



**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

2021/11/04

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 Sep-2021
	Coal	Tons	1 400 000	532 699.87
	Fuel Oil	Tons	5 000	1690.73
Production Rates	Product / By-Product Name	Units	Maximum Production Capacity Permitted	Production Rate Sep-2021
	Energy	GWh	3600	967.52
	Ash	Tons	not specified	142017.79

**2 ENERGY SOURCE CHARACTERISTICS**

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 TO >1.2	0.84
Ash Content	%	27 TO 30	26.66

### 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

### 5 MONITOR RELIABILITY (%)

Associated Unit/Stack	Technology Type	Minimum Control Efficiency	Efficiency SEP-2021	Minimum Utilization	Utilization SEP - 2021
Unit 1	<i>Fabric Filter Plant (FFP)</i>	99%	99.83%	100%	100%
Unit 2	<i>Fabric Filter Plant (FFP)</i>	99%	99.97%	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%	99.74%	100%	100%
Unit 6	<i>Electro Static Precipitator (ESP)</i>	99.6%	99.36%	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%	97.00%
Unit 6	<i>Chemithon (SO3)</i>	99.6%	100%	96%	93.00%

### 5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO <sub>2</sub>	NO
Unit 1	100.0	100.0	100.0
Unit 2	100.0	96.53	96.53
Unit 5	100.0	93.36	93.36
Unit 6	99.57	96.43	96.43

## 6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of September 2021

Associated Unit/Stack	PM (tons)	SO <sub>2</sub> (tons)	NO <sub>x</sub> (tons)
Unit 1	33.49	2 063.49	904.22
Unit 2	14.51	2 214.75	1 146.49
Unit 5	78.03	1 978.89	1 126.15
Unit 6	231.18	3 565.21	1 777.31
<b>SUM</b>	<b>357.21</b>	<b>9 822.34</b>	<b>4 954.16</b>

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm <sup>3</sup> )
Unit 1	15	0	0	0	0	31.13
Unit 2	30	0	0	0	0	9.47
Unit 5	19	3	0	0	3	60.49
Unit 6	19	8	2	0	10	121.54
<b>SUM</b>	<b>83</b>	<b>11</b>	<b>2</b>	<b>0</b>	<b>13</b>	

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

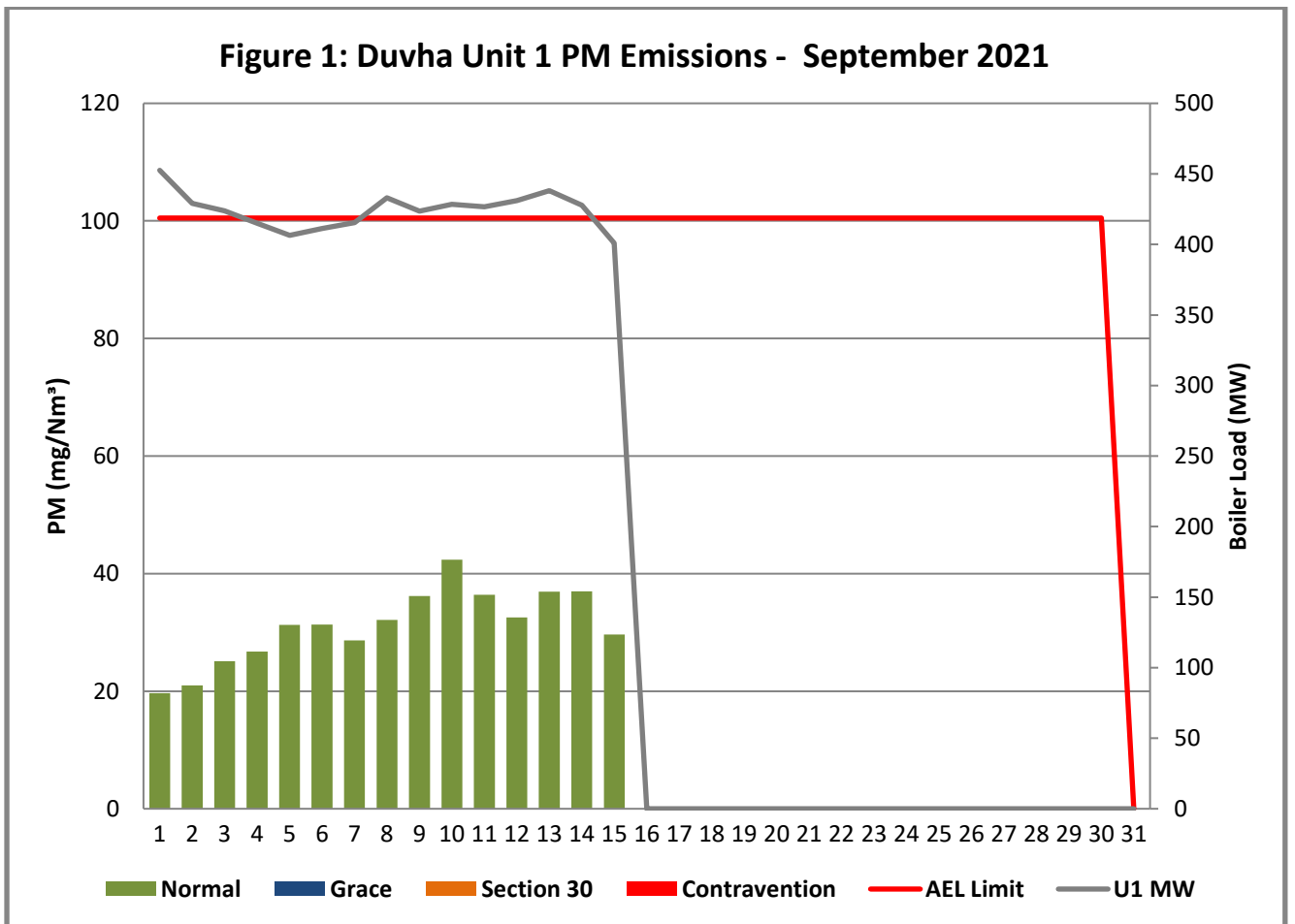
Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO <sub>x</sub> (mg/Nm <sup>3</sup> )
Unit 1	15	0	0	0	0	1 918.85
Unit 2	30	0	0	0	0	1 443.23
Unit 5	23	0	0	0	0	1 420.77
Unit 6	30	0	0	0	0	1 751.13
<b>SUM</b>	<b>98</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

