Eskom

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Total number of pages: 14

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

GENERAL MANAGER

2021/08/31
DATE

Eskom

JULY 2021

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 Jul-2021**
	Coal	Tons	*1 400 000*	*523 500.76*
	Fuel Oil	Tons	*5 000*	*2919.46*
Production Rates	**Product / By-Product Name**	**Units**	**Maximum Production Capacity Permitted**	**Production Rate Jul-2021**
	Energy	GWh	*3600*	*881.45*
	Ash	Tons	*not specified*	*141135.80*

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	*0.6 TO >1.2*	*0.89*
Ash Content	%	*27 TO 30*	*26.96*

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

4 ABATEMET TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Minimum Control Efficiency	Efficiency JULY-2021	Minimum Utilization	Utilization JULY-2021
Unit 1	Fabric Filter Plant (FFP)	99%	99.72%	100%	100%
Unit 2	Fabric Filter Plant (FFP)	99%	99.82%	100%	100%
Unit 4	Electro Static Precipitator (ESP)	99.6%	Offload	100%	Offload
Unit 5	Electro Static Precipitator (ESP)	99.6%	99.82%	100%	100%
Unit 6	Electro Static Precipitator (ESP)	99.6%	99.78%	100%	100%
Unit 4	Chemithon (SO3)	99.6%	Offload	96%	Offload
Unit 5	Chemithon (SO3)	99.6%	100%	96%	97%
Unit 6	Chemithon (SO3)	99.6%	100%	96%	96%

5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO_2	NO
Unit 1	100.0	100.0	100.0
Unit 2	100.0	99.1	99.8
Unit 5	100.0	87.2	87.2
Unit 6	99.7	99.2	99.7

6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of July 2021

Associated Unit/Stack	PM (tons)	SO_2 (tons)	NO_x (tons)
Unit 1	58.1	2 640	1 158
Unit 2	45.7	1 355	1 024
Unit 5	84.1	2 367	1 444

Unit 6	77.3	2 802	1 335
SUM	265.2	9 164	4 961

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm³)
Unit 1	17	0	0	0	0	44.4
Unit 2	16	0	0	0	0	48.1
Unit 5	30	0	0	0	0	46.2
Unit 6	19	4	1	0	5	54.2
SUM	**82**	**4**	**1**	**0**	**5**	

Table 6.3: Operating days in compliance to SOx AEL Limit - July 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SOx (mg/Nm³)
Unit 1	17	0	0	0	0	2 027.0
Unit 2	18	0	0	0	0	1 201.0
Unit 5	28	0	0	0	0	1 394.7
Unit 6	28	0	0	0	0	1 668.5
SUM	**91**	**0**	**0**	**0**	**0**	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm³)
Unit 1	17	0	0	0	0	887.3
Unit 2	18	0	0	0	0	907.4
Unit 5	28	0	0	0	0	845.9
Unit 6	28	0	0	0	0	804.7
SUM	**91**	**0**	**0**	**0**	**0**	

