



**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

2021/11/29

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 Oct-2021
	Coal	Tons	1 400 000	480 233.46
	Fuel Oil	Tons	5 000	2563.82

Production Rates	Product / By-Product Name	Units	Maximum Production Capacity Permitted	Production Rate Oct-2021
	Energy	GWh	3600	812.12
	Ash	Tons	not specified	125100.82

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 TO >1.2	0.91
Ash Content	%	27 TO 30	26.05

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

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 October-2021	Minimum Utilization	Utilization October -2021
Unit 1	Fabric Filter Plant (FFP)	99%	99.98%	100%	100%
Unit 2	Fabric Filter Plant (FFP)	99%	99.90%	100%	100%
Unit 4	Electro Static Precipitator (ESP)	99.6%	Unit Off-line	100%	Unit Off-line
Unit 5	Electro Static Precipitator (ESP)	99.6%	99.74%	100%	100%
Unit 6	Electro Static Precipitator (ESP)	99.6%	99.63%	100%	100%
Unit 4	Chemithon (SO3)	99.6%	Unit Off-line	96%	Unit Off-line
Unit 5	Chemithon (SO3)	99.6%	100%	96%	97.00%
Unit 6	Chemithon (SO3)	99.6%	100%	96%	96.00%

### 5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO <sub>2</sub>	NO
Unit 1	3.5	100.0	100.0
Unit 2	100.0	65.5	67.9
Unit 5	100.0	81.2	81.2
Unit 6	100.0	75.2	75.2

## 6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of October 2021

Associated Unit/Stack	PM (tons)	SO <sub>2</sub> (tons)	NO <sub>x</sub> (tons)
Unit 1	1.29	547.77	200.37
Unit 2	41.22	1 910.89	1 007.88
Unit 5	116.63	2 419.56	1 386.71
Unit 6	84.37	2 333.05	1 265.38
<b>SUM</b>	<b>243.50</b>	<b>7 211.27</b>	<b>3 860.33</b>

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm <sup>3</sup> )
Unit 1	4	0	0	0	0	7.59
Unit 2	26	0	0	0	0	30.23
Unit 5	29	2	0	0	2	62.08
Unit 6	16	2	0	0	2	68.06
<b>SUM</b>	<b>75</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>	

Table 6.3: Operating days in compliance to SO<sub>x</sub> AEL Limit - October 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO <sub>x</sub> (mg/Nm <sup>3</sup> )
Unit 1	5	0	0	0	0	1 770.16
Unit 2	27	0	0	0	0	1 342.75
Unit 5	27	0	0	0	0	1 387.03
Unit 6	18	0	0	0	0	1 861.69
<b>SUM</b>	<b>77</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

