



Generation

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Attention:

Mr V Mahlangu

AND

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DUVHA POWER STATION

Atmospheric Emission License 17/4/AEL/MP312/11/07

GENERAL MANAGER

2022/01/06

DATE

DUVHA POWER STATION MONTHLY EMISSIONS REPORT
 Atmospheric Emission License 17/4/AEL/MP312/11/07



1 RAW MATERIALS AND PRODUCTS

Raw Materials and Products	Raw Material Type	Units	Maximum Permitted Consumption Rate	Consumption Rate Nov-2021
	Coal	Tons	1 400 000	487 662.25
	Fuel Oil	Tons	5 000	2648.81
Production Rates	Product / By-Product Name	Units	Maximum Production Capacity Permitted	Production Rate Nov-2021
	Energy	GWh	3600	814.62
	Ash	Tons	not specified	128937.90

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 TO >1.2	0.97
Ash Content	%	27 TO 30	26.44

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SOx	NOx
Unit 1	100	3500	1100
Unit 2	100	3500	1100
Unit 3	100	3500	1100
Unit 4	100	3500	1100
Unit 5	100	3500	1100
Unit 6	100	3500	1100

Associated Unit/Stack	Technology Type	Minimum Control Efficiency	Efficiency NOV-2021	Minimum Utilization	Utilization NOV -2021
Unit 1	<i>Fabric Filter Plant (FFP)</i>	99%	99.91%	100%	100%
Unit 2	<i>Fabric Filter Plant (FFP)</i>	99%	99.63%	100%	100%
Unit 4	<i>Electro Static Precipitator (ESP)</i>	99.6%	Unit Off-line	100%	Unit Off-line
Unit 5	<i>Electro Static Precipitator (ESP)</i>	99.6%	99.81%	100%	100%
Unit 6	<i>Electro Static Precipitator (ESP)</i>	99.6%	99.34%	100%	100%
Unit 4	<i>Chemithon (SO3)</i>	99.6%	Unit Off-line	96%	Unit Off-line
Unit 5	<i>Chemithon (SO3)</i>	99.6%	100%	96%	96%
Unit 6	<i>Chemithon (SO3)</i>	99.6%	100%	96%	96%

5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO ₂	NO
Unit 1	87.50	97.99	76.08
Unit 2	99.72	98.06	98.06
Unit 5	99.64	96.70	97.22
Unit 6	91.13	100.00	96.21

6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of November 2021

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO _x (tons)
Unit 1	29.72	3 255.01	1 276.38
Unit 2	136.09	2 783.24	1 341.37
Unit 5	64.69	2 153.83	1 119.71
Unit 6	86.90	1 332.32	536.26
SUM	317.40	9 524.40	4 273.71

Table 6.2: Operating days in compliance to PM AEL Limit - November 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
Unit 1	26	0	0	0	0	17.59
Unit 2	27	3	0	0	3	72.84
Unit 5	21	2	0	0	2	46.58
Unit 6	8	2	0	0	2	173.58
SUM	82	7	0	0	7	

Table 6.3: Operating days in compliance to SO_x AEL Limit - November 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO _x (mg/Nm ³)
Unit 1	27	0	0	0	0	1 873.00
Unit 2	30	0	0	0	0	1 485.98
Unit 5	24	0	0	0	0	1 423.78
Unit 6	11	0	0	0	0	2 320.97
SUM	92	0	0	0	0	

Table 6.4: Operating days in compliance to NOx AEL Limit - November 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm ³)
Unit 1	27	0	0	0	0	733.52
Unit 2	30	0	0	0	0	714.89
Unit 5	24	0	0	0	0	731.87
Unit 6	11	0	0	0	0	919.87
SUM	92	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

