



## Generation

Nkangala District Municipality  
P O Box 437  
Middleburg  
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### Attention:

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AND

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Services

The Chief Director:

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## DUVHA POWER STATION

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

GENERAL MANAGER

2021/10/08

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 Aug-2021
	Coal	Tons	1 400 000	493 386.71
	Fuel Oil	Tons	5 000	3253.81
Production Rates	Product / By-Product Name	Units	Maximum Production Capacity Permitted	Production Rate Aug-2021
	Energy	GWh	3600	835.01
	Ash	Tons	not specified	130747.48

**2 ENERGY SOURCE CHARACTERISTICS**

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 TO >1.2	0.88
Ash Content	%	27 TO 30	26.50

### 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

### 4 ABATEMET TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Minimum Control Efficiency	Efficiency AUGUST-2021	Minimum Utilization	Utilization AUGUST - 2021
Unit 1	Fabric Filter Plant (FFP)	99%	99.86%	100%	100%
Unit 2	Fabric Filter Plant (FFP)	99%	99.80%	100%	100%
Unit 4	Electro Static Precipitator (ESP)	99.6%	Offload	100%	Offload
Unit 5	Electro Static Precipitator (ESP)	99.6%	99.86%	100%	100%
Unit 6	Electro Static Precipitator (ESP)	99.6%	99.76%	100%	100%
Unit 4	Chemithon (SO3)	99.6%	Offload	96%	Offload
Unit 5	Chemithon (SO3)	99.6%	100%	96%	98.00%
Unit 6	Chemithon (SO3)	99.6%	100%	96%	97.00%

### 5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO <sub>2</sub>	NO
Unit 1	99.98	99.98	99.98
Unit 2	100.00	99.26	99.62
Unit 5	100.00	99.72	99.72
Unit 6	99.84	99.80	99.80

## 6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of August 2021

Associated Unit/Stack	PM (tons)	SO <sub>2</sub> (tons)	NO <sub>x</sub> (tons)
Unit 1	43.70	3 203.05	1 375.84
Unit 2	26.59	791.14	583.81
Unit 5	58.07	2 523.61	1 430.34
Unit 6	80.73	3 014.80	1 496.16
<b>SUM</b>	<b>209.08</b>	<b>9 532.60</b>	<b>4 886.16</b>

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm <sup>3</sup> )
Unit 1	22	0	0	0	0	27.62
Unit 2	10	0	0	0	0	44.45
Unit 5	29	0	0	0	0	34.83
Unit 6	22	4	0	0	4	68.08
<b>SUM</b>	<b>83</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 - August 2021