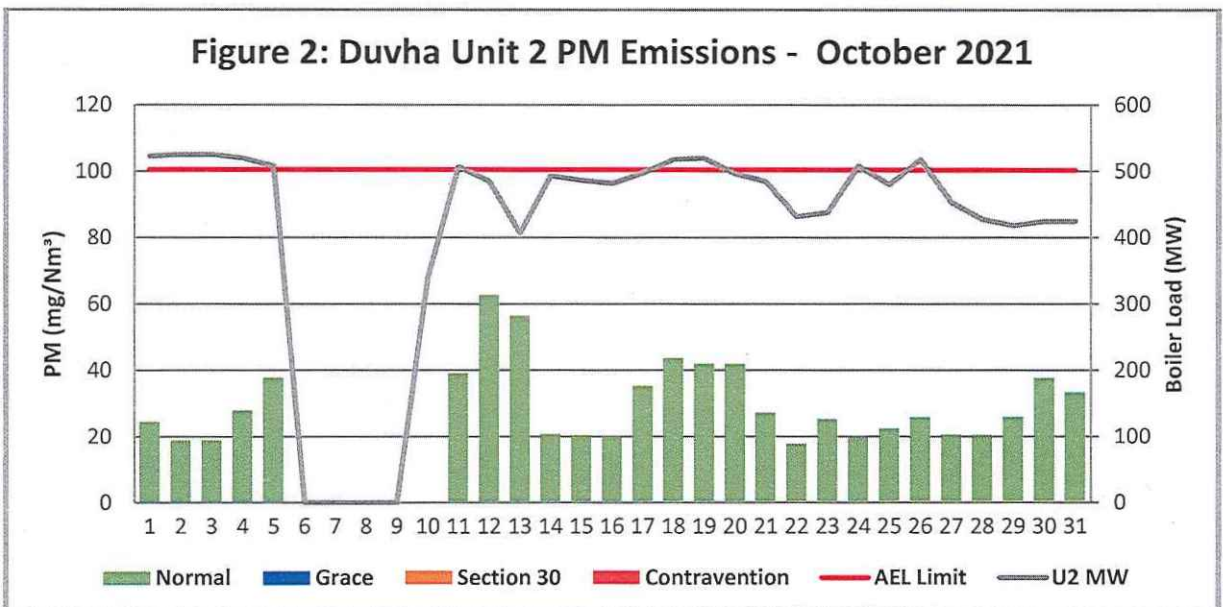
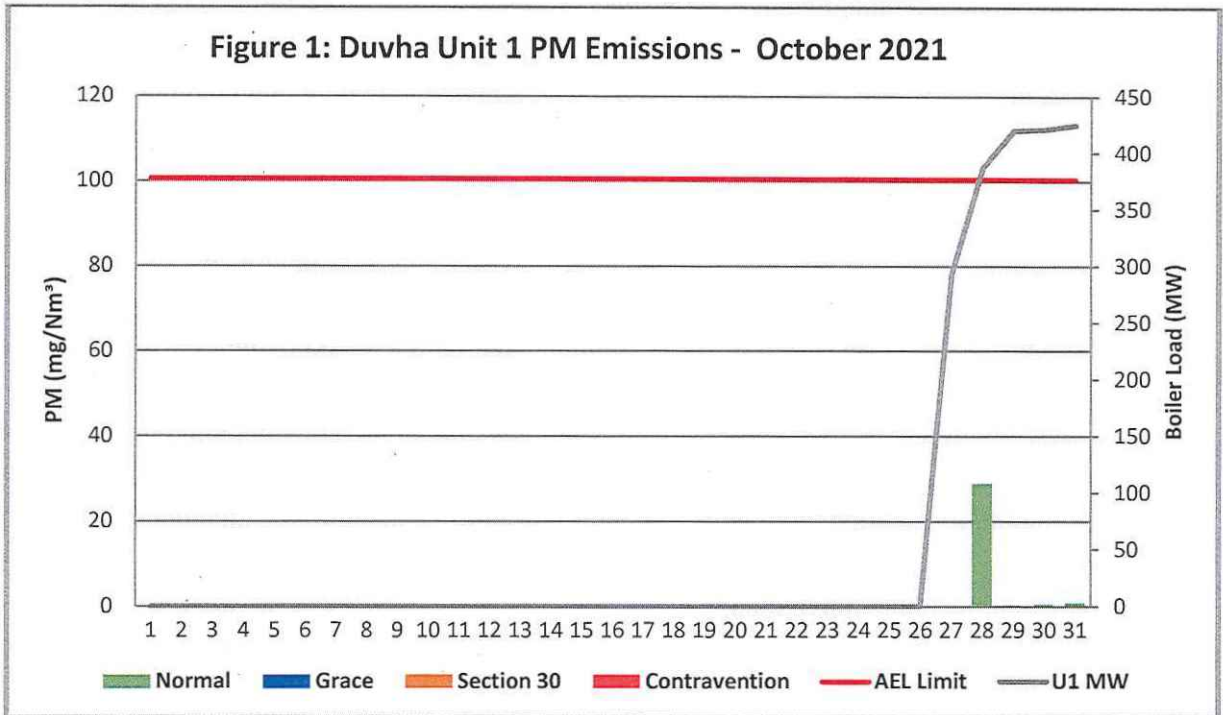
Table 6.4: Operating days in compliance to NO<sub>x</sub> AEL Limit - October 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO <sub>x</sub> (mg/Nm <sup>3</sup> )
Unit 1	5	0	0	0	0	629.56
Unit 2	27	0	0	0	0	699.23
Unit 5	27	0	0	0	0	767.23
Unit 6	18	0	0	0	0	1 006.76
<b>SUM</b>	<b>77</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