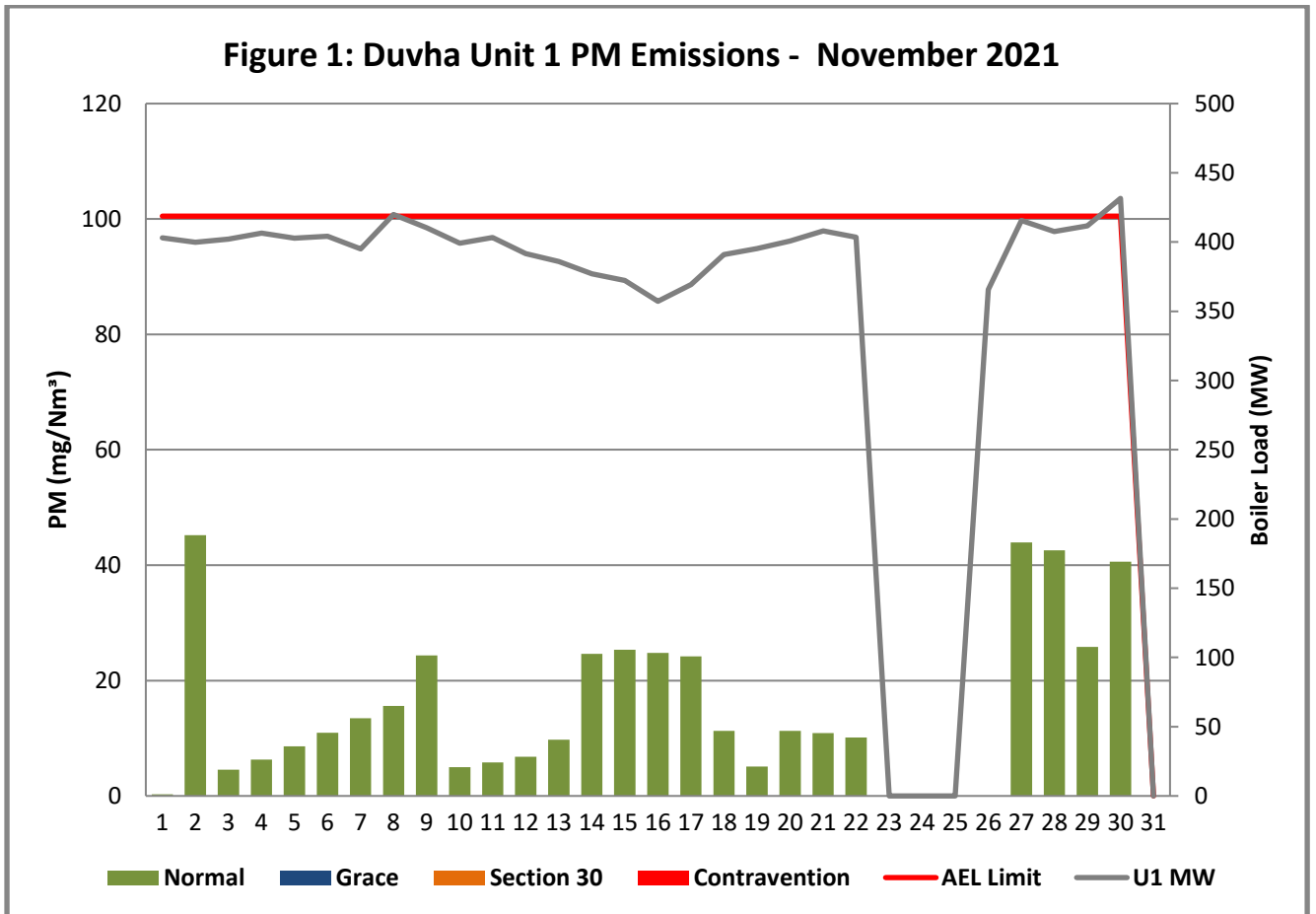


Figure 2: Duvha Unit 2 PM Emissions - November 2021

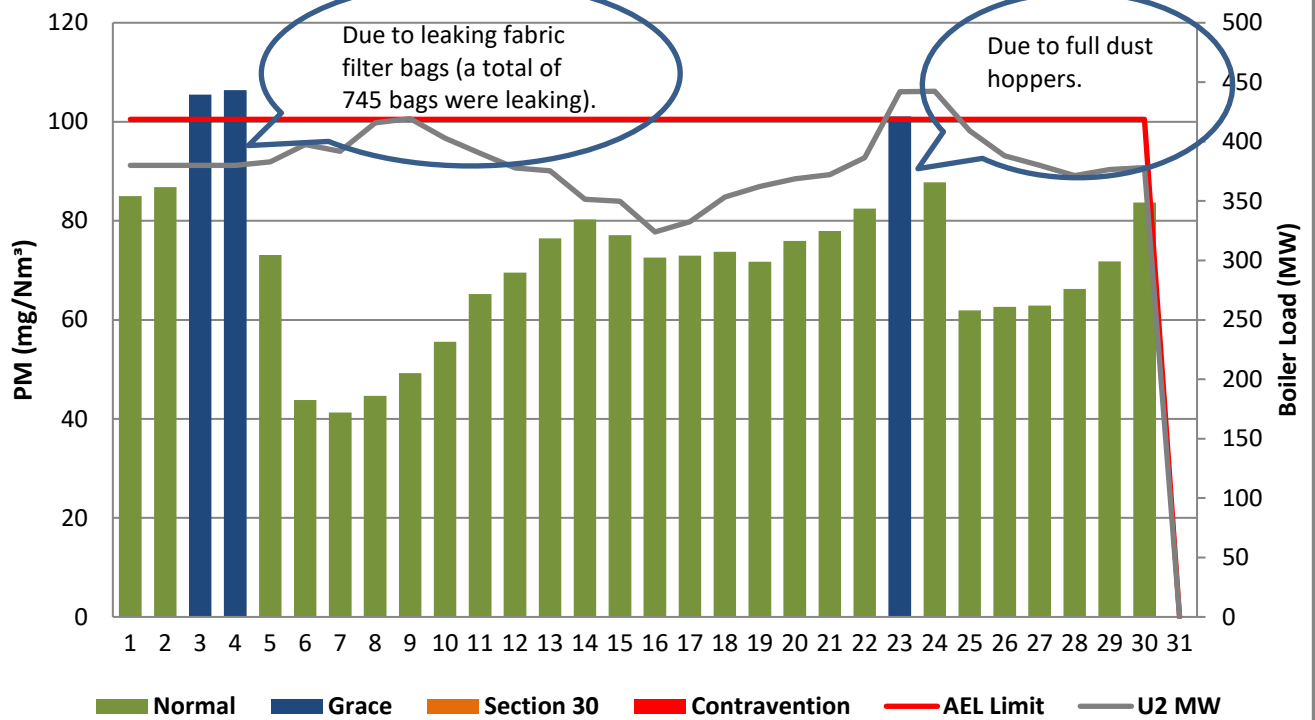


Figure 3: Duvha Unit 5 PM Emissions - November 2021