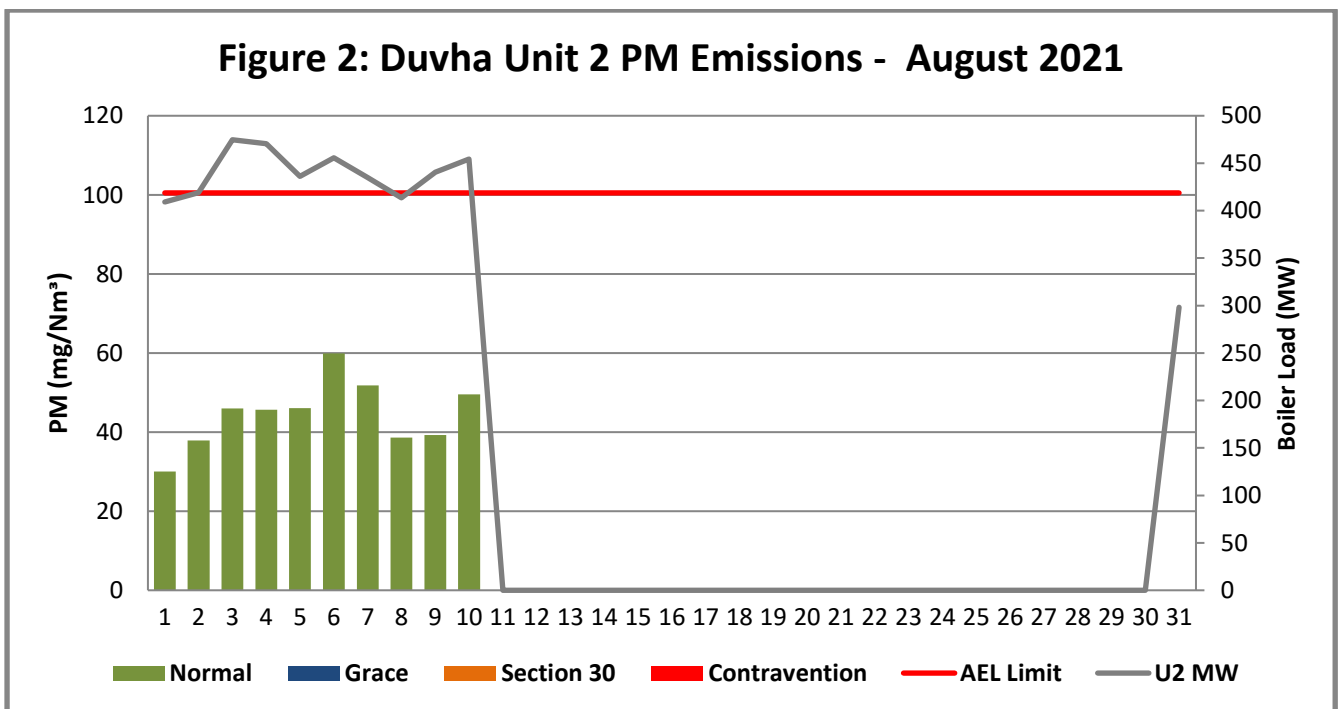
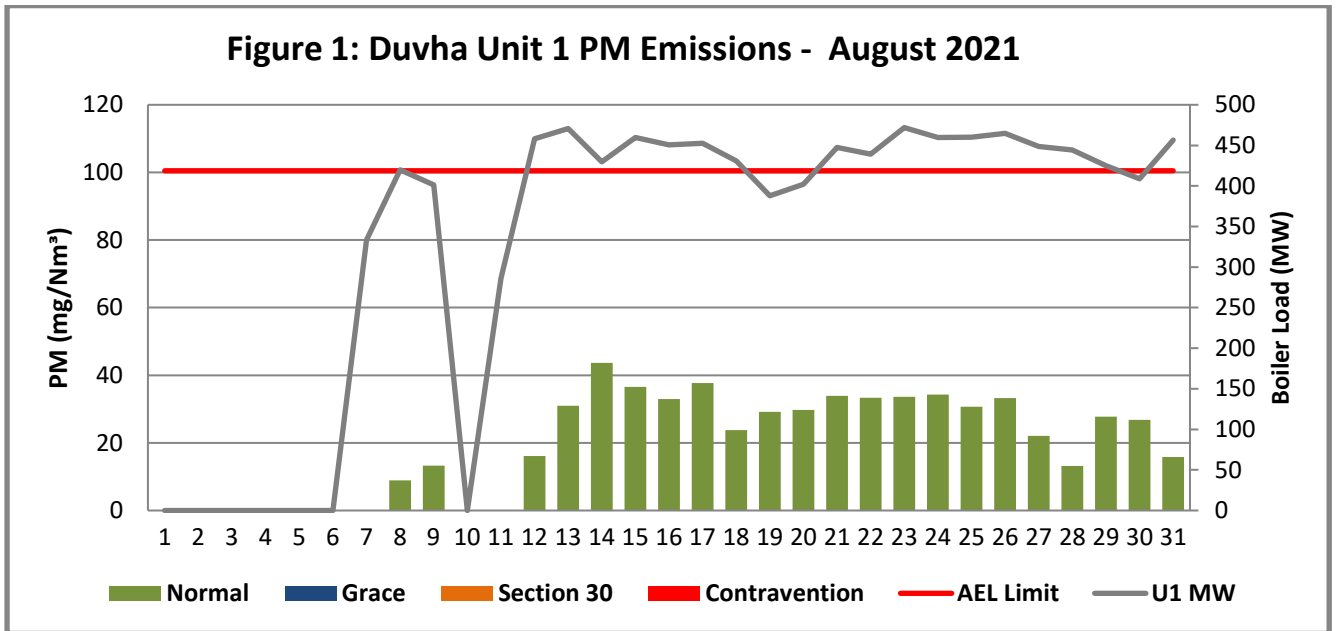
Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO <sub>x</sub> (mg/Nm <sup>3</sup> )
Unit 1	24	0	0	0	0	1 940.93
Unit 2	11	0	0	0	0	1 288.80
Unit 5	30	0	0	0	0	1 440.84
Unit 6	27	0	0	0	0	1 685.33
<b>SUM</b>	<b>92</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