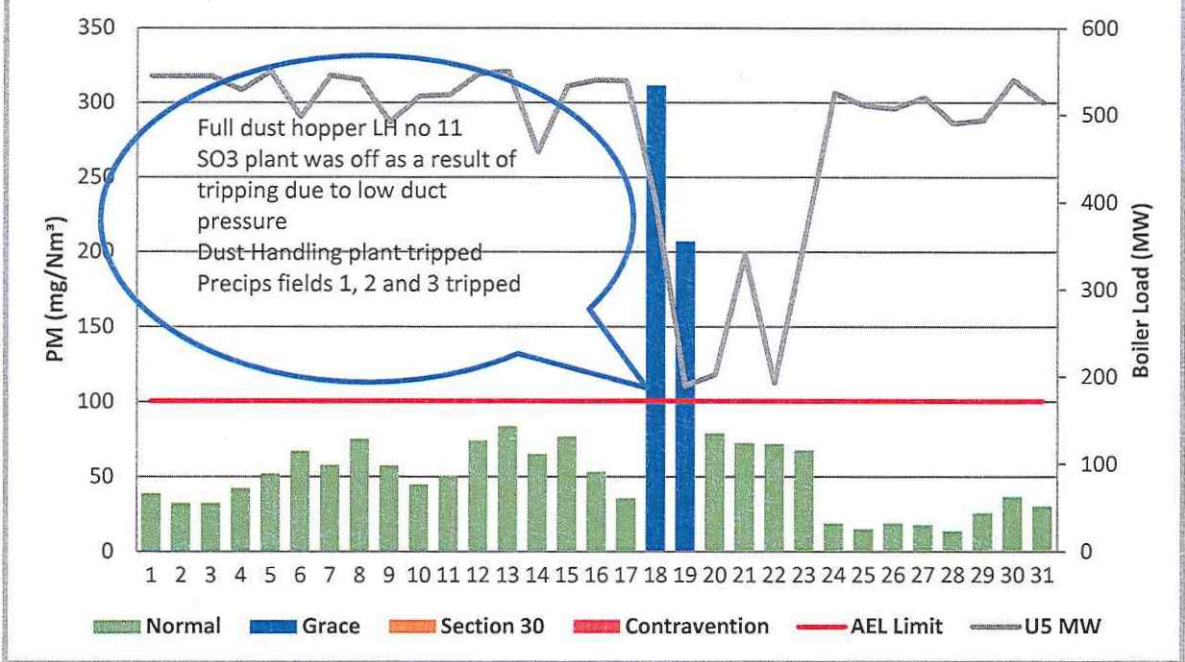
Table 6.5: Legend Description

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

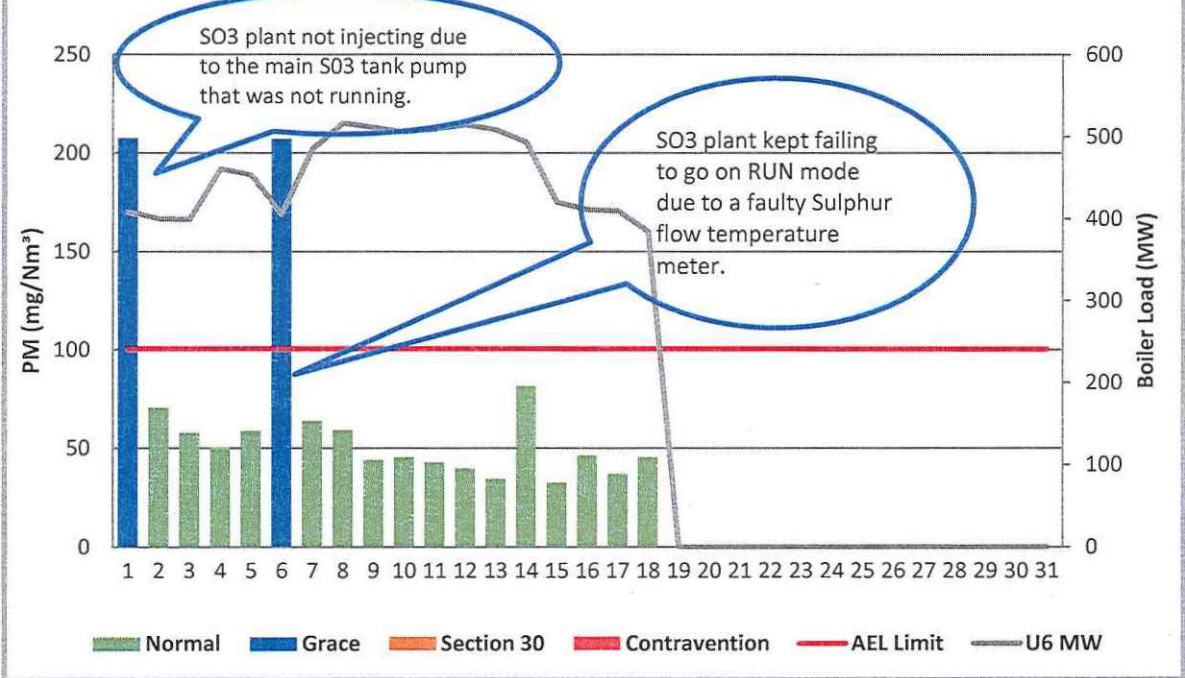
Contravention   Emissions above ELV but outside grace or S30 incident conditions