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

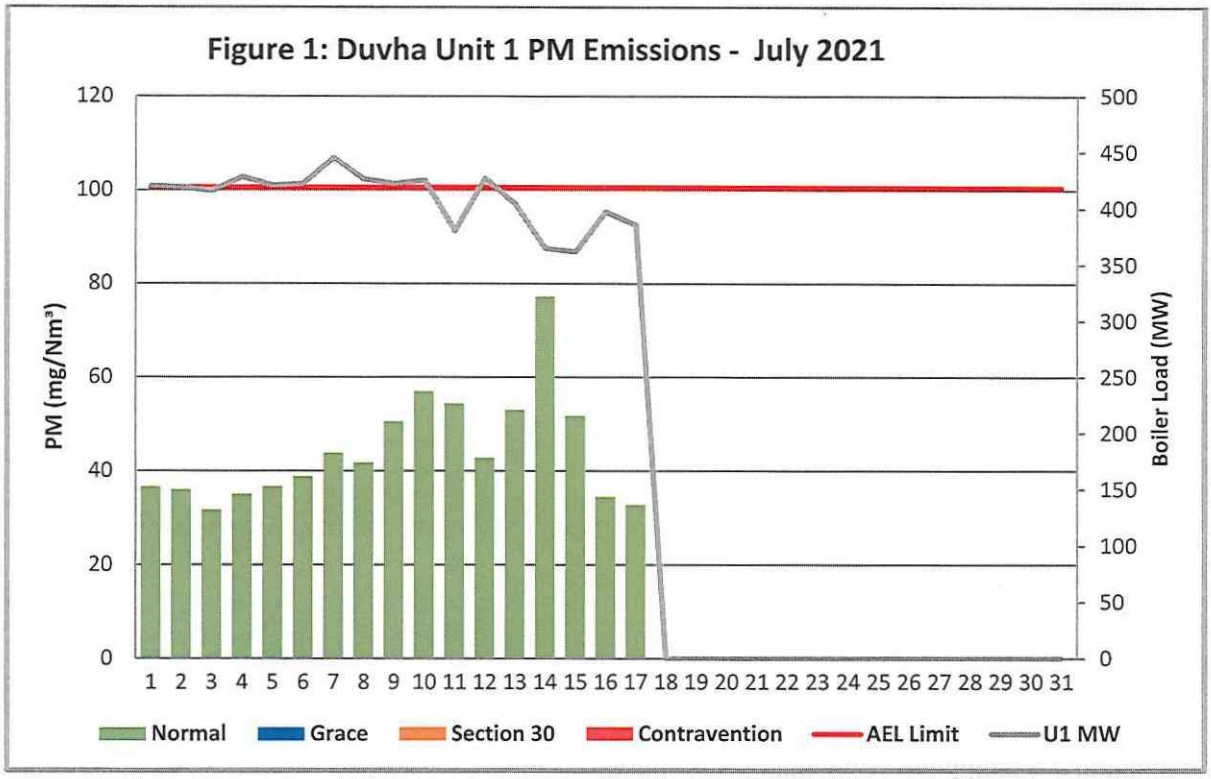


Figure 1: Duvha Unit 1 PM Emissions - July 2021
PM (mg/Nm³)
Boiler Load (MW)
120
100
80
60
40
20
0
500
450
400
350
300
250
200
150
100
50
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Normal
Grace
Section 30
Contravention
AEL Limit
U1 MW