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

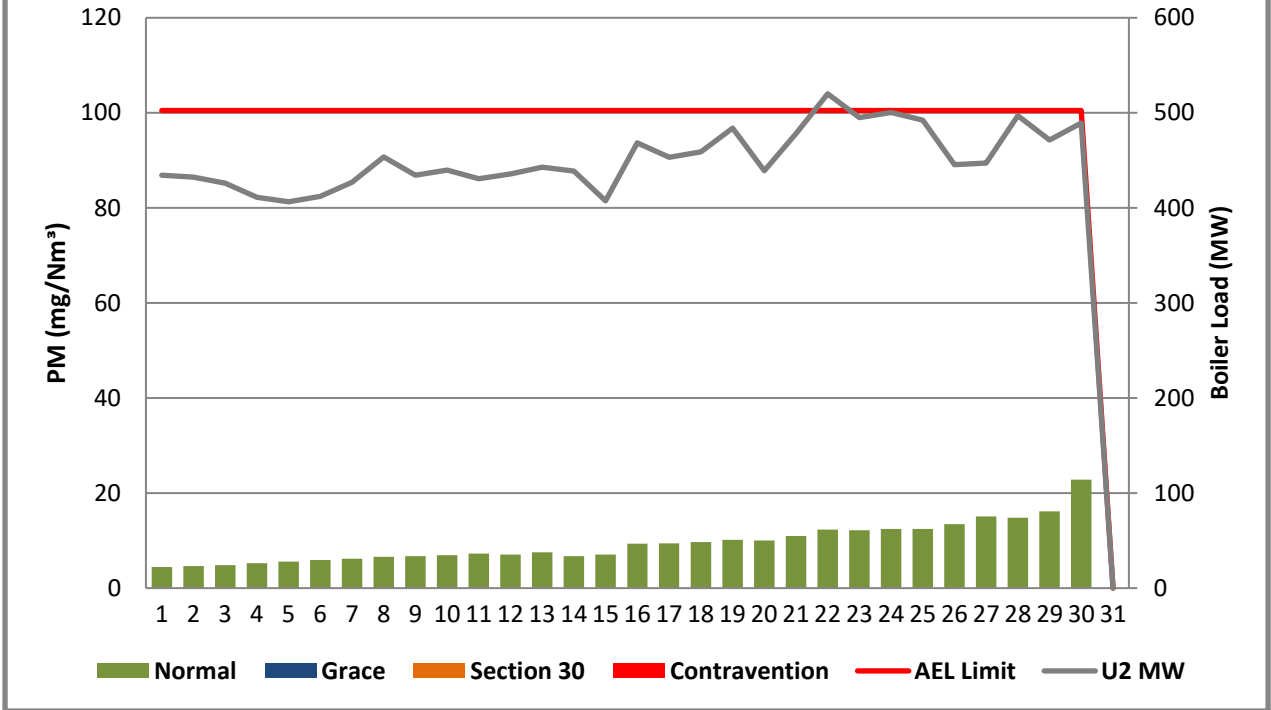
Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO <sub>x</sub> (mg/Nm <sup>3</sup> )
Unit 1	15	0	0	0	0	840.60
Unit 2	30	0	0	0	0	747.66
Unit 5	23	0	0	0	0	793.1
Unit 6	30	0	0	0	0	873.7
<b>SUM</b>	<b>98</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

