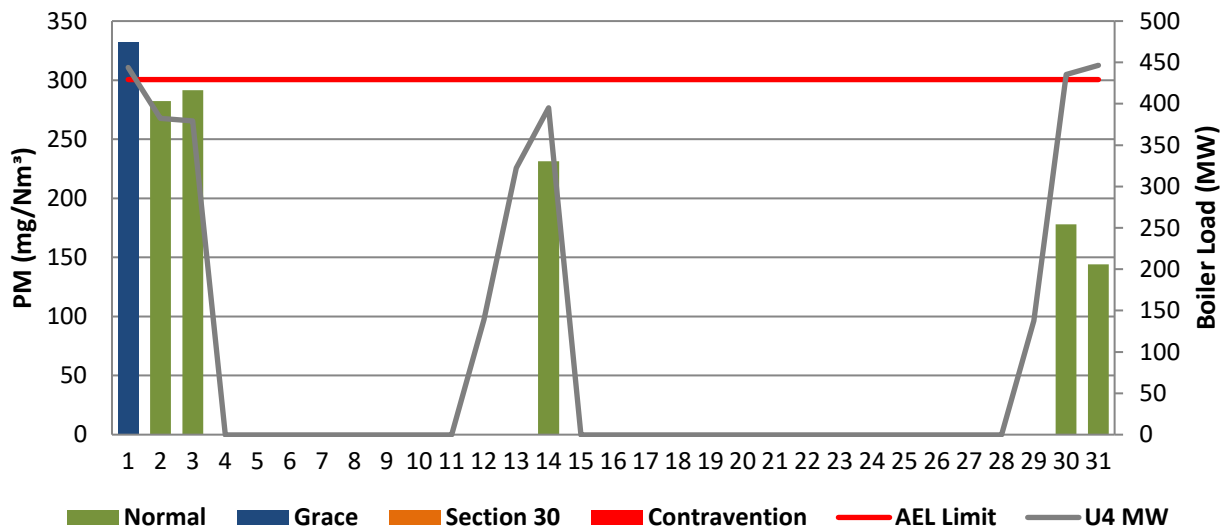


Figure 5: Tutuka Unit 5 PM Emissions - May 2022

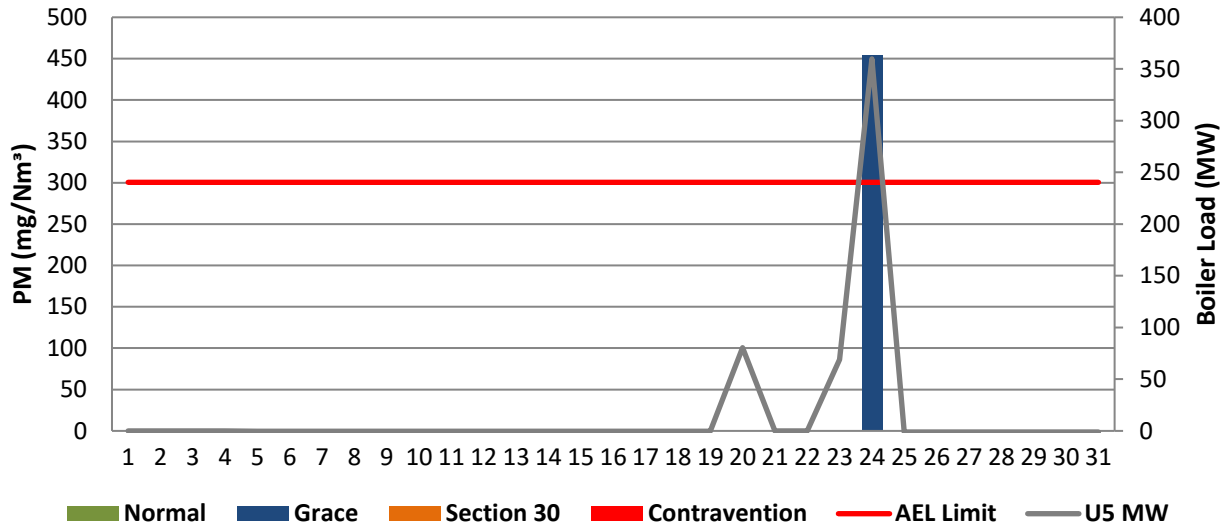


Figure 6: Tutuka Unit 6 PM Emissions - May 2022

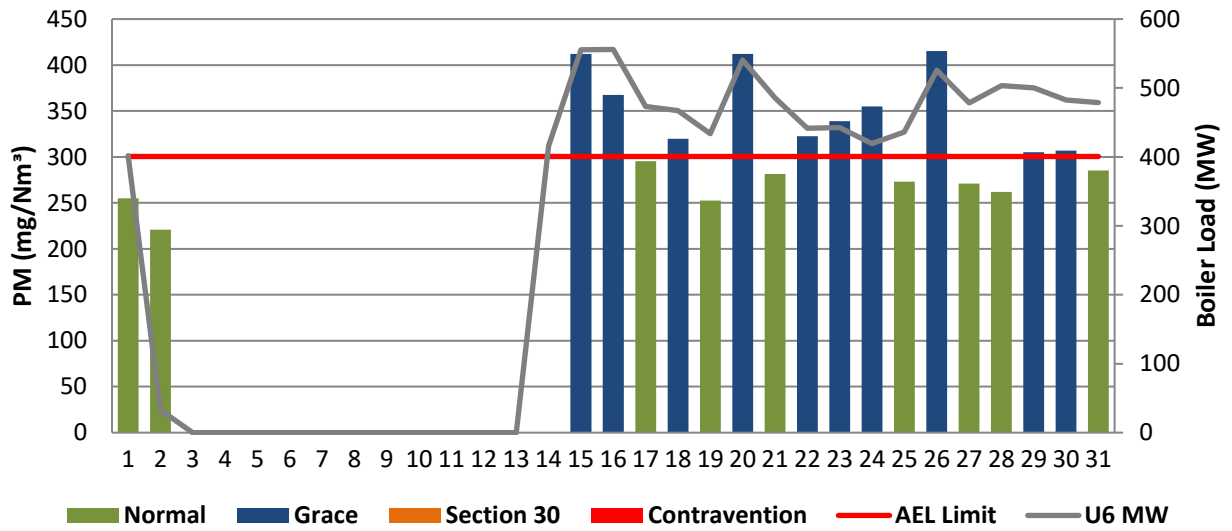