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

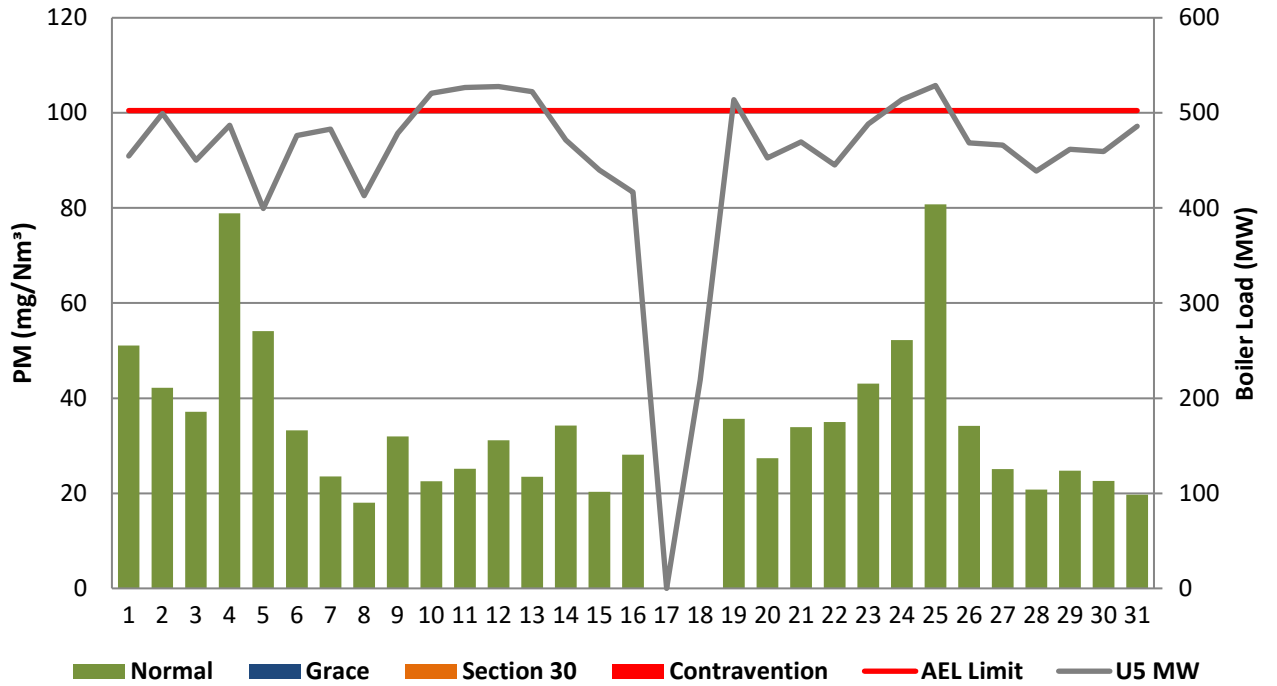
Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO <sub>x</sub> (mg/Nm <sup>3</sup> )
Unit 1	24	0	0	0	0	821.97
Unit 2	11	0	0	0	0	957.45
Unit 5	30	0	0	0	0	797.01
Unit 6	27	0	0	0	0	837.33
<b>SUM</b>	<b>92</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

Table 6.5: Legend Description

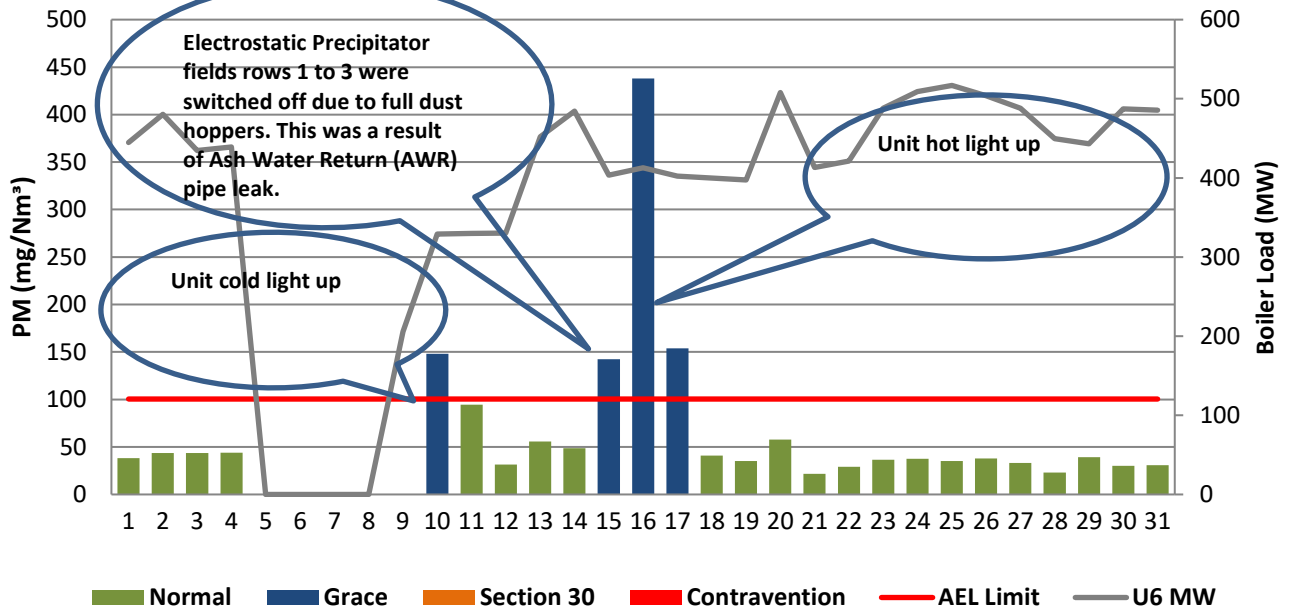
Condition	Colour	Description
Normal	Green	Emissions below Emission Limit Value (ELV)
Grace	Blue	Emissions above the ELV during grace period
Section 30	Orange	Emissions above ELV during a NEMA S30 incident
Contravention	Red	Emissions above ELV but outside grace or S30 incident conditions