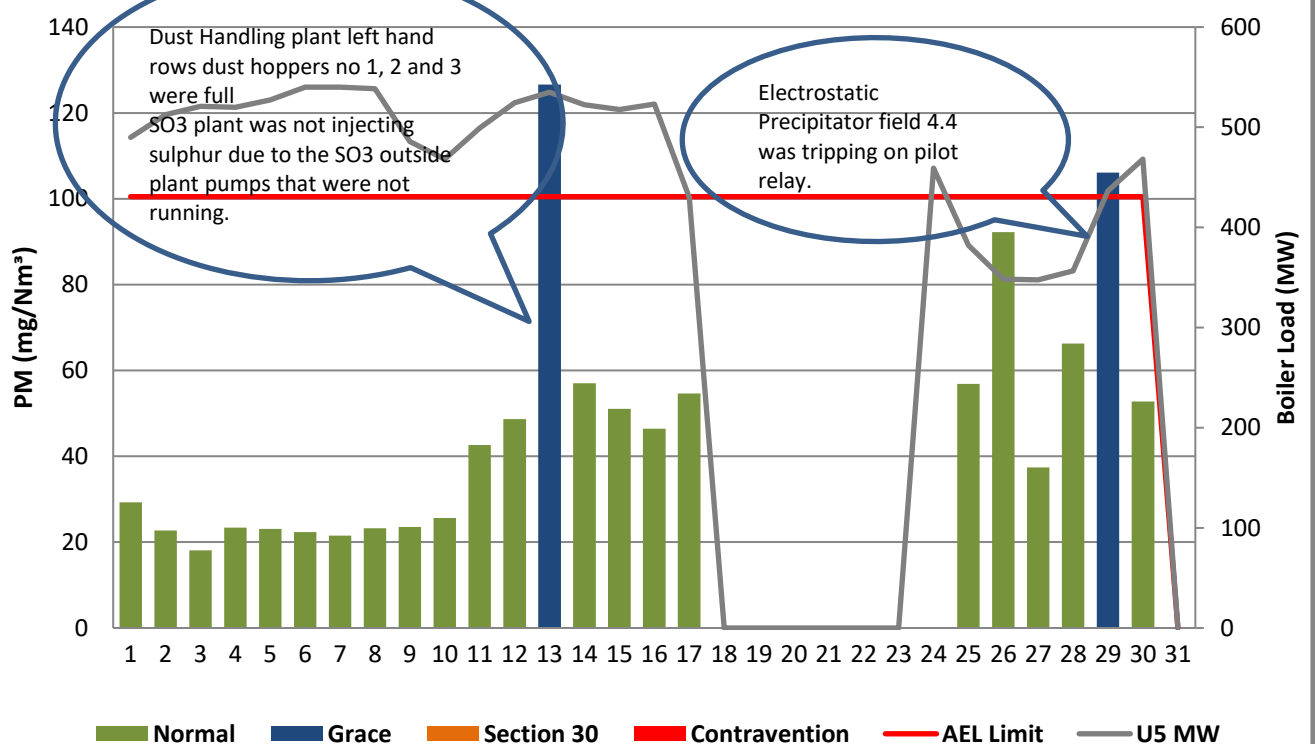


Figure 4: Duvha Unit 6 PM Emissions - November 2021

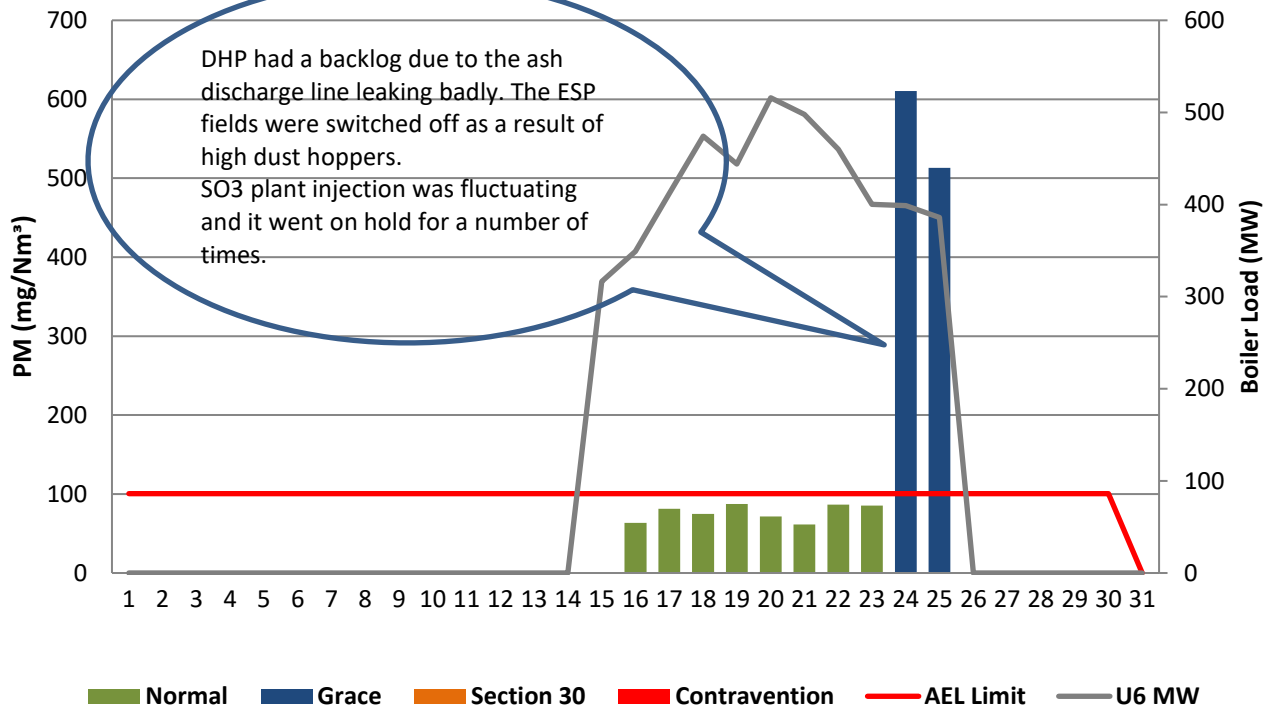