Figure 7: Tutuka Unit 1 SOx Emissions - May 2022

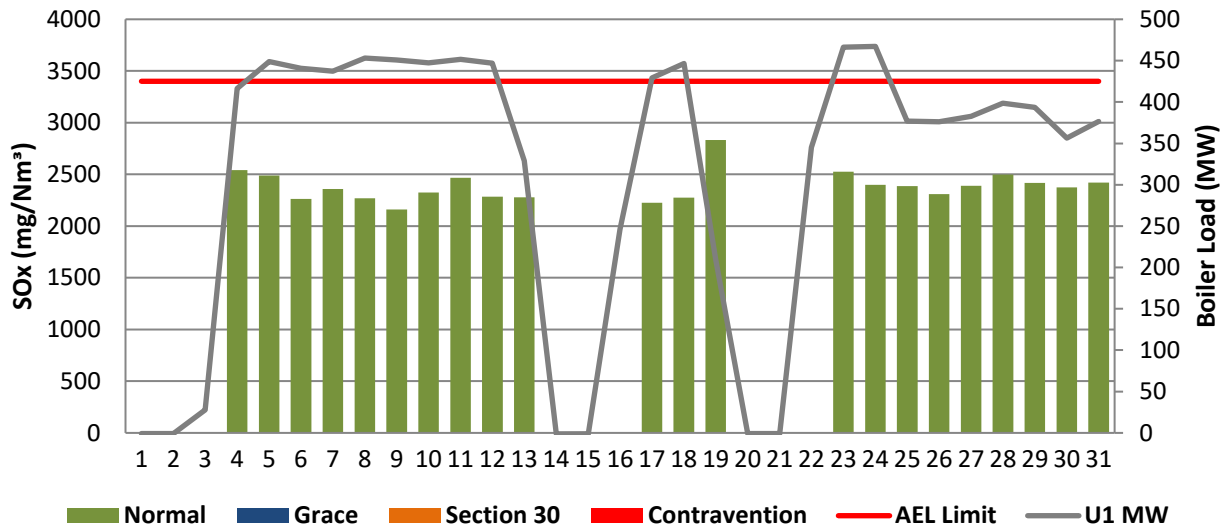


Figure 8: Tutuka Unit 2 SOx Emissions - May 2022

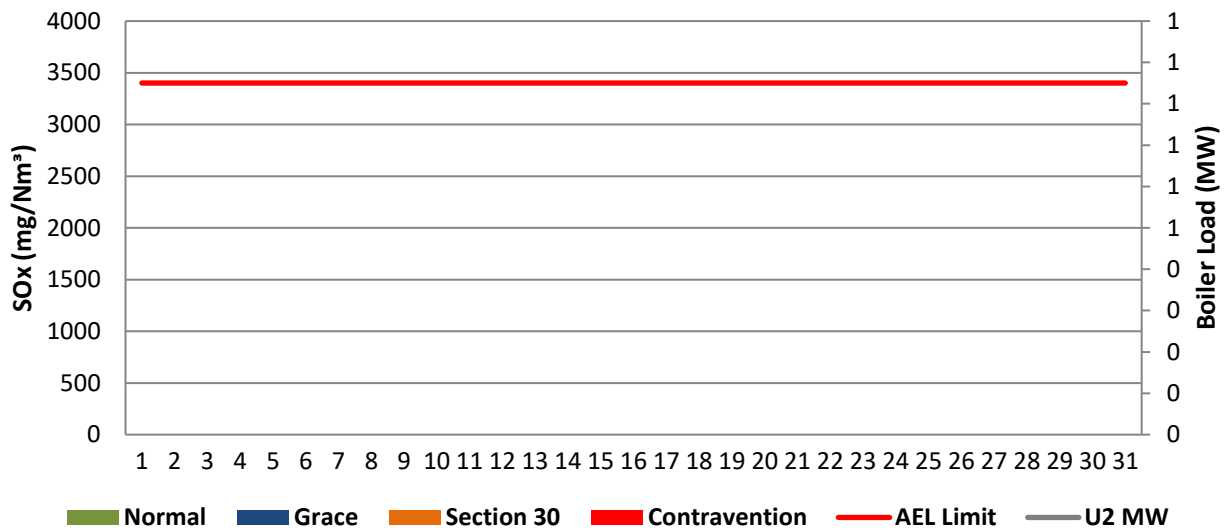


Figure 9: Tutuka Unit 3 SOx Emissions - May 2022