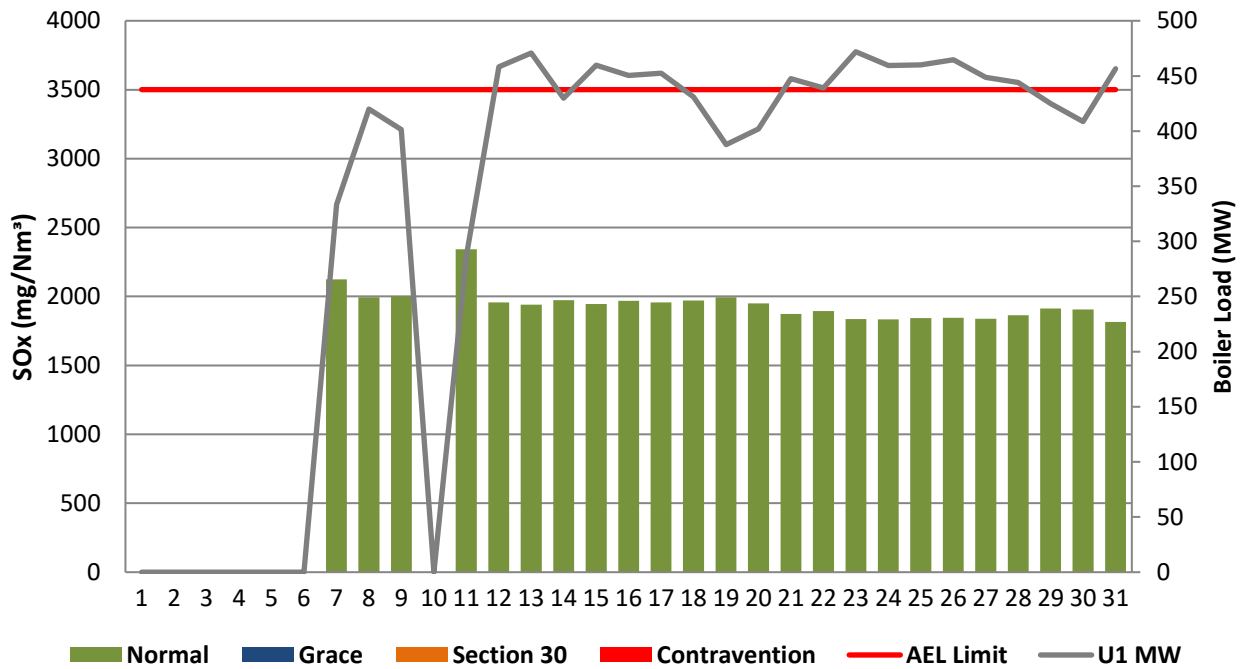
**Figure 3: Duvha Unit 5 PM Emissions - August 2021**



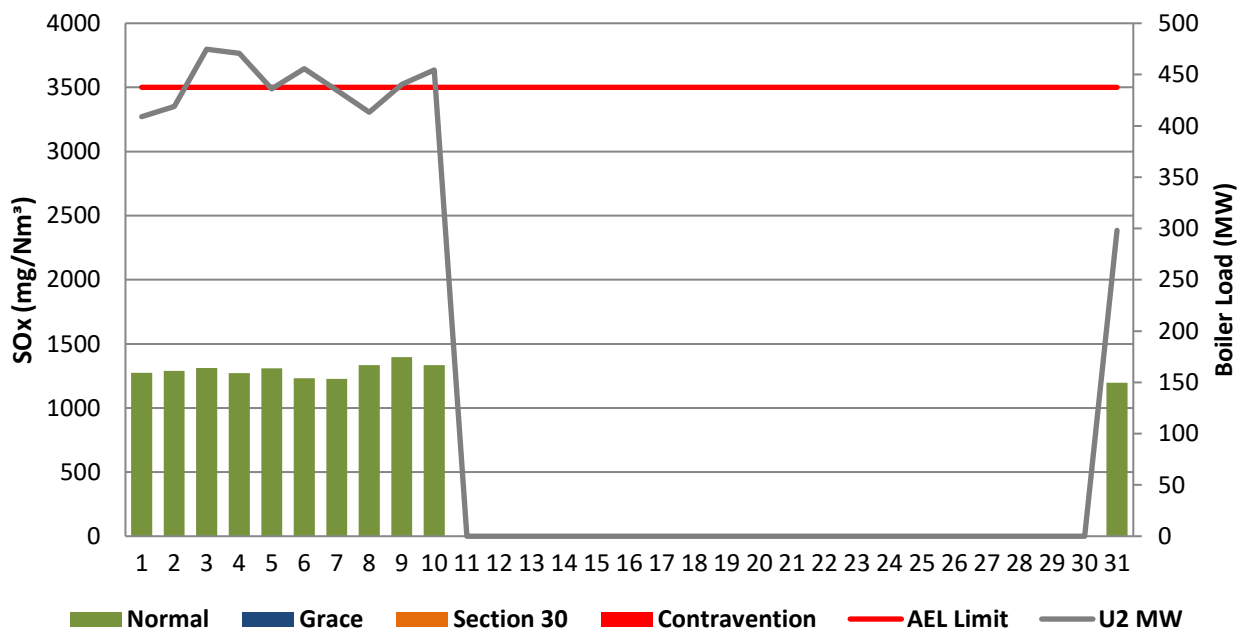
**Figure 4: Duvha Unit 6 PM Emissions - August 2021**