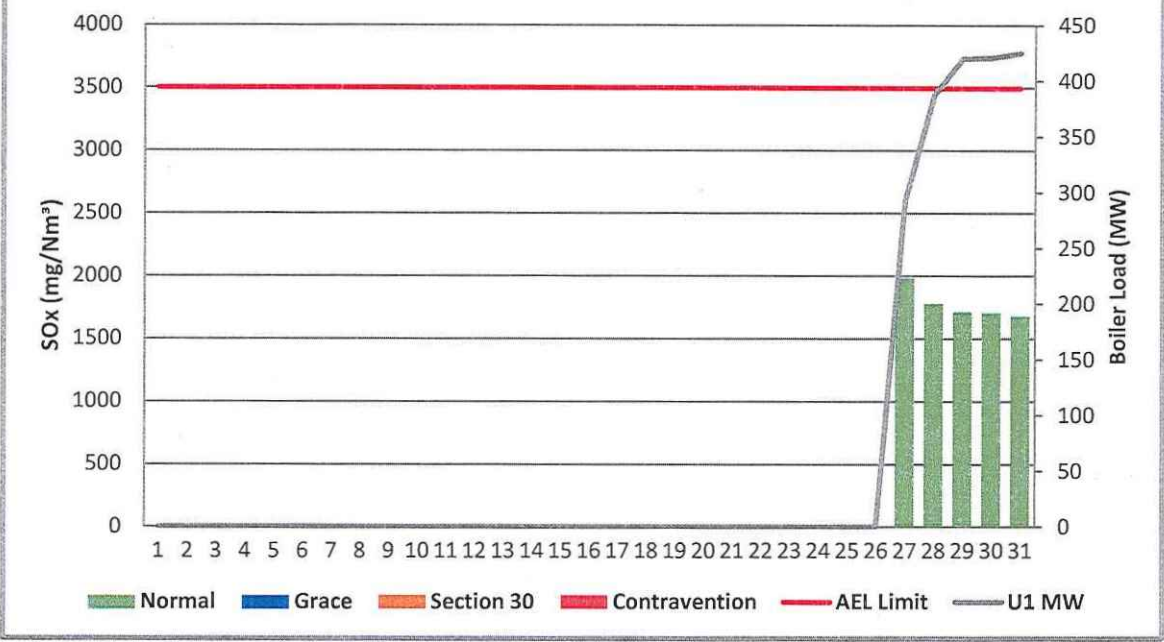
**Figure 3: Duvha Unit 5 PM Emissions - October 2021**



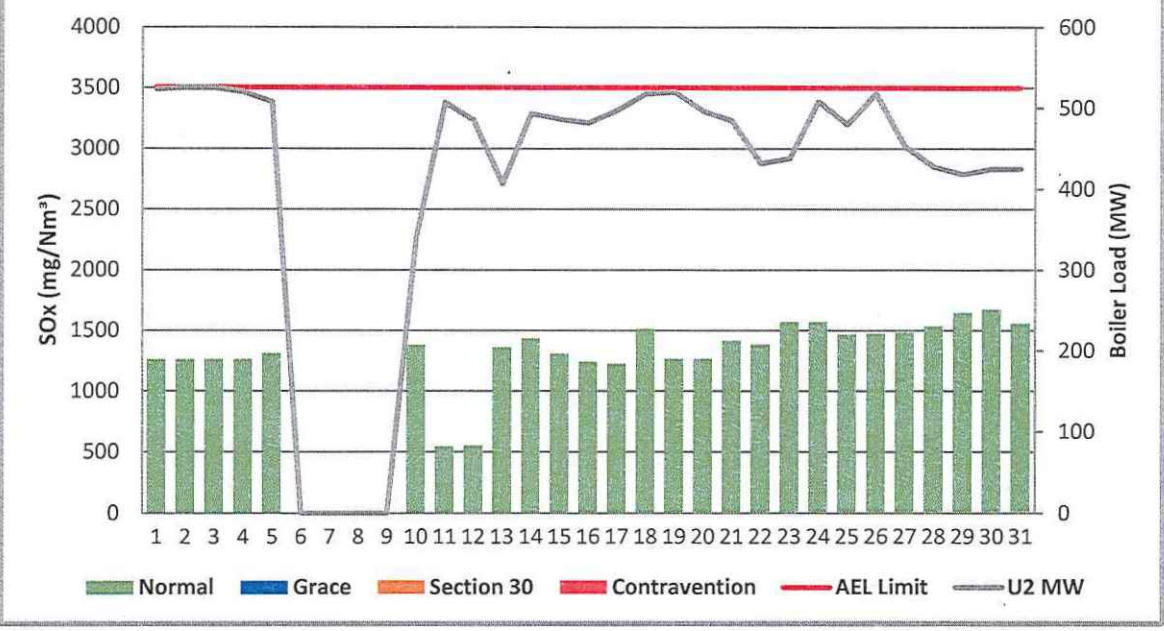
**Figure 4: Duvha Unit 6 PM Emissions - October 2021**