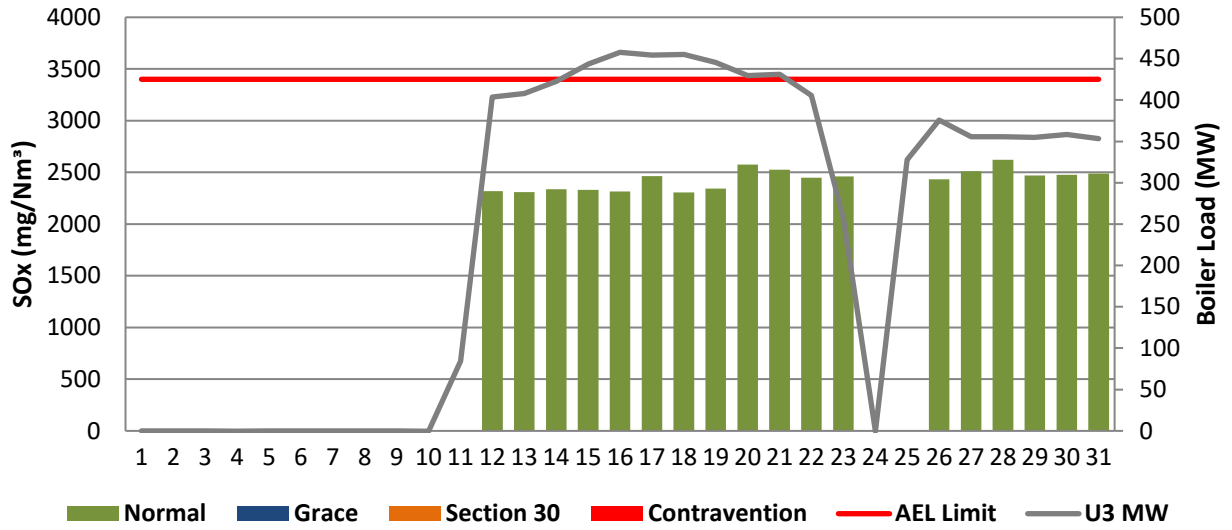


Figure 10: Tutuka Unit 4 SOx Emissions - May 2022

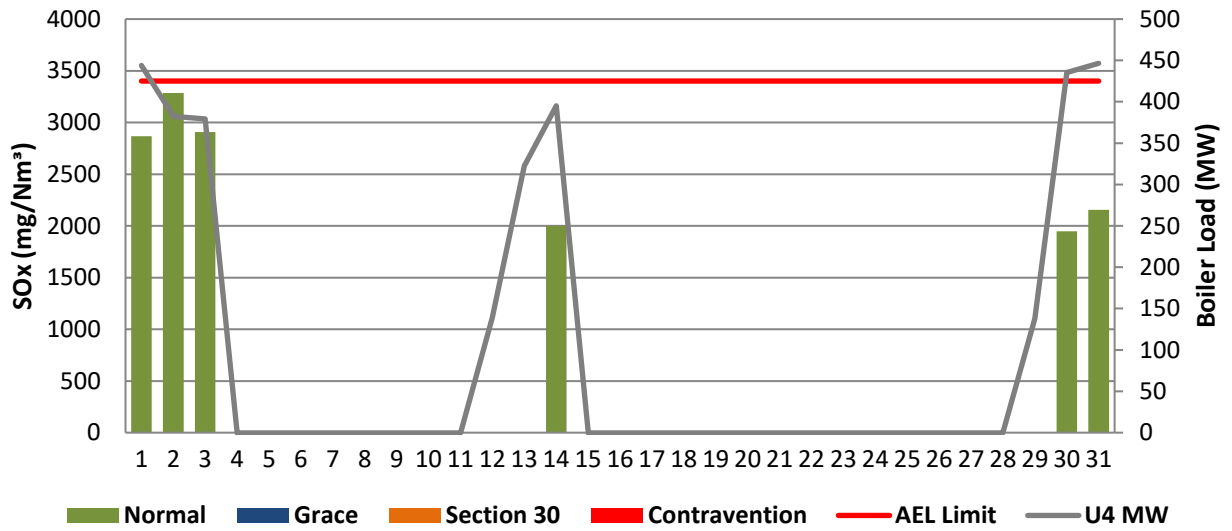


Figure 11: Tutuka Unit 5 SOx Emissions - May 2022

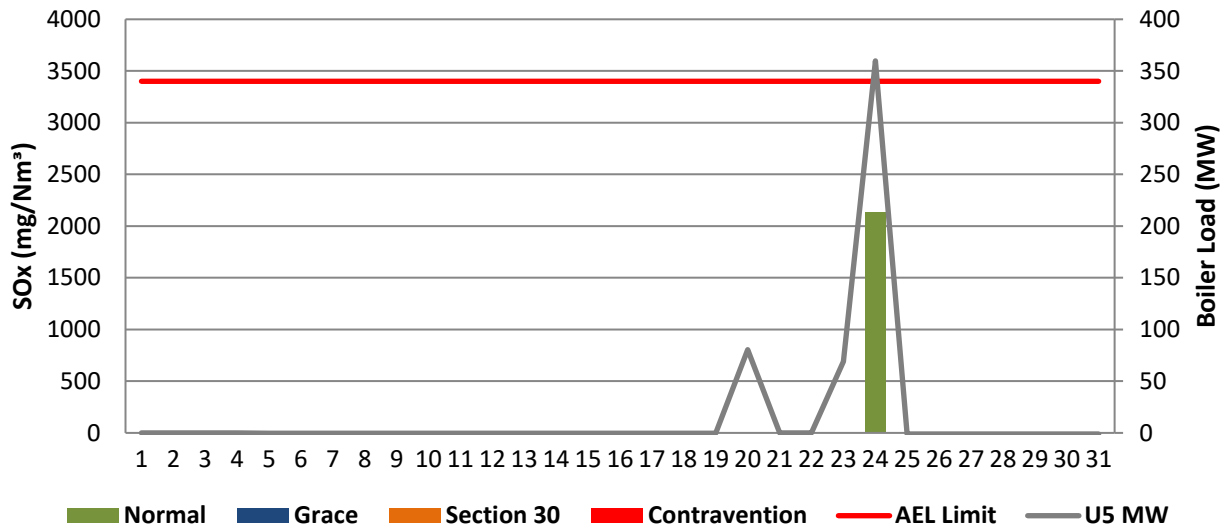