Table 6.5: Legend Description

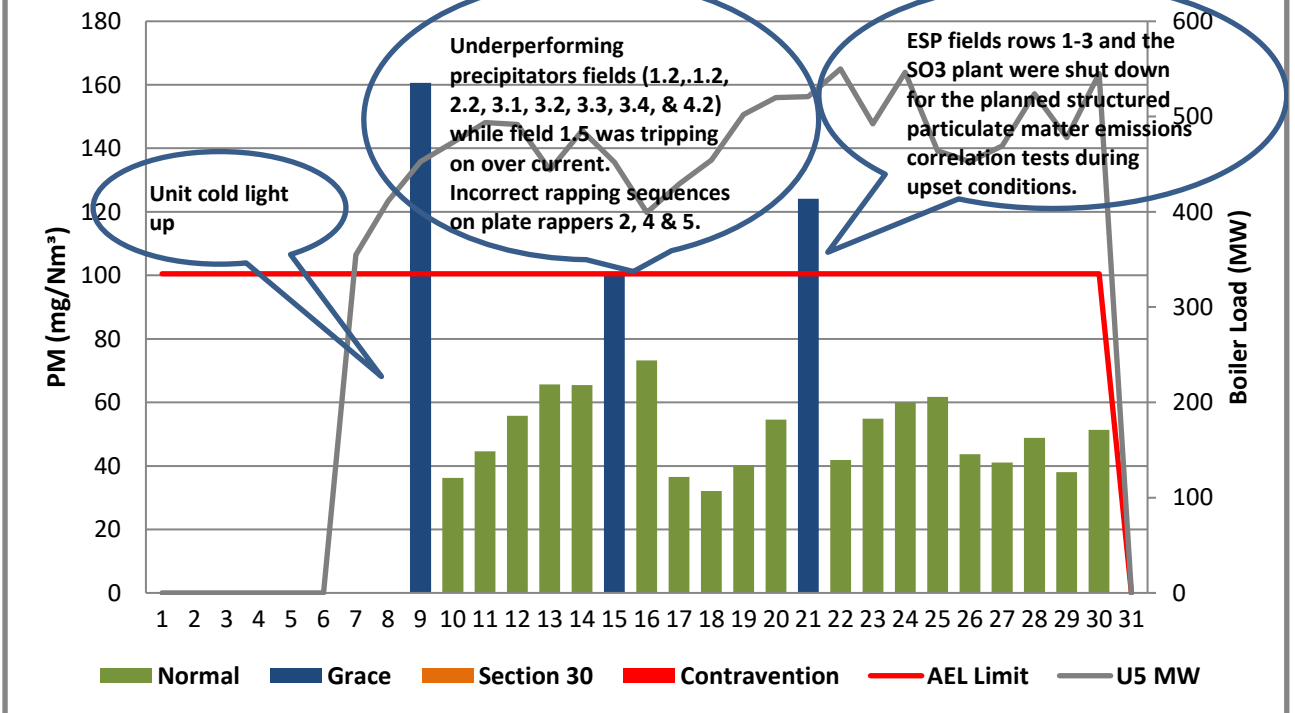
Condition	Colour	Description
Normal	Green	Emissions below Emission Limit Value (ELV)
Grace	Blue	Emissions above the ELV during grace period
Section 30	Orange	Emissions above ELV during a NEMA S30 incident
Contravention	Red	Emissions above ELV but outside grace or S30 incident conditions