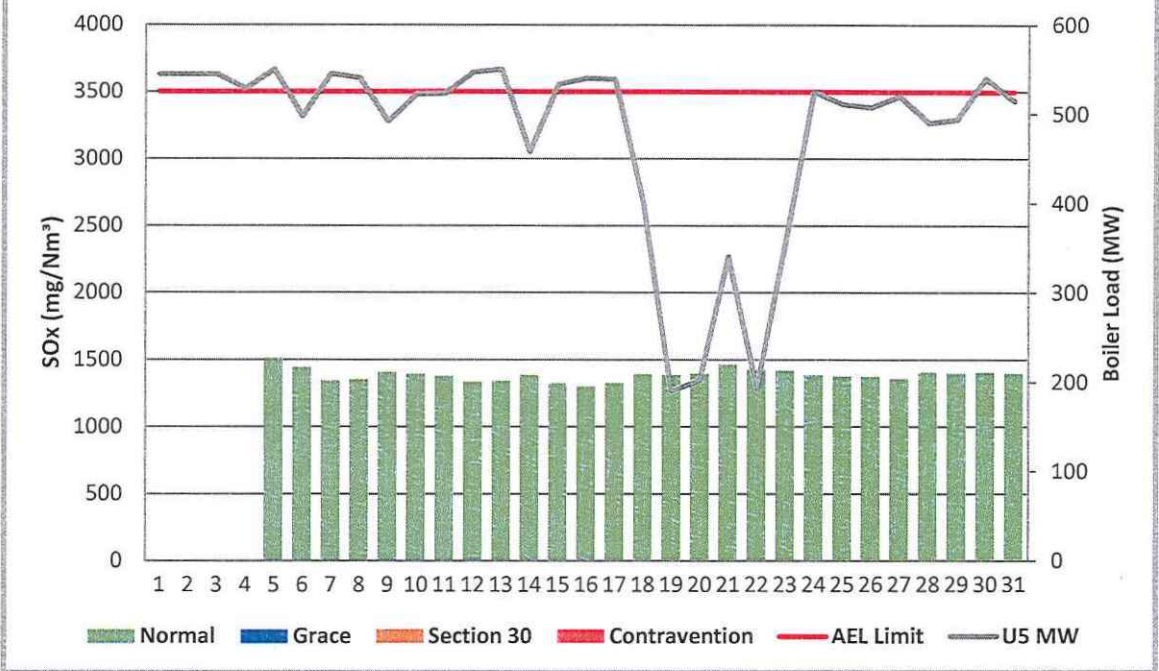
**Figure 5: Duvha Unit 1 SOx Emissions - October 2021**



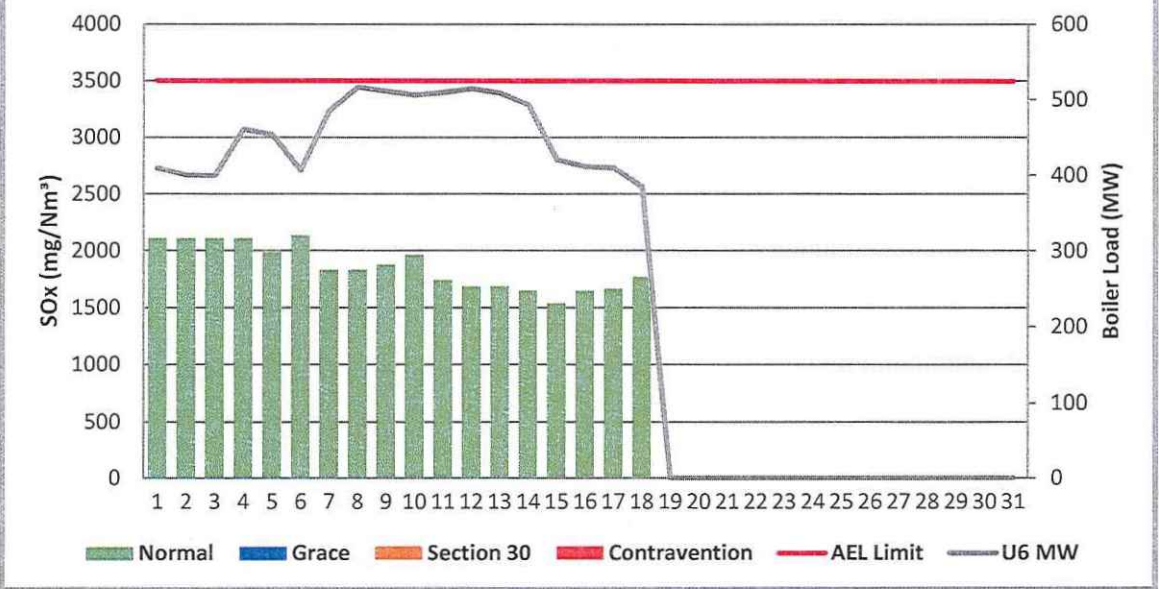
**Figure 6: Duvha Unit 2 SOx Emissions - October 2021**