Figure 12: Tutuka Unit 6 SOx Emissions - May 2022

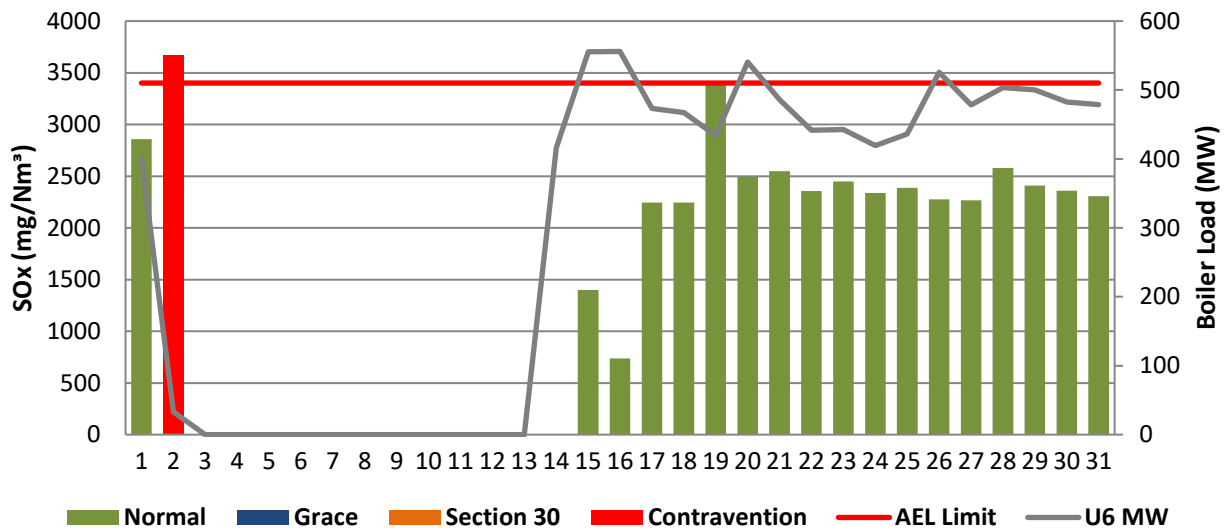


Figure 13: Tutuka Unit 1 NOx Emissions - May 2022

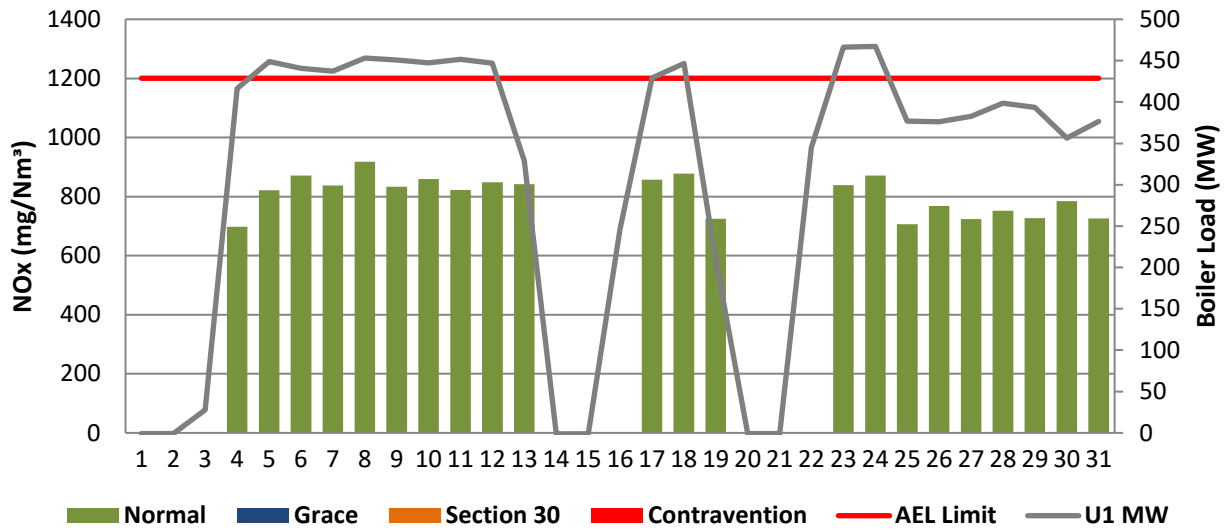