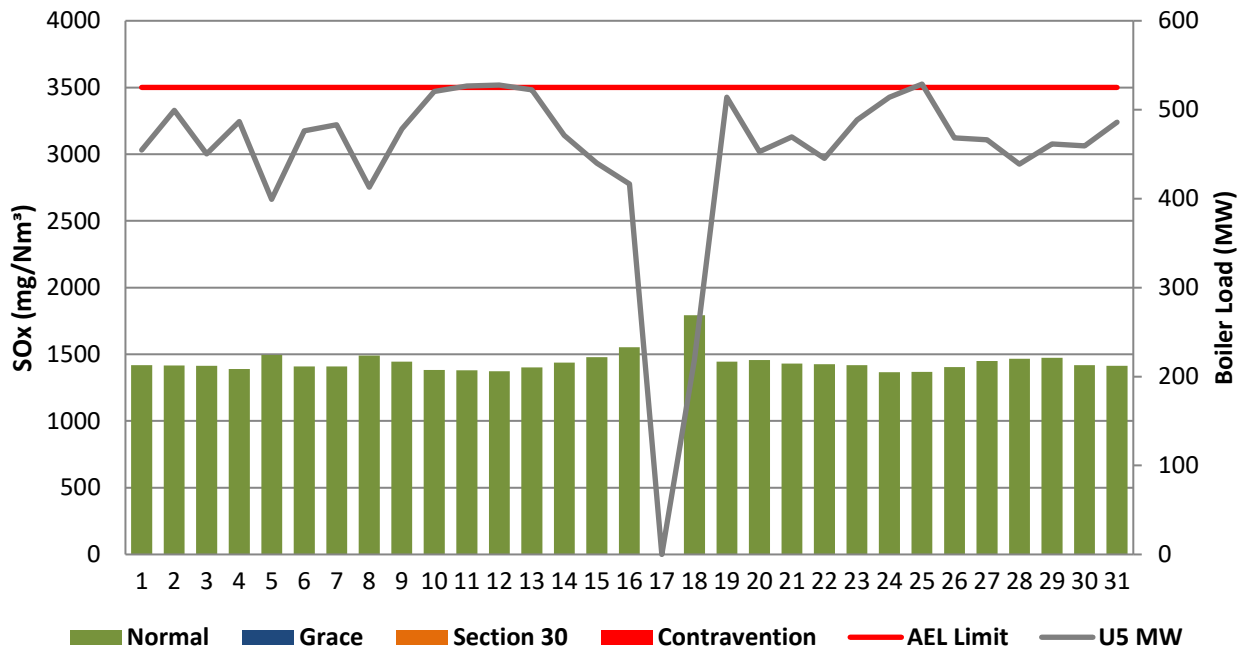
**Figure 5: Duvha Unit 1 SOx Emissions - August 2021**



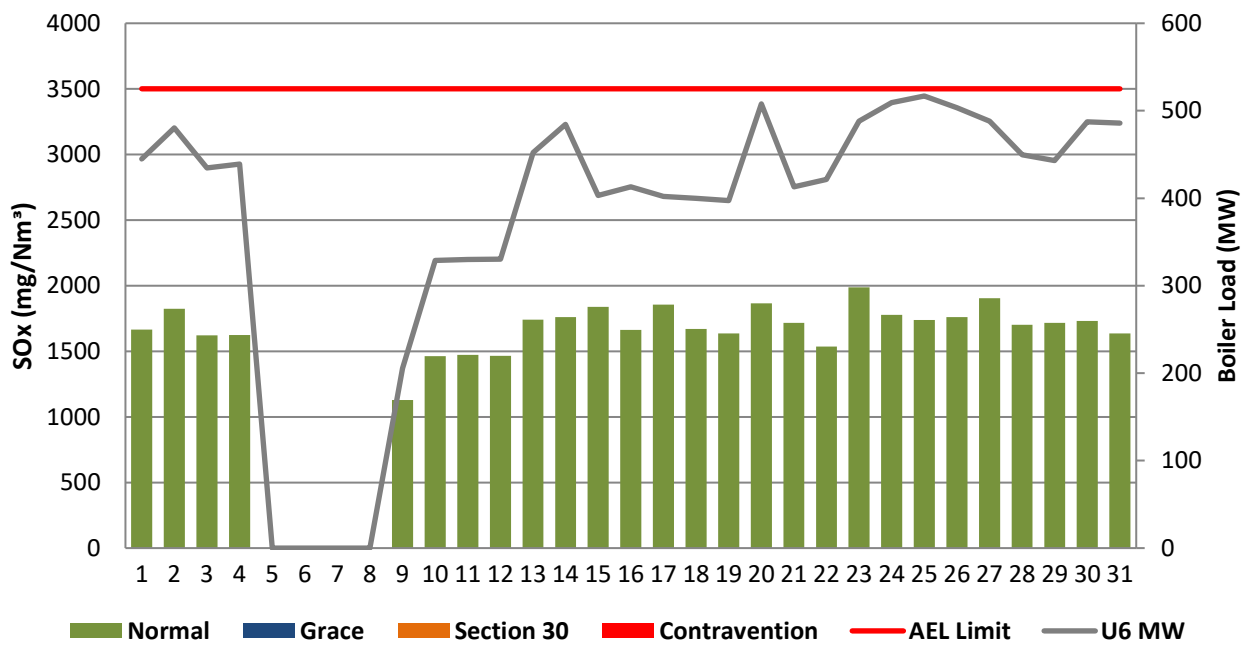
**Figure 6: Duvha Unit 2 SOx Emissions - August 2021**