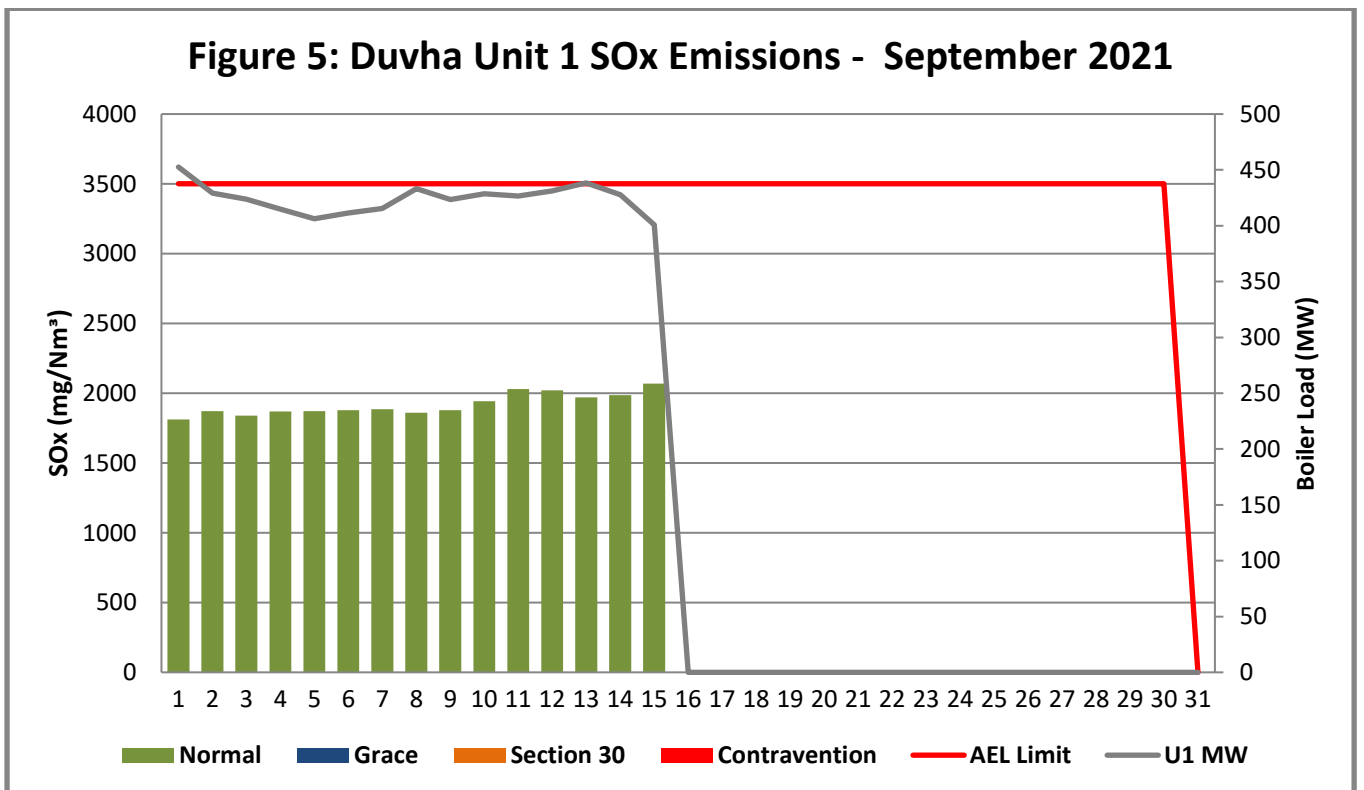
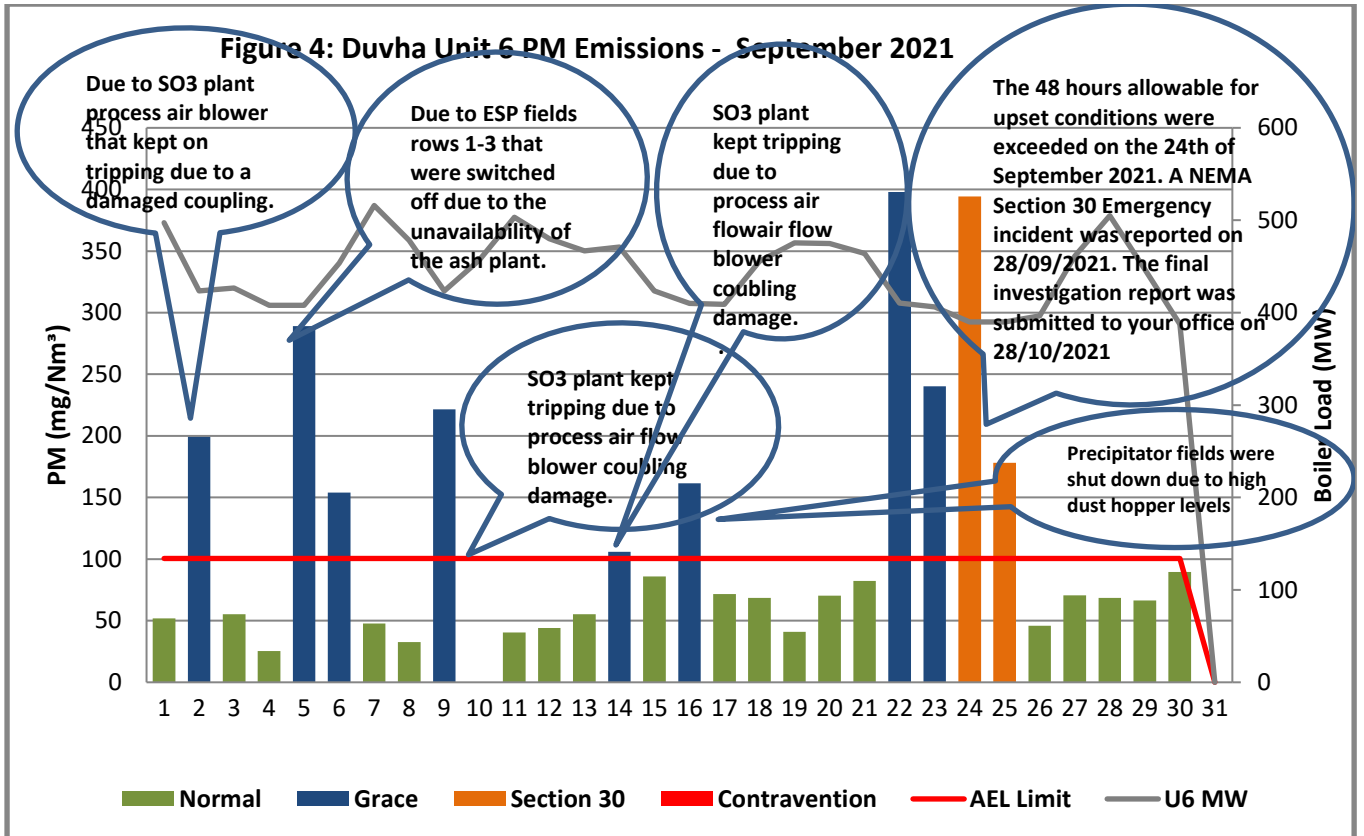