Figure 5: Duvha Unit 1 SOx Emissions - November 2021

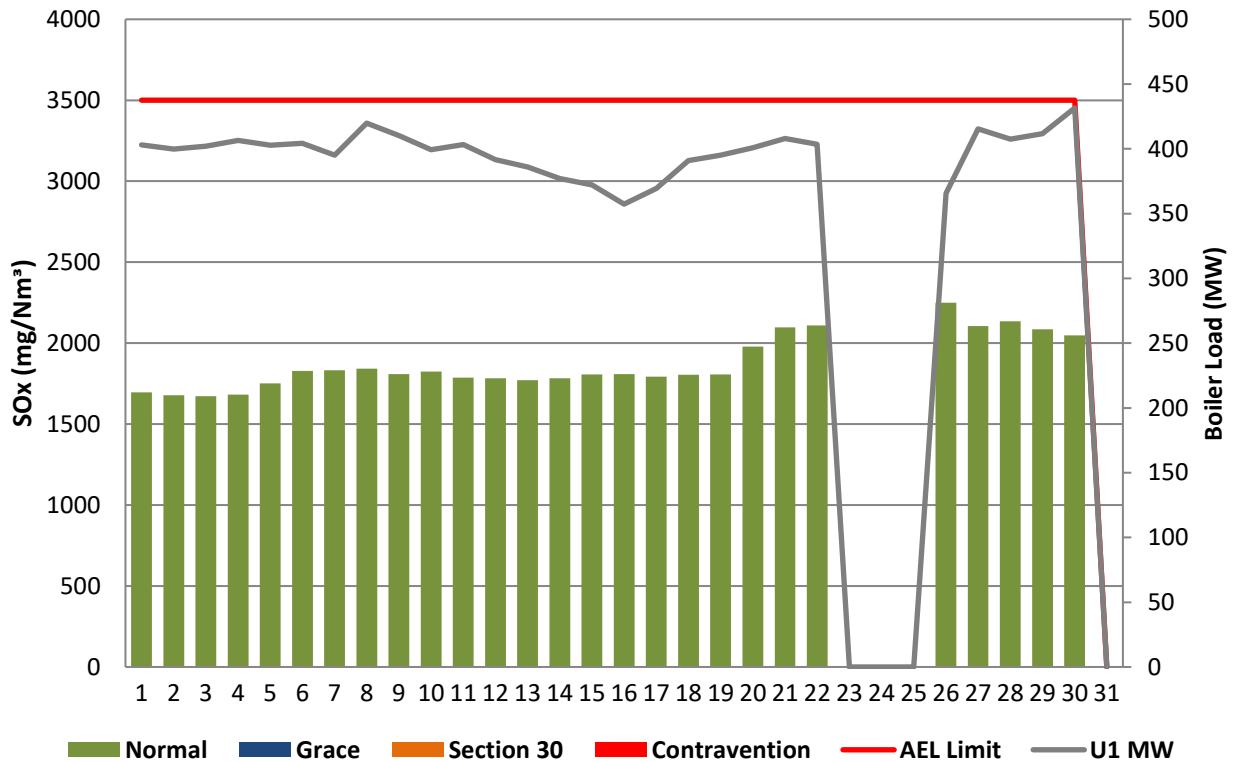


Figure 6: Duvha Unit 2 SOx Emissions - November 2021

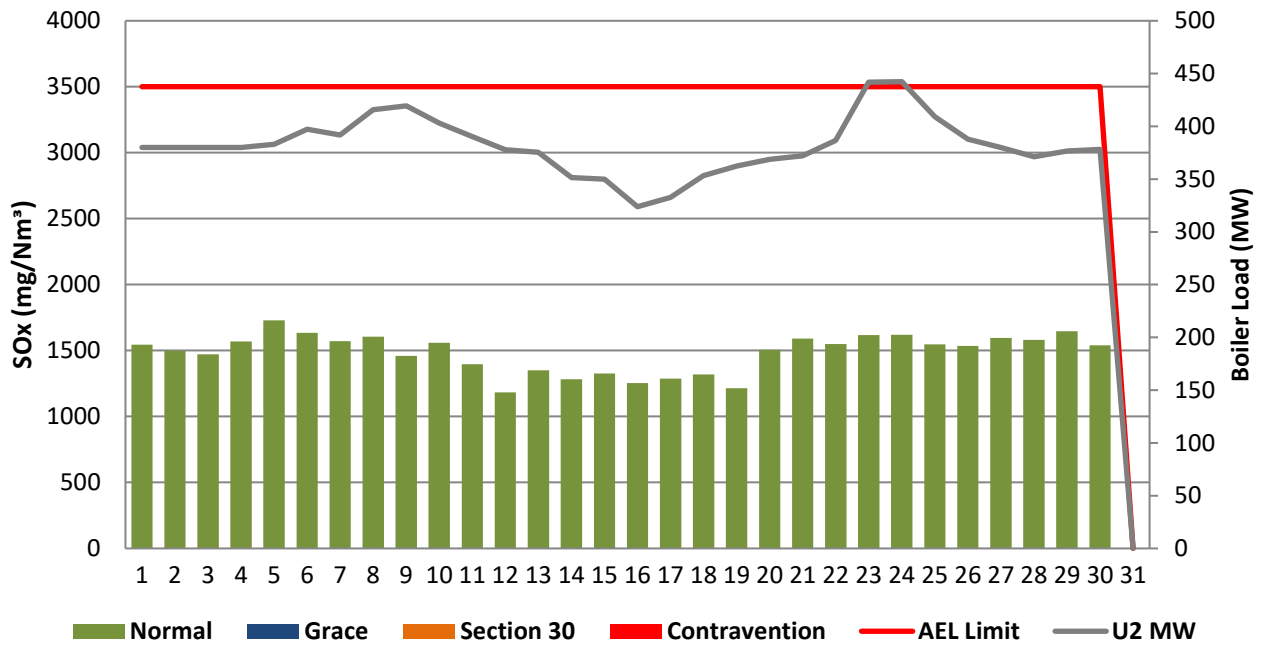