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

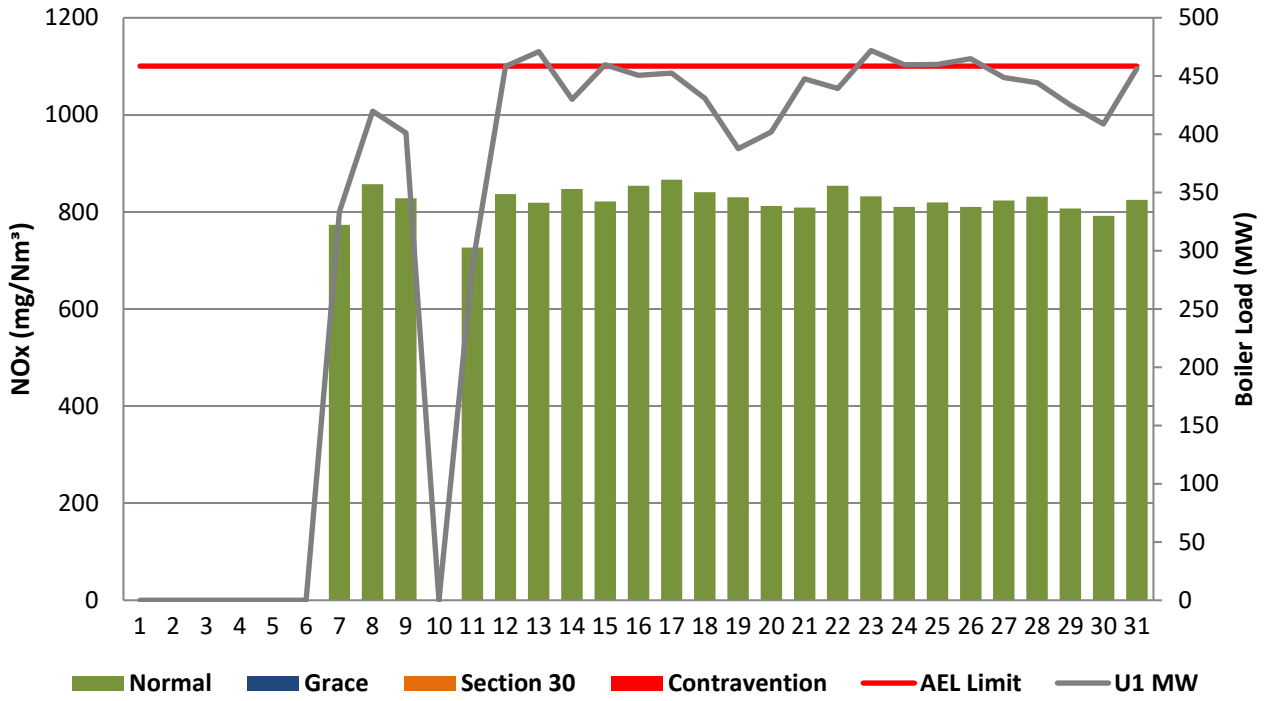


**Figure 8: Duvha Unit 6 SOx Emissions - August 2021**

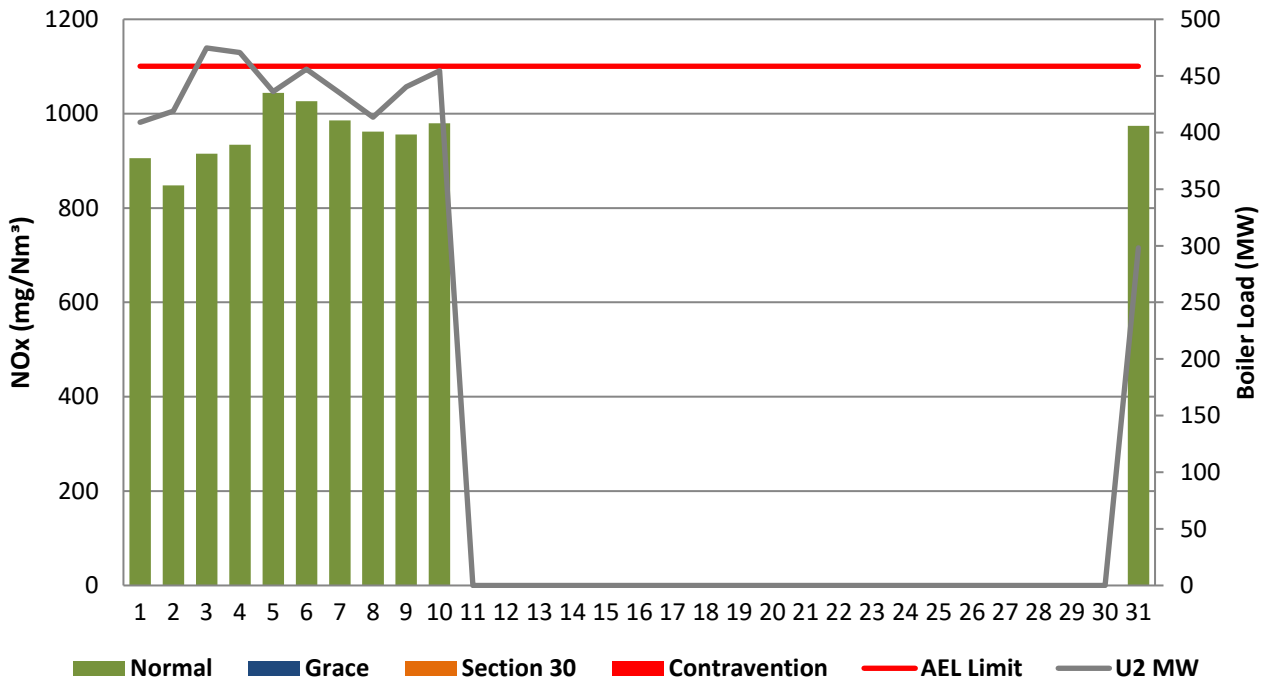