**Figure 2: Duvha Unit 2 PM Emissions - September 2021**

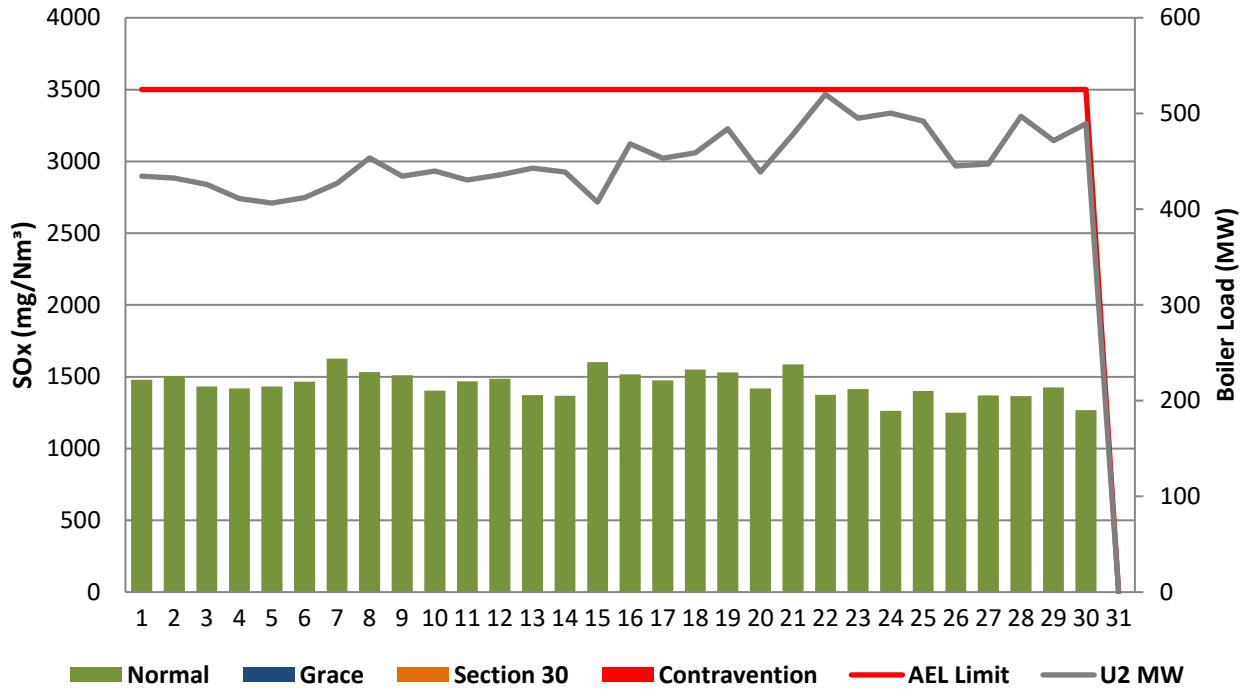


**Figure 3: Duvha Unit 5 PM Emissions - September 2021**