**Figure 7: Duvha Unit 5 SOx Emissions - October 2021**

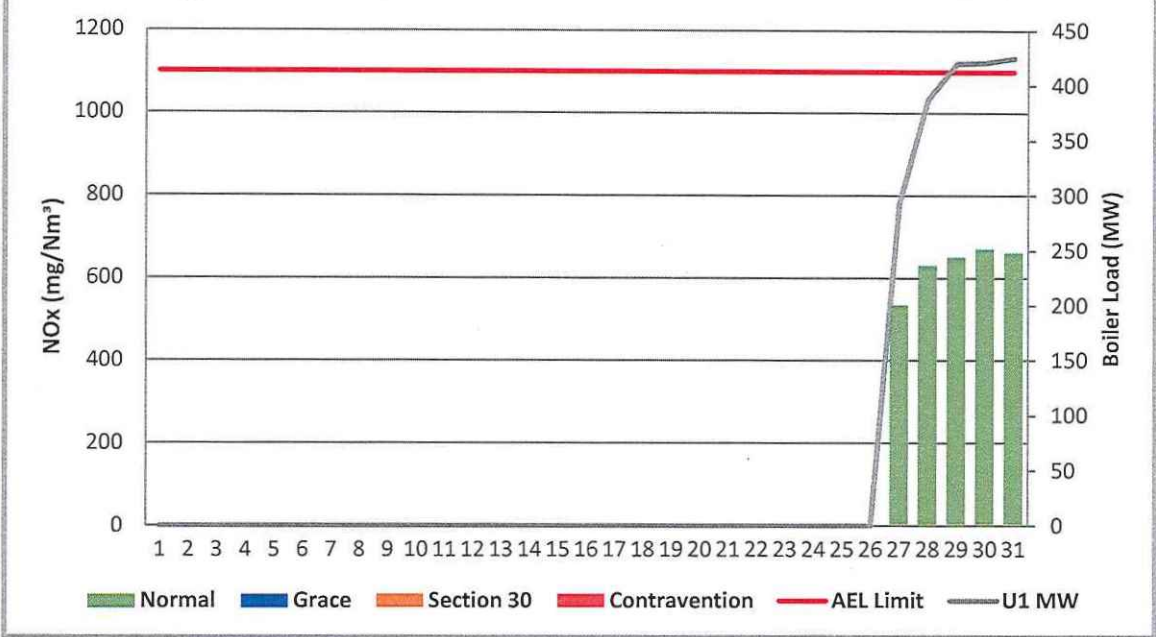


**Figure 8: Duvha Unit 6 SOx Emissions - October 