Figure 14: Tutuka Unit 2 NOx Emissions - May 2022

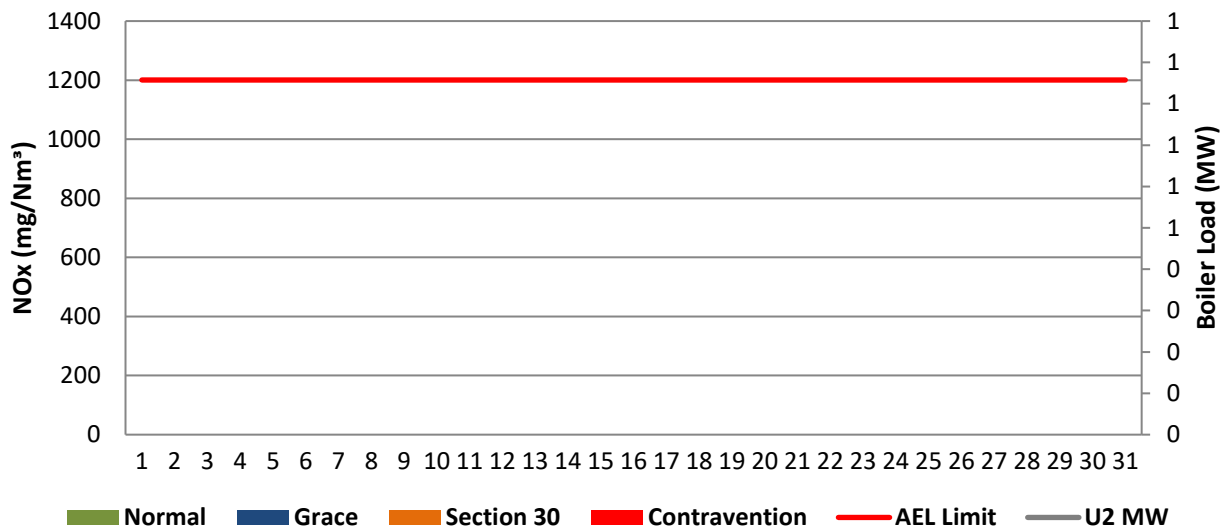


Figure 15: Tutuka Unit 3 NOx Emissions - May 2022

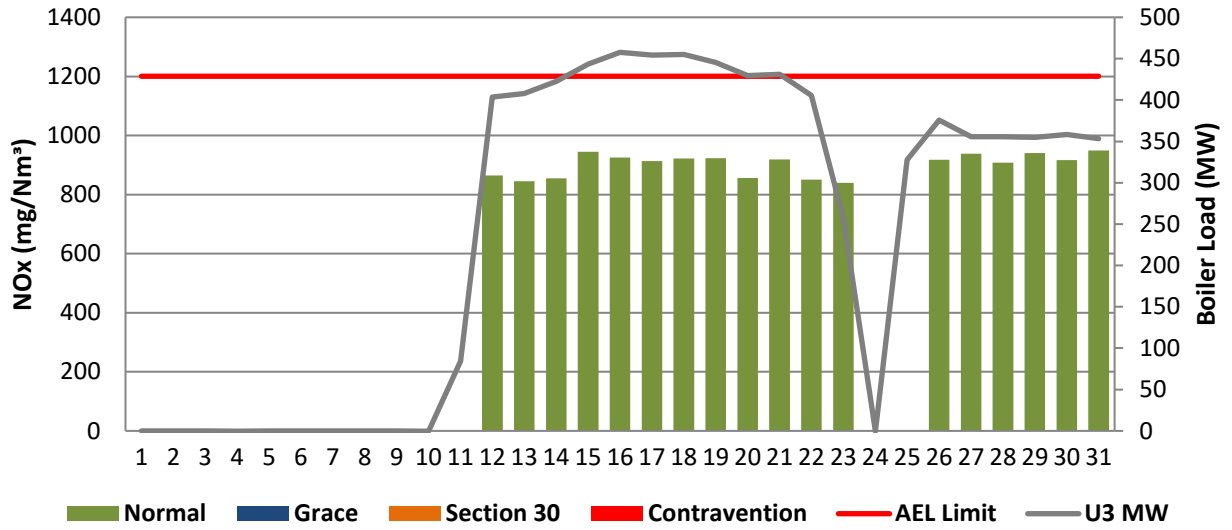


Figure 16: Tutuka Unit 4 NOx Emissions - May 2022