Figure 7: Duvha Unit 5 SOx Emissions - November 2021

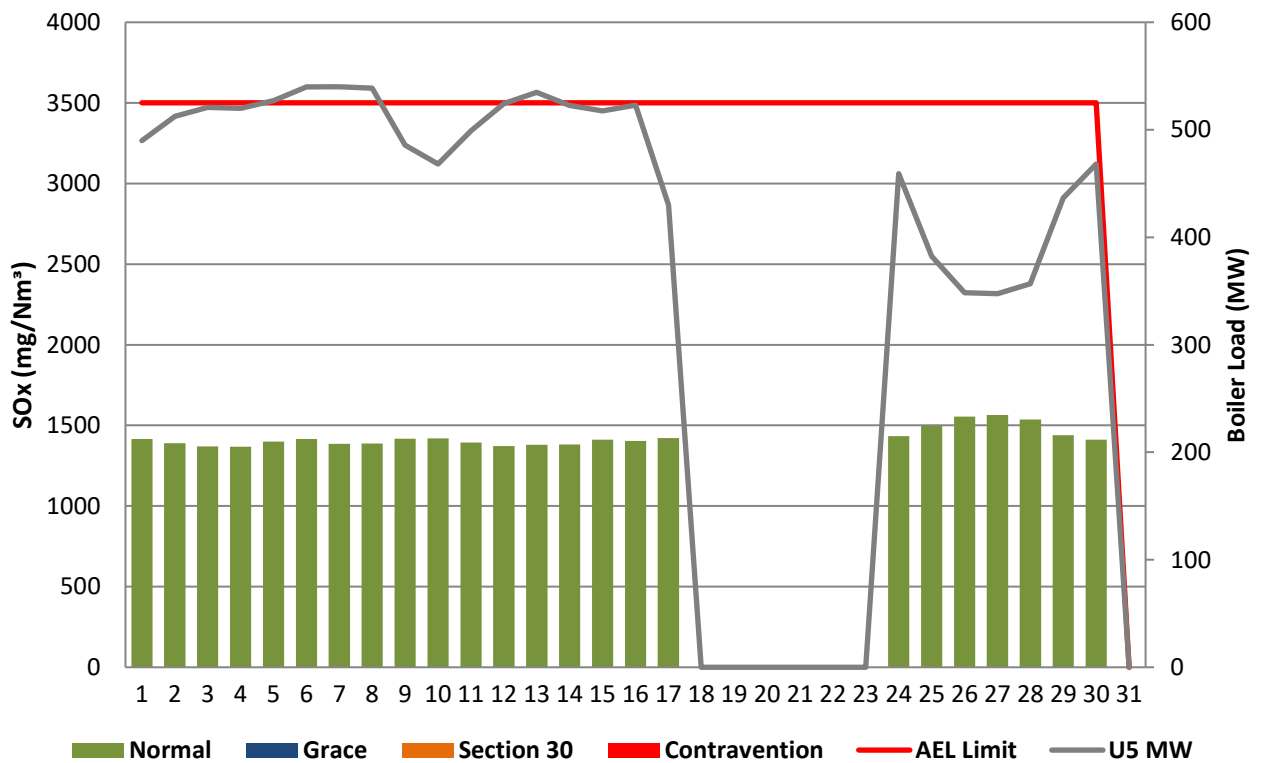


Figure 8: Duvha Unit 6 SOx Emissions - November 2021

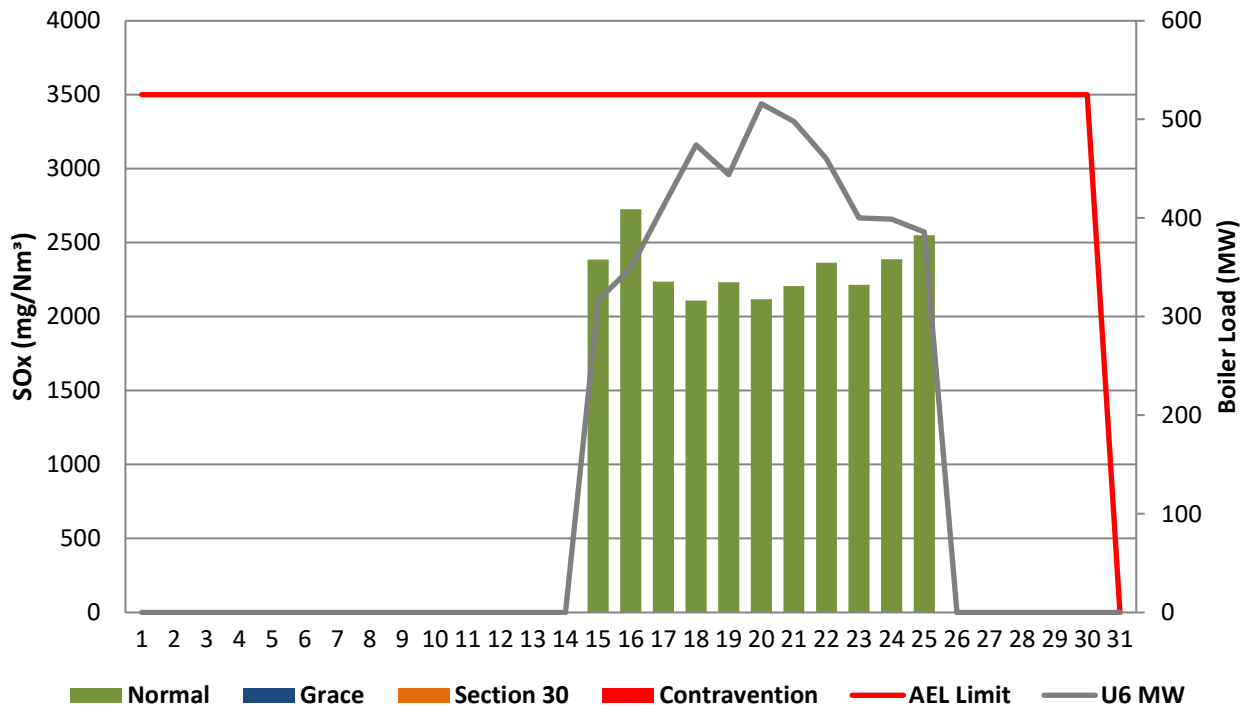