2021**

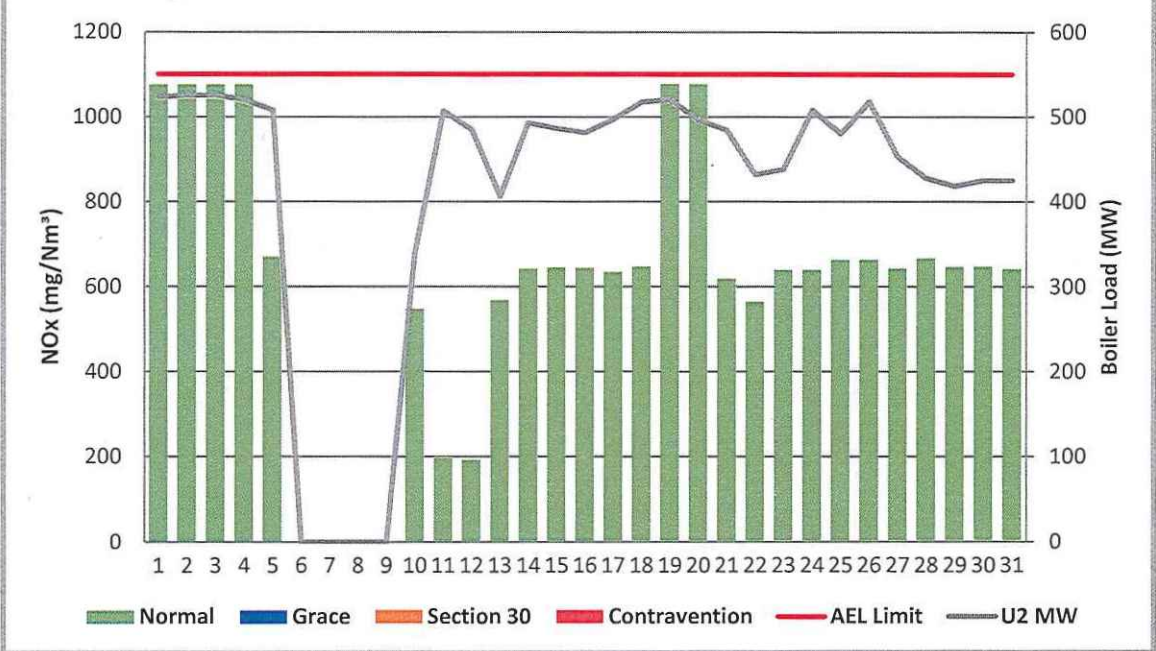




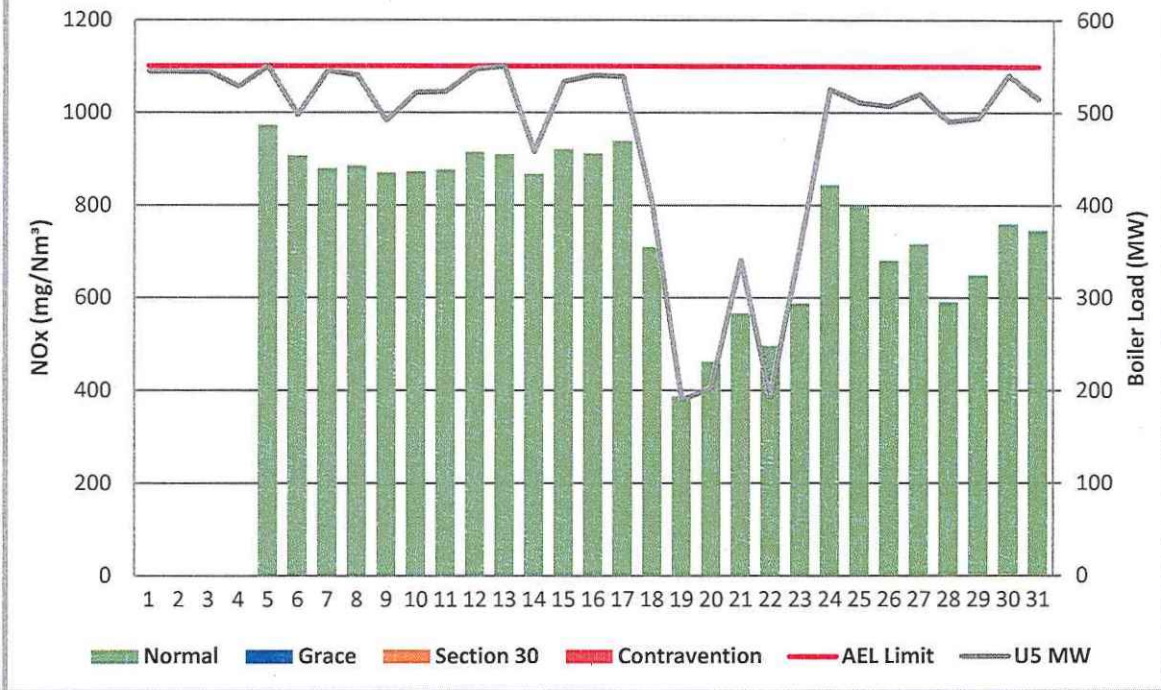
**Figure 9: Duvha Unit 1 NOx Emissions - October 2021**