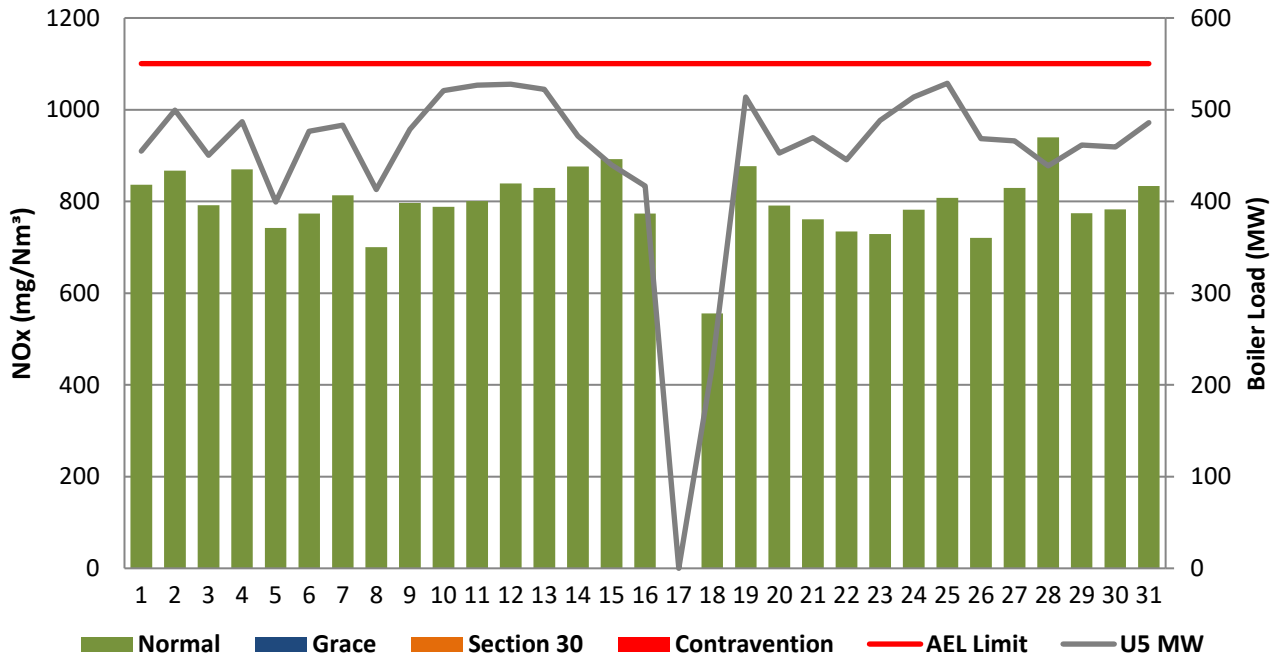
**Figure 9: Duvha Unit 1 NOx Emissions - August 2021**



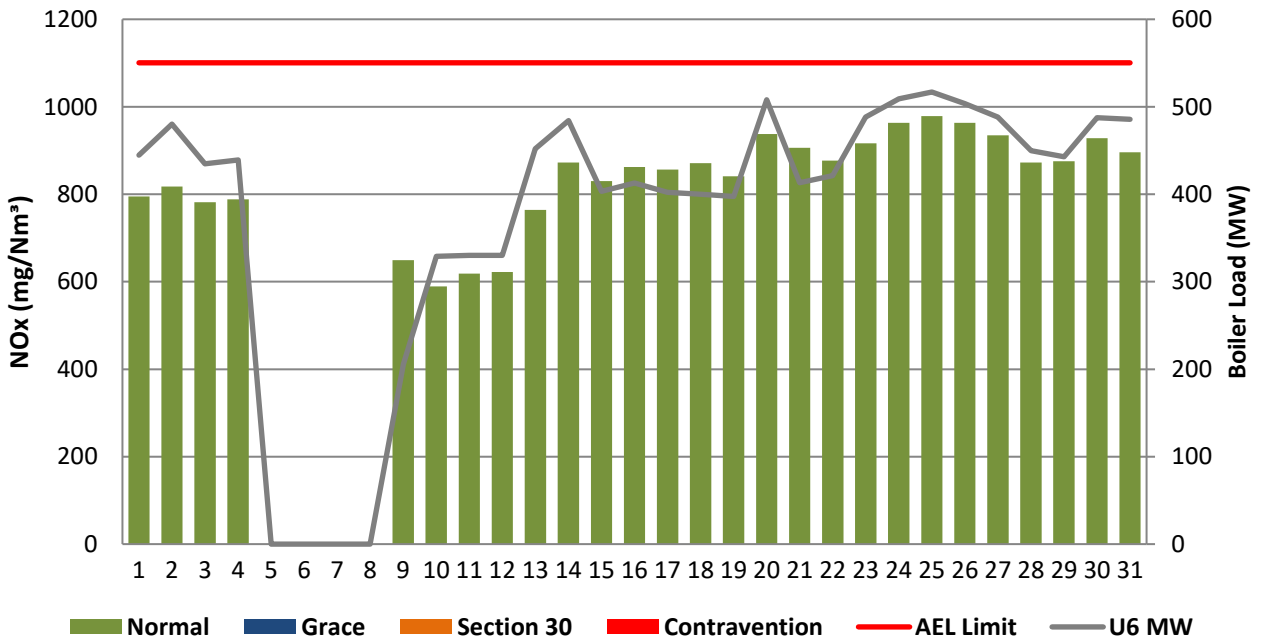
**Figure 10: Duvha Unit 2 NOx Emissions - August 2021**