Figure 9: Duvha Unit 1 NOx Emissions - November 2021

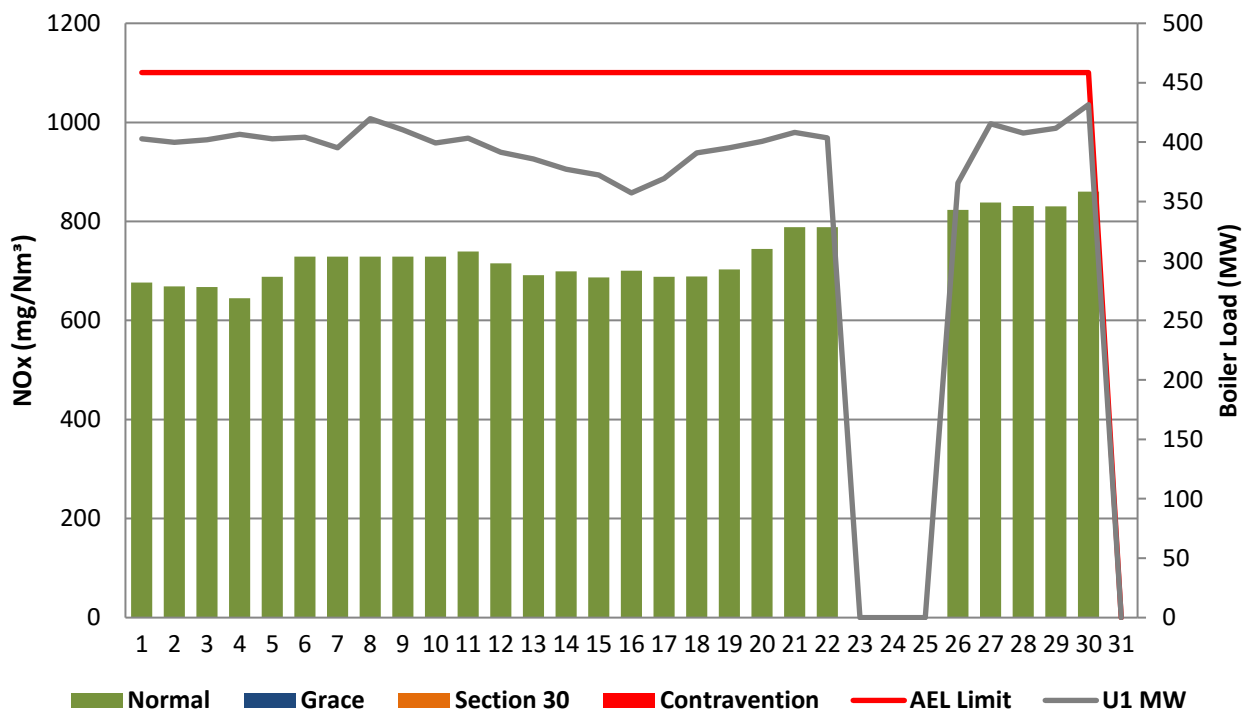


Figure 10: Duvha Unit 2 NOx Emissions - November 2021