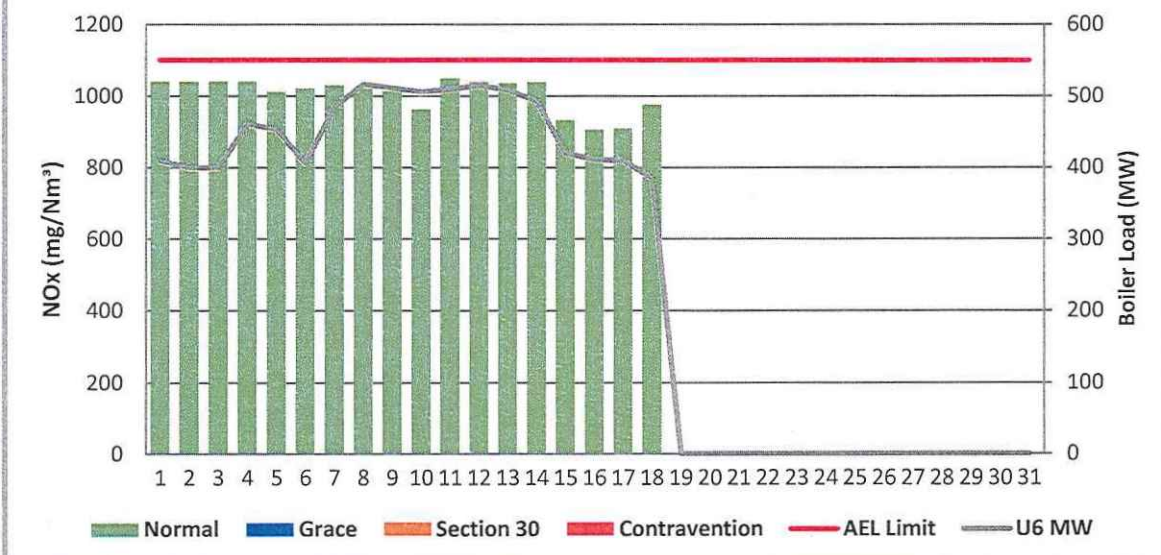
**Figure 10: Duvha Unit 2 NOx Emissions - October 2021**



**Figure 11: Duvha Unit 5 NOx Emissions - October 2021**



**Figure 12: Duvha Unit 6 NOx Emissions - October 2021**



## 7 SHUT DOWN AND LIGHT UP INFORMATION

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

Unit No.1	<i>Event 1</i>	
Breaker Open (BO)	<i>BO previously</i>	<i>BO previously</i>
Draught Group (DG) Shut Down (SD)	<i>n/a</i>	<i>n/a</i>
BO to DG SD (duration)	<i>n/a</i>	DD:HH:MM
Fires in time	<i>7:05 am</i>	<i>2021/10/27</i>
Synch. to Grid (or BC)	<i>9:45 am</i>	<i>2021/10/27</i>
Fires in to BC (duration)	<i>00:02:40</i>	DD:HH:MM
Emissions below limit from BC (end date)	<i>not &gt; limit</i>	<i>not &gt; limit</i>
Emissions below limit from BC (duration)	<i>n/a</i>	DD:HH:MM

Unit No.2	<i>Event 1</i>	
Breaker Open (BO)	<i>10:35 pm</i>	<i>2021/10/05</i>
Draught Group (DG) Shut Down (SD)	<i>9:35 am</i>	<i>2021/10/06</i>
BO to DG SD (duration)	<i>00:11:00</i>	DD:HH:MM
Fires in time	<i>7:20 am</i>	<i>2021/10/10</i>
Synch. to Grid (or BC)	<i>2:05 pm</i>	<i>2021/10/10</i>
Fires in to BC (duration)	<i>00:06:45</i>	DD:HH:MM
Emissions below limit from BC (end date)	<i>not &gt; limit</i>	<i>not &gt; limit</i>
Emissions below limit from BC (duration)	<i>n/a</i>	DD:HH:MM

Unit No.6	<i>Event 1</i>	
Breaker Open (BO)	<i>12:45 pm</i>	<i>2021/10/18</i>
Draught Group (DG) Shut Down (SD)	<i>1:35 pm</i>	<i>2021/10/18</i>
BO to DG SD (duration)	<i>00:00:50</i>	DD:HH:MM
Fires in time		
Synch. to Grid (or BC)		
Fires in to BC (duration)		DD:HH:MM

Emissions below limit from BC (end date)		
Emissions below limit from BC (duration)		DD:HH:MM

### 8 General

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


Unit 1 particulate matter emissions monitor reliability was below 80% for the month of October 2021 due to due to the monitor transmitter and reflector calibration distance that was out. The monitor was fixed and calibrated on 02/11/2021.

Units 2 and 6 NOx and SOx emissions monitors reliabilities were below 80% for the month of October 2021 due to faulty monitors however this could not be picked up as the VA server was corrupted at the time. The faulty monitors were resolved.


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

  
 \_\_\_\_\_  
 Boiler Plant Engineering  
 Manager

26/11/2021  
 Date

  
 \_\_\_\_\_  
 Environmental  
 Manager

2021/11/26  
 Date

  
 \_\_\_\_\_  
 Engineering Manager

2021/11/26  
 Date

Compiled by: Environmental Officer

For: Nkangala District Municipality Air Quality Officer

Copies: Eskom Environmental Management D Herbst  
B Mccourt

Group Technology Engineering R Rampiar  
E Patel

Duvha Power Station: Engineering Manager  
Operating Manager  
Maintenance Manager  
Production Manager  
Boiler Engineering Manager  
System Engineer  
Environmental  
Manager