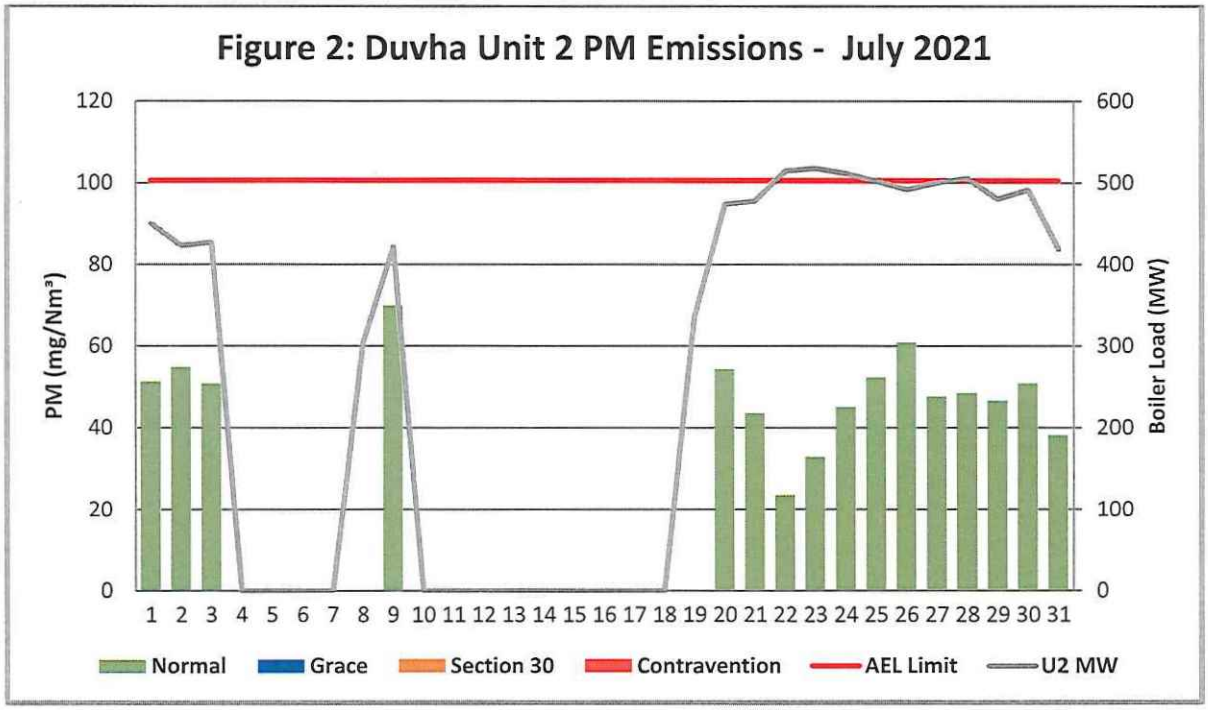


Figure 2: Duvha Unit 2 PM Emissions - July 2021
PM (mg/Nm³)
Boiler Load (MW)
120
100
80
60
40
20
0
600
500
400
300
200
100
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Normal
Grace
Section 30
Contravention
AEL Limit
U2 MW