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



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



## 7 SHUT DOWN AND LIGHT UP INFORMATION

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

Unit No.1	<i>Event 1</i>		<i>Event 2</i>	
Breaker Open (BO)	<i>BO previously</i>	<i>BO previously</i>	<i>4:05 pm</i>	<i>2021/08/09</i>
Draught Group (DG) Shut Down (SD)	<i>n/a</i>	<i>n/a</i>	<i>4:50 pm</i>	<i>2021/08/09</i>
BO to DG SD (duration)	<i>n/a</i>	DD:HH:MM	<i>00:00:45</i>	DD:HH:MM
Fires in time	<i>1:05 pm</i>	<i>2021/08/06</i>	<i>7:55 am</i>	<i>2021/08/11</i>
Synch. to Grid (or BC)	<i>1:05 pm</i>	<i>2021/08/11</i>	<i>1:05 pm</i>	<i>2021/08/11</i>
Fires in to BC (duration)	<i>01:02:30</i>	DD:HH:MM	<i>00:05:10</i>	DD:HH:MM
Emissions below limit from BC (end date)	<i>not &gt; limit</i>	<i>not &gt; limit</i>	<i>not &gt; limit</i>	<i>not &gt; limit</i>
Emissions below limit from BC (duration)	<i>n/a</i>	DD:HH:MM	<i>n/a</i>	DD:HH:MM

Unit No.2	<i>Event 1</i>	
Breaker Open (BO)	<i>12:10 pm</i>	<i>2021/08/10</i>
Draught Group (DG) Shut Down (SD)	<i>DG did not trip or SD</i>	<i>DG did not trip or SD</i>
BO to DG SD (duration)	<i>n/a</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

Unit No.5	<i>Event 1</i>		<i>Event 2</i>	
Breaker Open (BO)	<i>6:50 pm</i>	<i>2021/08/05</i>	<i>2:10 am</i>	<i>2021/08/16</i>
Draught Group (DG) Shut Down (SD)	<i>DG did not trip or SD</i>	<i>DG did not trip or SD</i>	<i>2:45 pm</i>	<i>2021/08/18</i>
BO to DG SD (duration)	<i>n/a</i>	DD:HH:MM	<i>02:12:35</i>	DD:HH:MM
Fires in time			<i>4:55 pm</i>	<i>2021/08/18</i>
Synch. to Grid (or BC)			<i>8:35 pm</i>	<i>2021/08/18</i>
Fires in to BC (duration)		DD:HH:MM	<i>00:03:40</i>	DD:HH:MM
Emissions below limit from BC (end date)			<i>1:00 am</i>	<i>2021/08/20</i>
Emissions below limit from BC (duration)		DD:HH:MM	<i>01:04:25</i>	DD:HH:MM

Unit No.6	Event 1		Event 2	
Breaker Open (BO)	2:10 pm	2021/08/04	12:50 am	2021/08/16
Draught Group (DG) Shut Down (SD)	12:15 pm	2021/08/05	DG did not trip or SD	DG did not trip or SD
BO to DG SD (duration)	00:22:05	DD:HH:MM	n/a	DD:HH:MM
Fires in time	4:05 pm	2021/08/09		
Synch. to Grid (or BC)	8:15 pm	2021/08/09		
Fires in to BC (duration)	00:04:10	DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	9:00 pm	2021/08/11		
Emissions below limit from BC (duration)	02:00:45	DD:HH:MM		DD:HH:MM

## 8 General


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

Unit 6 oxygen monitors were faulty and giving faulty readings. The average Oxygen Standard Reference Method values from QAL 2 reports were used to generate averages for this period.

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

B Hlatshwayo (act)   
Boiler Plant  
Engineering Manager

2021/09/30  
Date

  
Environmental  
Manager

2021/09/30  
Date

  
Engineering Manager

2021/09/30  
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