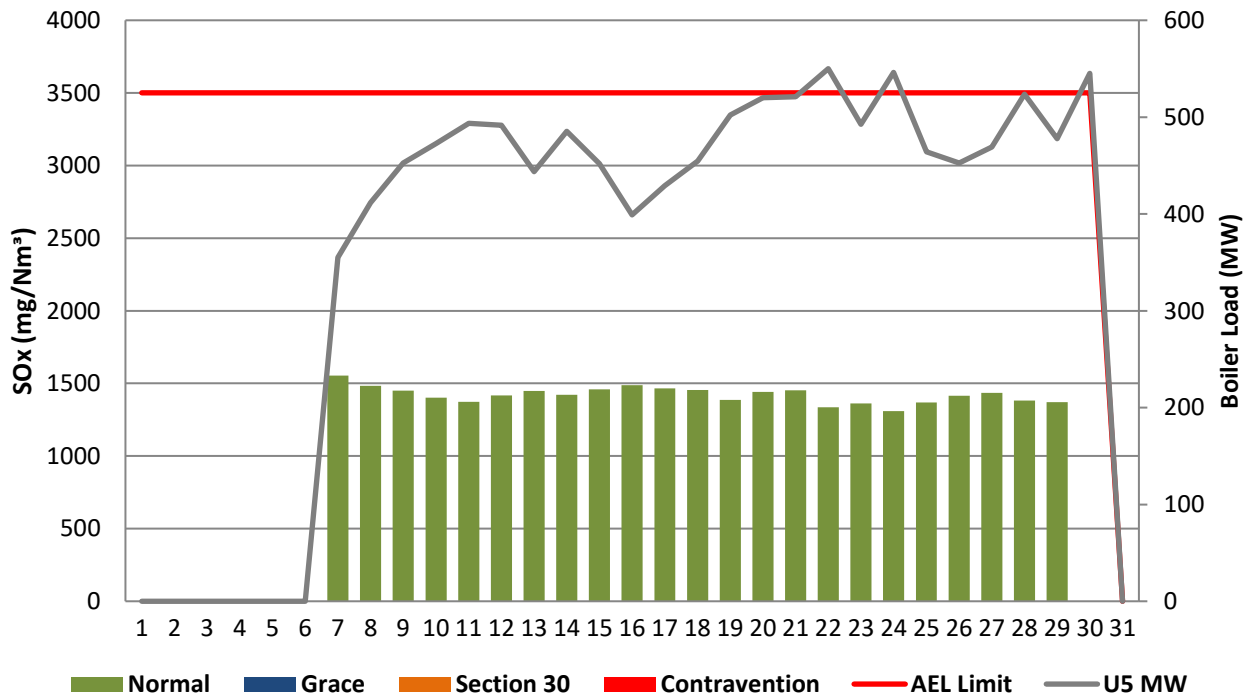




**Figure 6: Duvha Unit 2 SOx Emissions - September 2021**

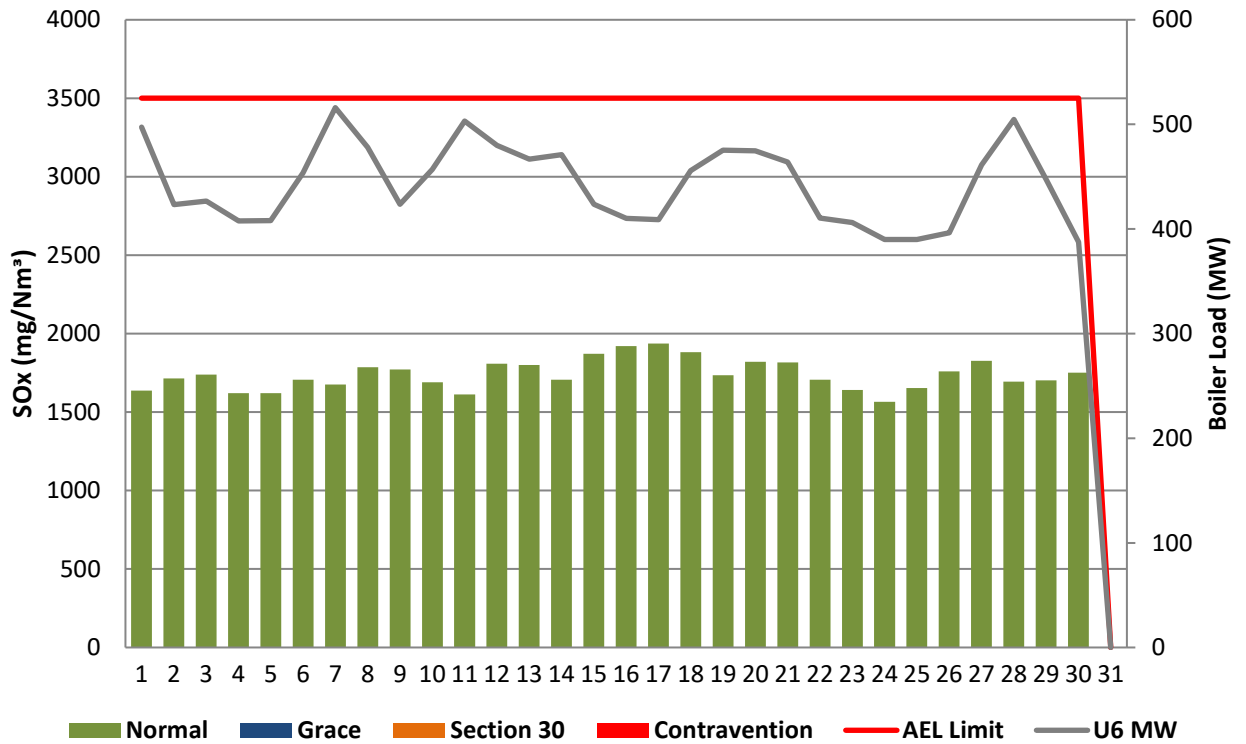


**Figure 7: Duvha Unit 5 SOx Emissions - September 2021**

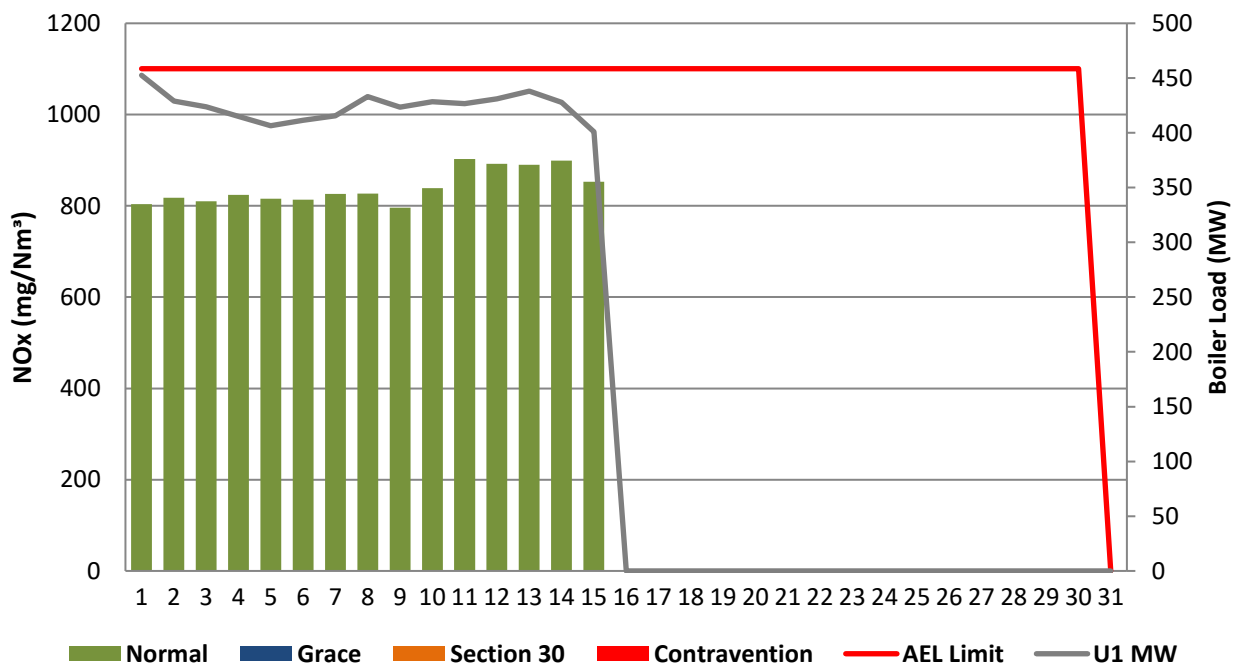




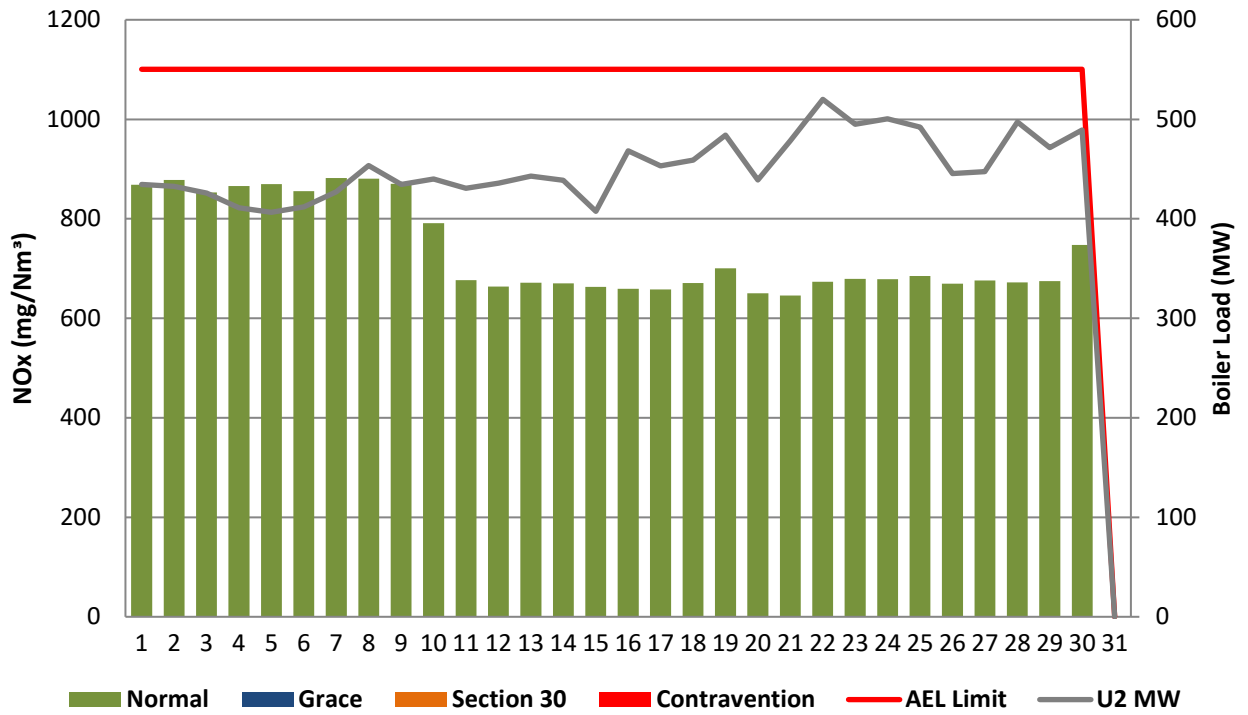
**Figure 8: Duvha Unit 6 SOx Emissions - September 2021**