Figure 3: Duvha Unit 5 PM Emissions - July 2021

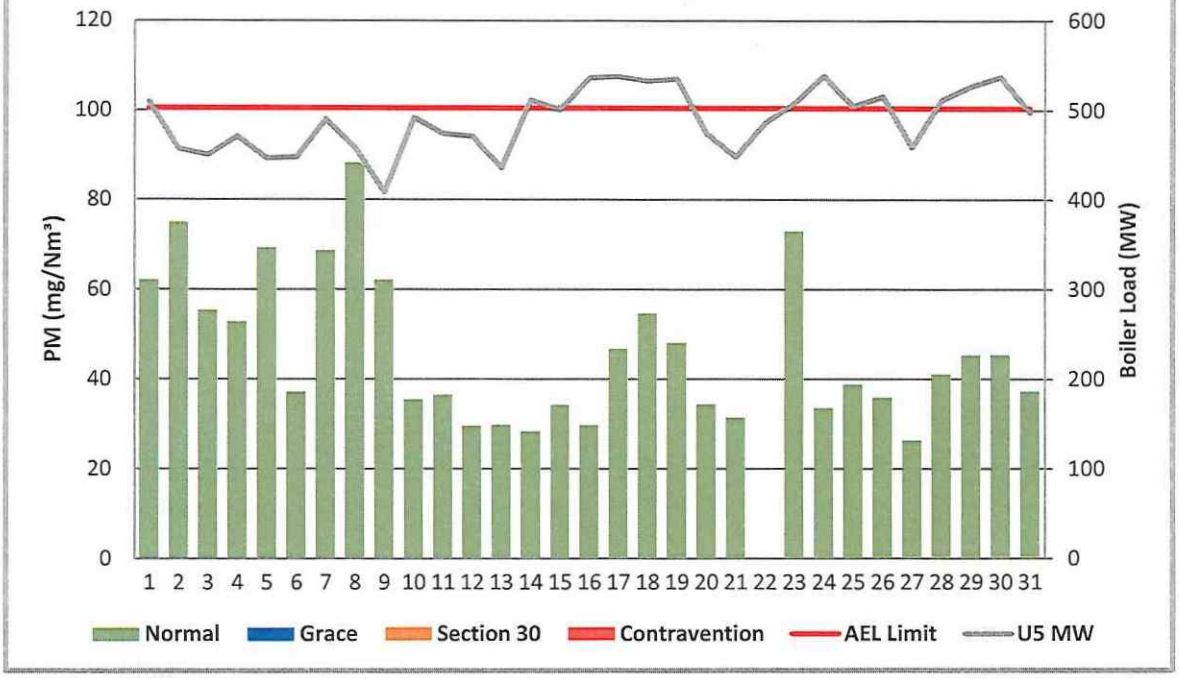


Figure 4: Duvha Unit 6 PM Emissions - July 2021

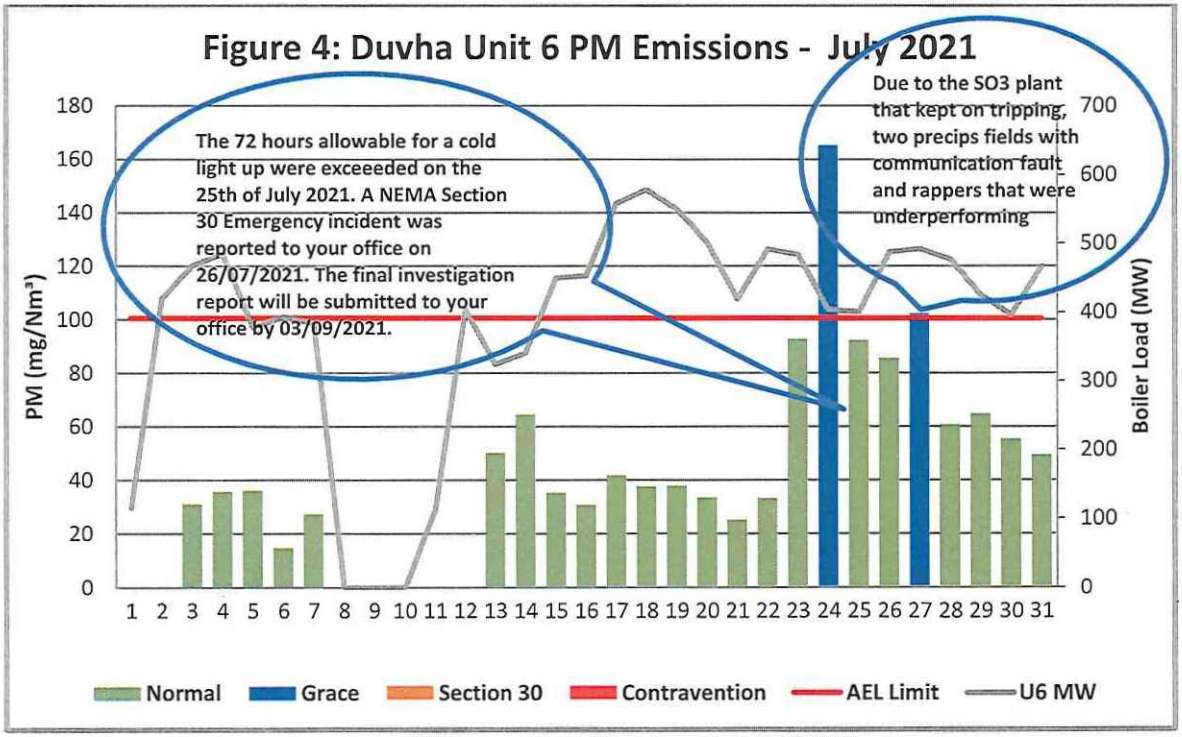


Figure 5: Duvha Unit 1 SOx Emissions - July 2021