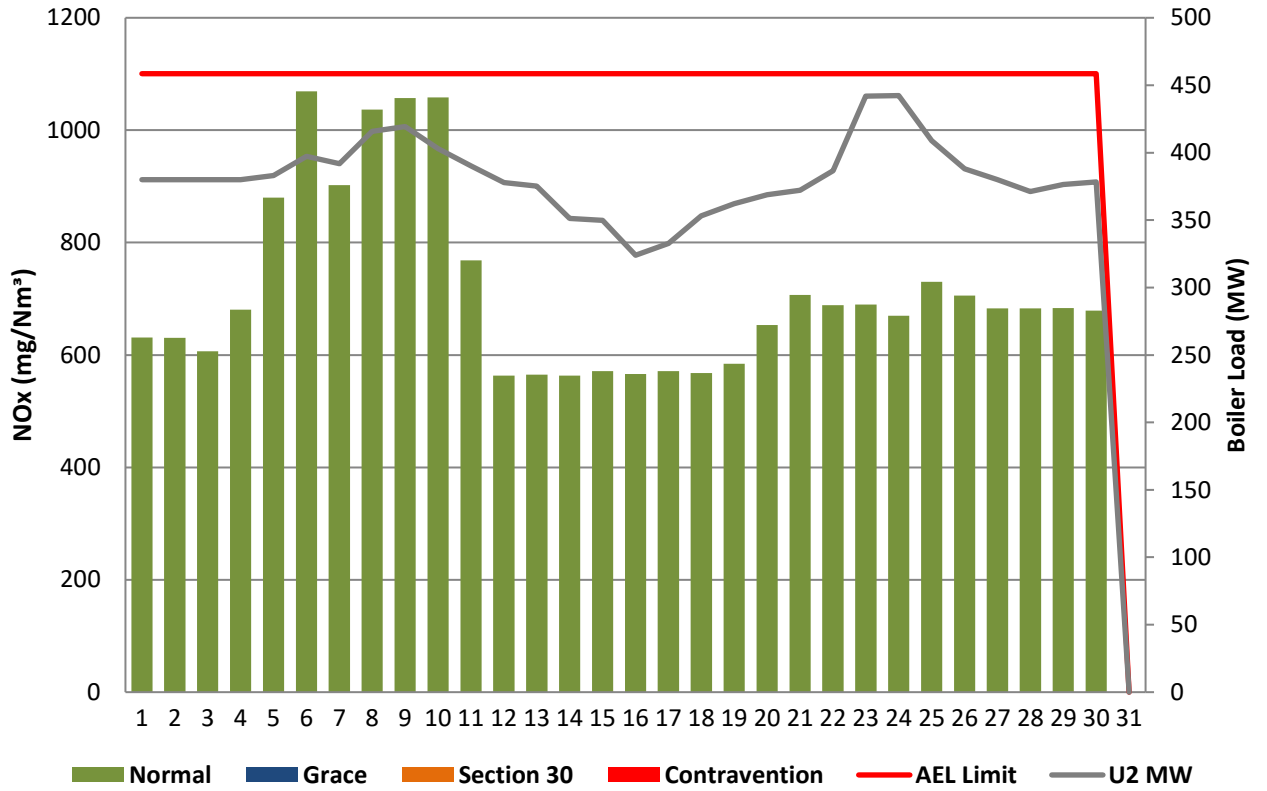


Figure 11: Duvha Unit 5 NOx Emissions - November 2021

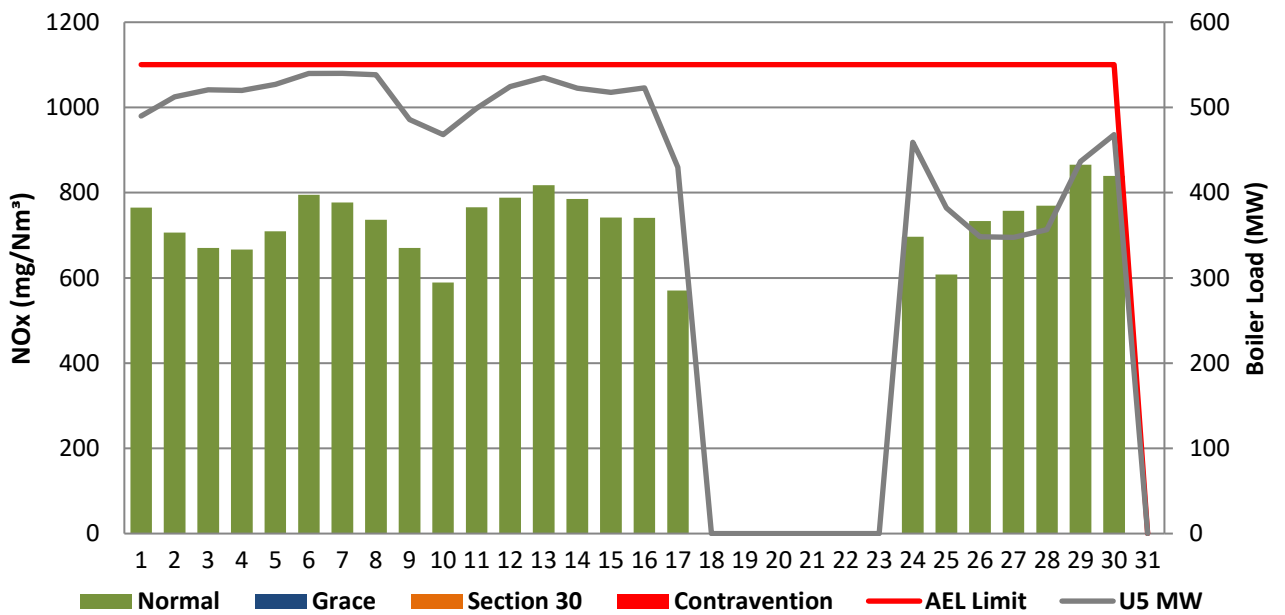
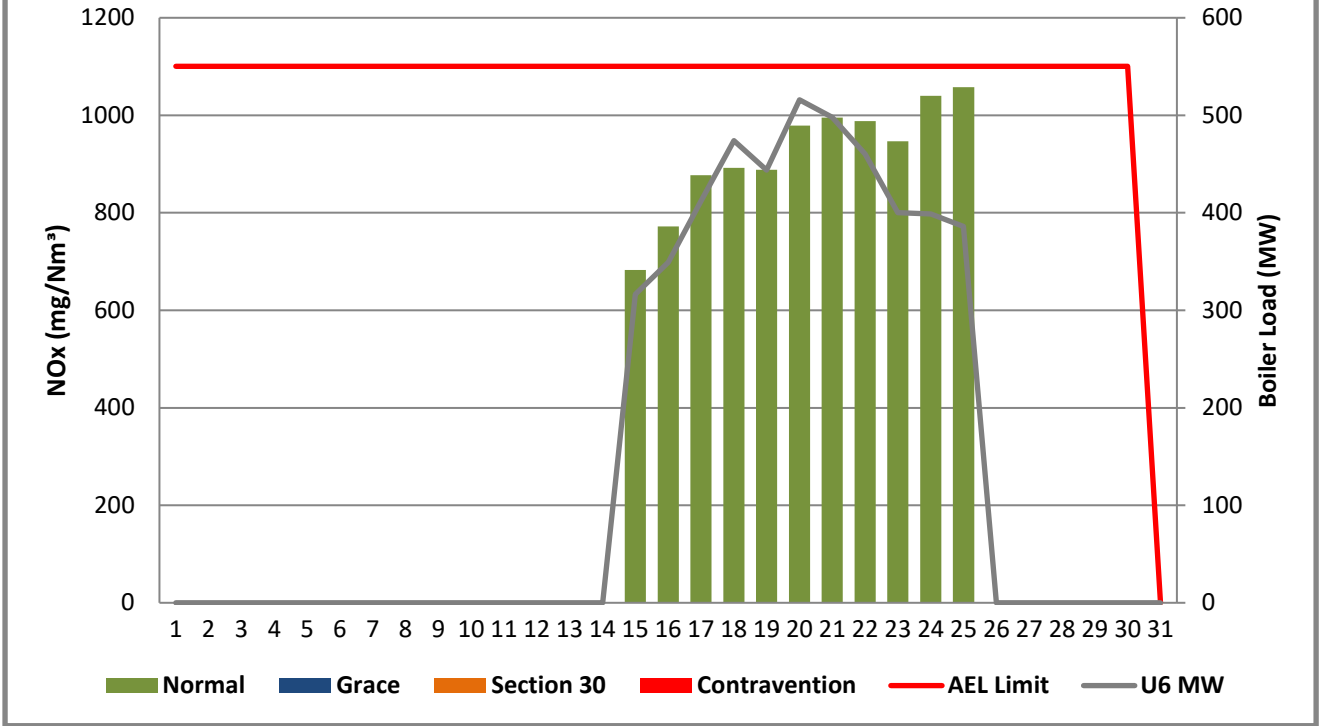