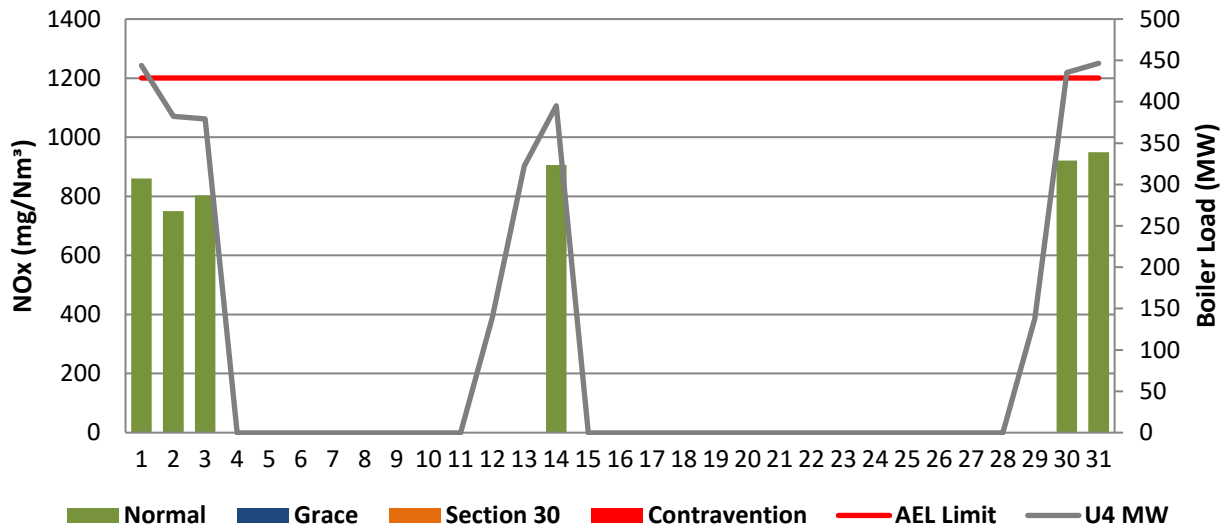


Figure 17: Tutuka Unit 5 NOx Emissions - May 2022

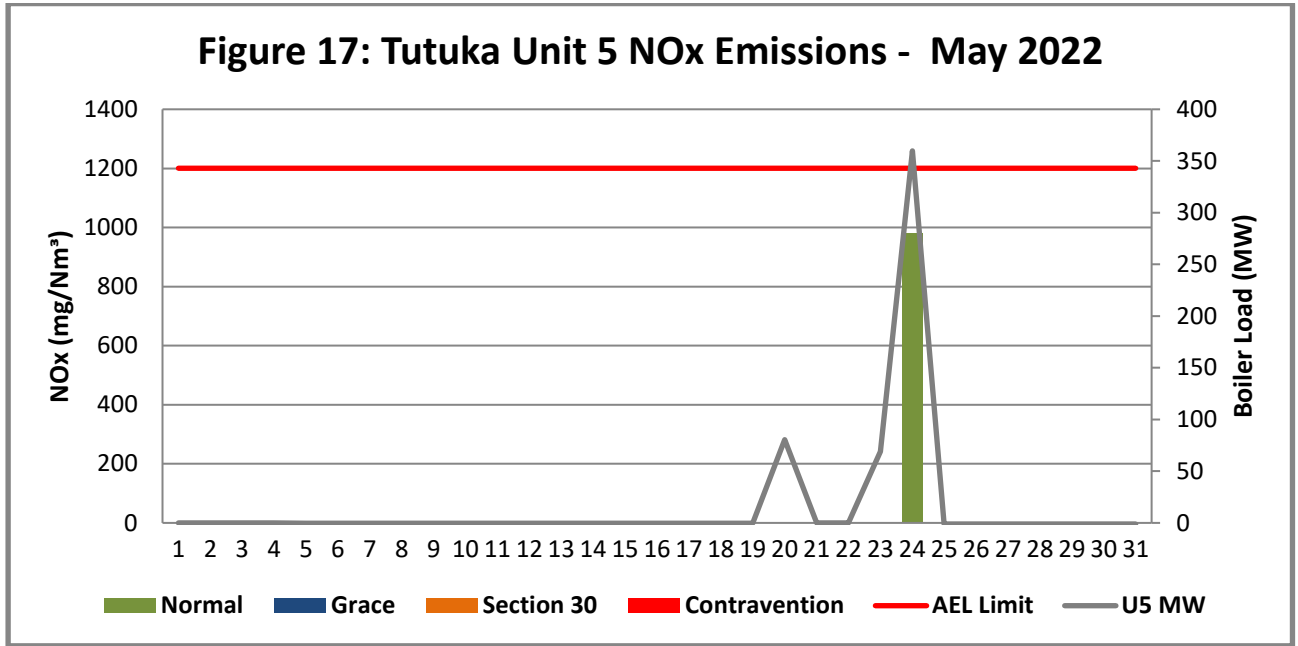
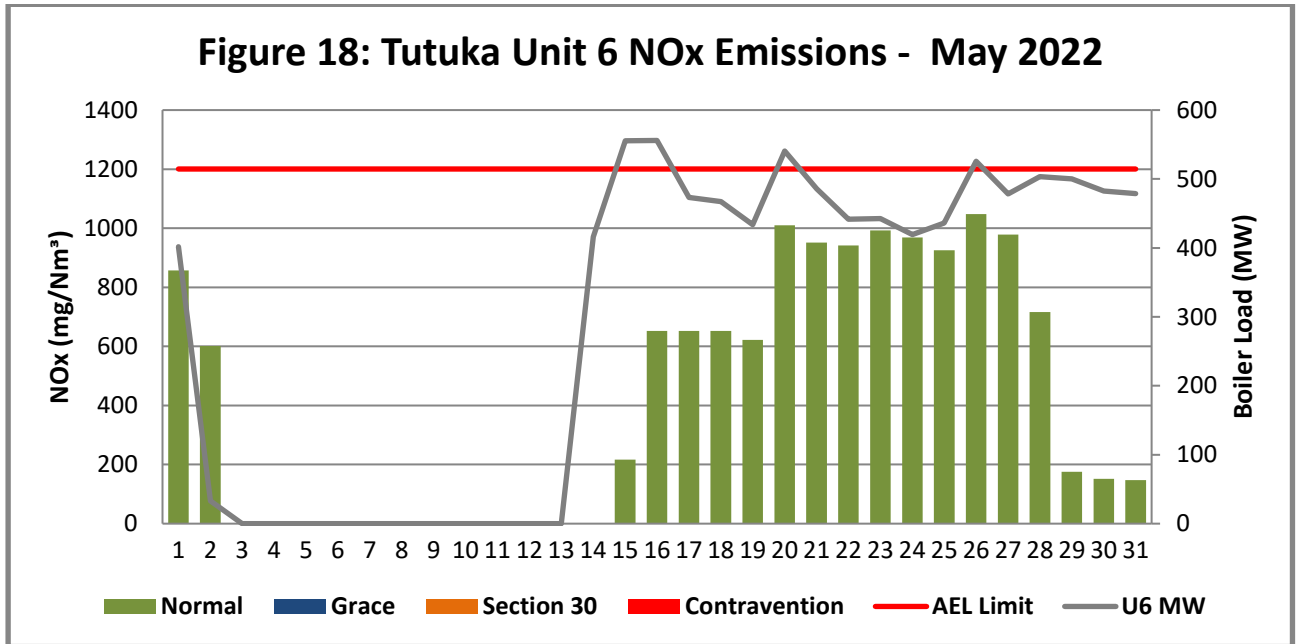


Figure 18: Tutuka Unit 6 NOx Emissions - May 2022

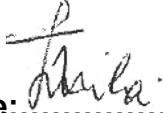




7. COMPLAINTS REGISTER

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 May 2022					

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 : 28 June 2022</p>	<p>Supported By: Mike Molepo</p> <p>SENIOR CHEMIST: BOILER ENGINEERING</p> <p>Signature: </p> <p>Date : 2022/06/28</p>
<p>Approved by: Sello Mametja GENERAL MANAGER: TUTUKA POWER STATION</p> <p>Signature: </p> <p>Date: 2022/06/29</p>	