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



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



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

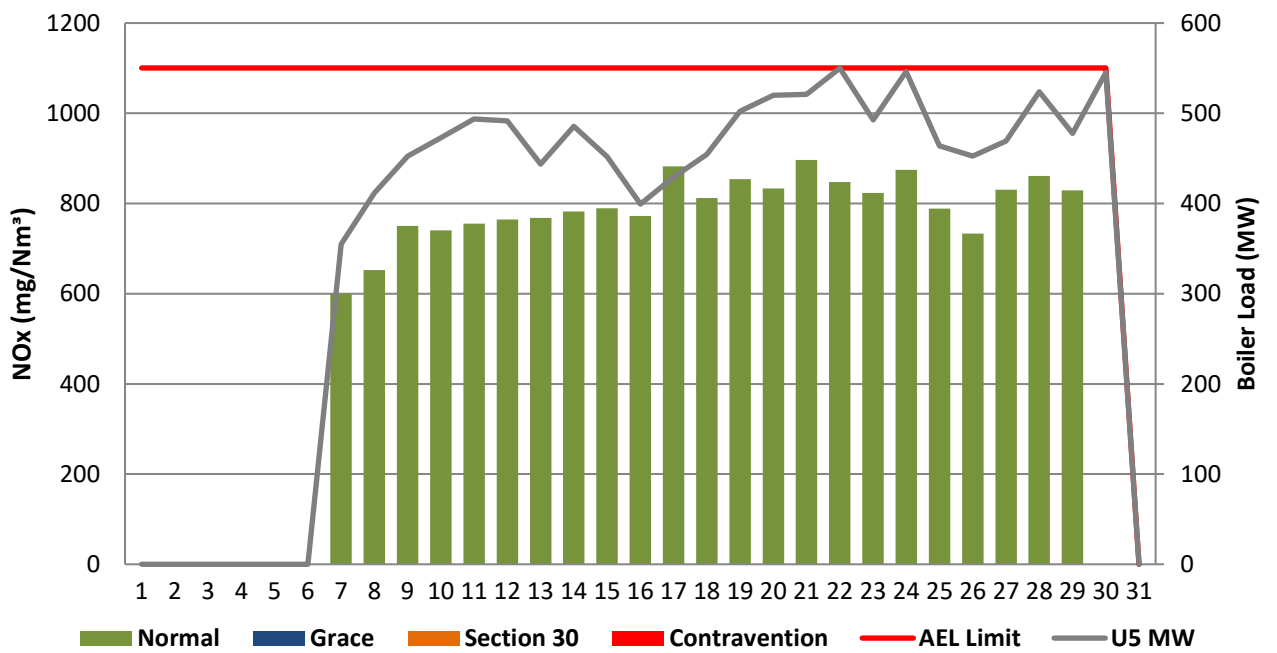
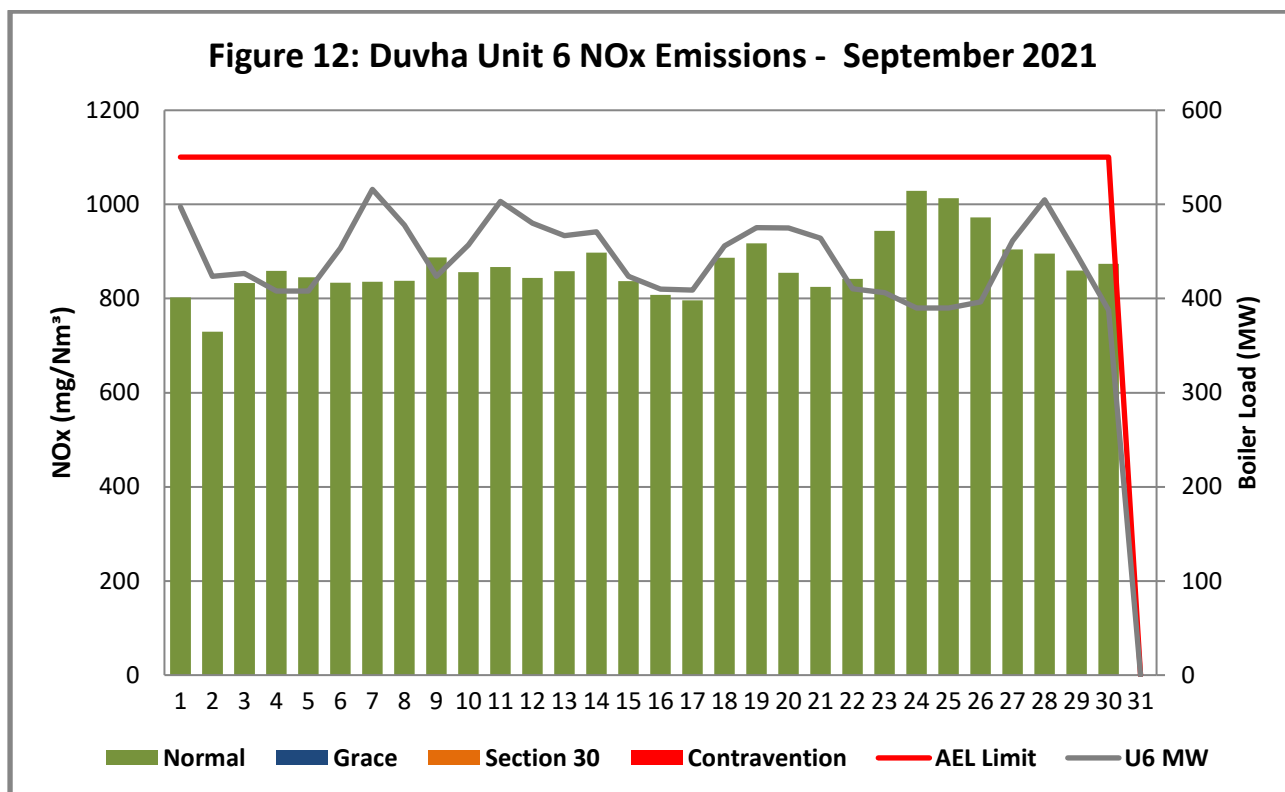


Figure 12: Duvha Unit 6 NOx Emissions - September 2021



## 7 SHUT DOWN AND LIGHT UP INFORMATION

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

Unit No.1	<i>Event 1</i>	
Breaker Open (BO)	<i>11:55 pm</i>	<i>2021/09/15</i>
Draught Group (DG) Shut Down (SD)	<i>12:40 am</i>	<i>2021/09/16</i>
BO to DG SD (duration)	<i>00:00:45</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>	
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>3:10 pm</i>	<i>2021/09/08</i>
Synch. to Grid (or BC)	<i>7:35 pm</i>	<i>2021/09/08</i>
Fires in to BC (duration)	<i>00:04:25</i>	DD:HH:MM

Emissions below limit from BC (end date)	12:00 am	2021/09/10
Emissions below limit from BC (duration)	01:04:25	DD:HH:MM

Unit No.6	<i>Event 1</i>	
Breaker Open (BO)	6:50 pm	2021/09/09
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)	n/a	DD:HH:MM
Fires in time	n/a	n/a
Synch. to Grid (or BC)	12:15 am	2021/09/10
Fires in to BC (duration)	10:00:15	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)	n/a	DD:HH:MM

## 8 General

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

The SO3 plant utilization for Unit 6 was below the required threshold for the month of September 2021 due to failure of the SO3 plant sulphur flow meter. The sulphur flow meter was fixed.

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



Boiler Plant Engineering  
Manager

29/10/2021

Date



Environmental  
Manager

2021/11/02

Date



Engineering Manager

2021/11/04

Date

Compiled by: Environmental Officer

For: Nkangala District Municipality

Air Quality Officer

Copies: Eskom Environmental Management

D Herbst  
B  
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Group Technology Engineering

R  
Rampiar  
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Duvha Power Station:

Engineering  
Manager  
Operating  
Manager  
Maintenance  
Manager  
Production  
Manager  
Boiler Engineering Manager  
System Engineer  
Environmental  
Manager

**ADDENDUM TO MONTHLY EMISSIONS REPORT**

**9 COMPLAINTS REGISTER**

Table 9. Complaints for the month of September 2021

Source Code / Name	Root Cause Analysis	Calculation of Impacts / emissions associated with the incident	Dispersion modeling of pollutants where applicable	Measures implemented to prevent reoccurrence	Date measure will be implemented
No complaints were received during the month of September 2021.					