Figure 12: Duvha Unit 6 NOx Emissions - November 2021



7 SHUT DOWN AND LIGHT UP INFORMATION

Tables 7.1: Shut-down and light-up information for the month of November 2021

Unit No.1	Event 1	
Breaker Open (BO)	12:00 pm	2021/11/22
Draught Group (DG) Shut Down (SD)	12:50 pm	2021/11/23
BO to DG SD (duration)	01:00:50	DD:HH:MM
Fires in time	2:45 pm	2021/11/25
Synch. to Grid (or BC)	12:25 am	2021/11/26
Fires in to BC (duration)	00:09:40	DD:HH:MM
Emissions below limit from BC (end date)	not > limit	not > limit
Emissions below limit from BC (duration)	n/a	DD:HH:MM

Unit No.5	Event 1	
Breaker Open (BO)	8:05 am	2021/11/17
Draught Group (DG) Shut Down (SD)	11:55 pm	2021/11/17

BO to DG SD (duration)	00:15:50	DD:HH:MM
Fires in time	5:55 pm	2021/11/23
Synch. to Grid (or BC)	5:10 am	2021/11/24
Fires in to BC (duration)	00:11:15	DD:HH:MM
Emissions below limit from BC (end date)	1:00 pm	2021/11/25
Emissions below limit from BC (duration)	01:07:50	DD:HH:MM

Unit No.6	Event 1		Event 2	
Breaker Open (BO)	BO previously	BO previously	10:45 pm	2021/11/25
Draught Group (DG) Shut Down (SD)	n/a	n/a	11:30 pm	2021/11/25
BO to DG SD (duration)	n/a	DD:HH:MM	00:00:45	DD:HH:MM
Fires in time	12:00 am	2021/11/15		
Synch. to Grid (or BC)	3:55 am	2021/11/15		
Fires in to BC (duration)	00:03:55	DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	12:00 am	2021/11/17		
Emissions below limit from BC (duration)	01:20:05	DD:HH:MM		DD:HH:MM

8 General

Units 3 and 4 were offload during the month of November 2021.

Unit 1 NOx monitor reliability for the month of November 2021 was less than 80 % due to the monitor reading not calibrated and reading incorrect figures from 05/11/21 to 11/11/21. The incorrect raw data figures were removed and average figures are used to report.

The rest of the information demonstrating compliance with the emission license conditions is supplied in the annual emission report which will be sent to your office.

9 Complaints and 10 Incidents Register

Refer to addendum A

Ndwelezi

Boiler Plant
Engineering Manager

24 Dec 2021

Date

[Signature]

Environmental
Manager

2021/12/24

Date

[Signature]

Engineering Manager

2021/12/24

Date

Compiled
by:

Environmental Officer

For:

Nkangala District Municipality

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Production
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Environmental
Manager