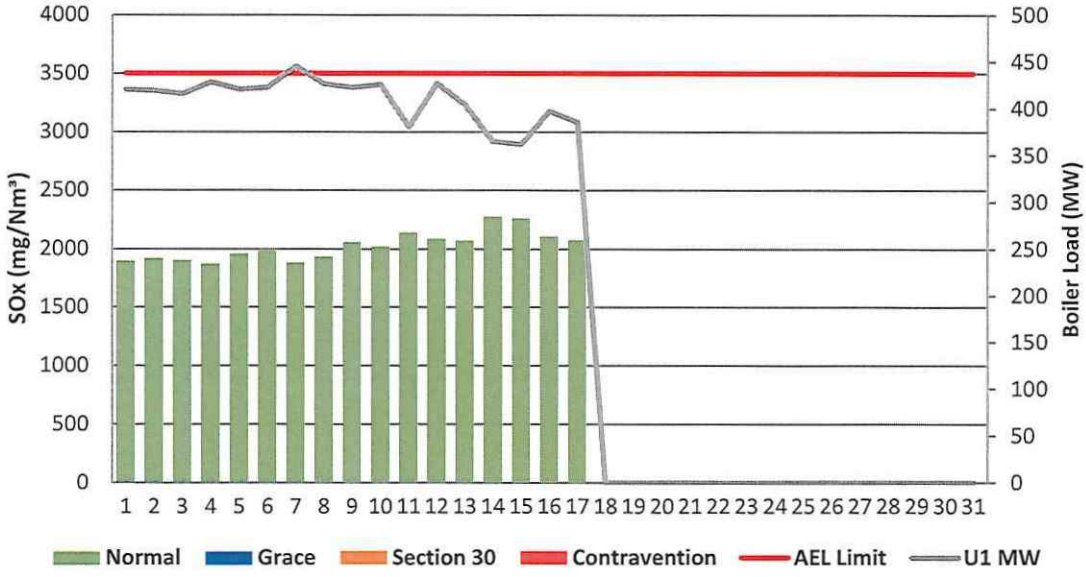


Figure 6: Duvha Unit 2 SOx Emissions - July 2021

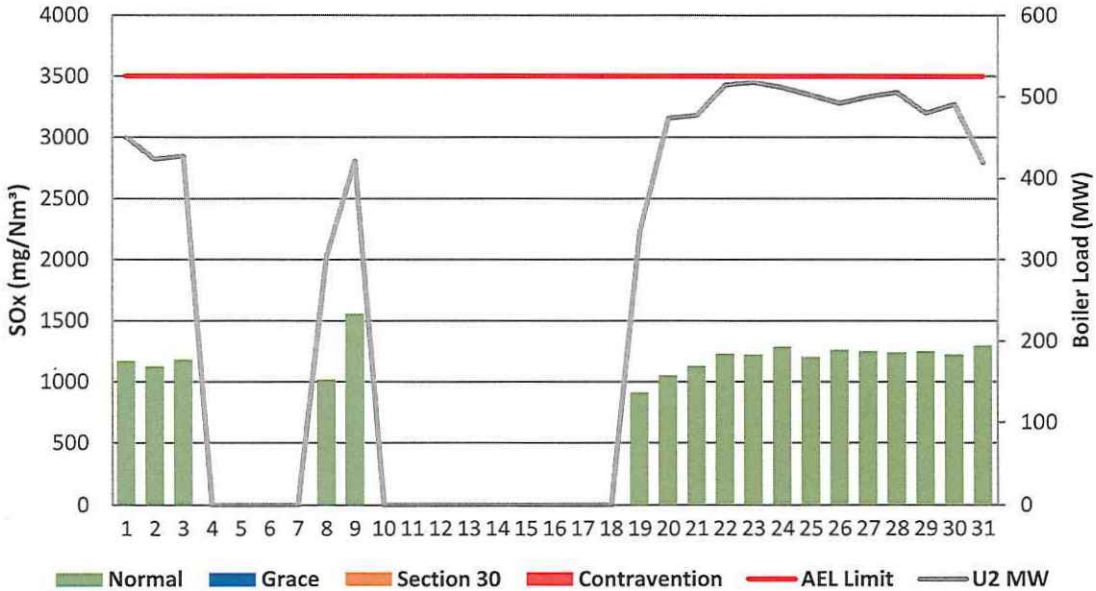


Figure 7: Duvha Unit 5 SOx Emissions - July 2021

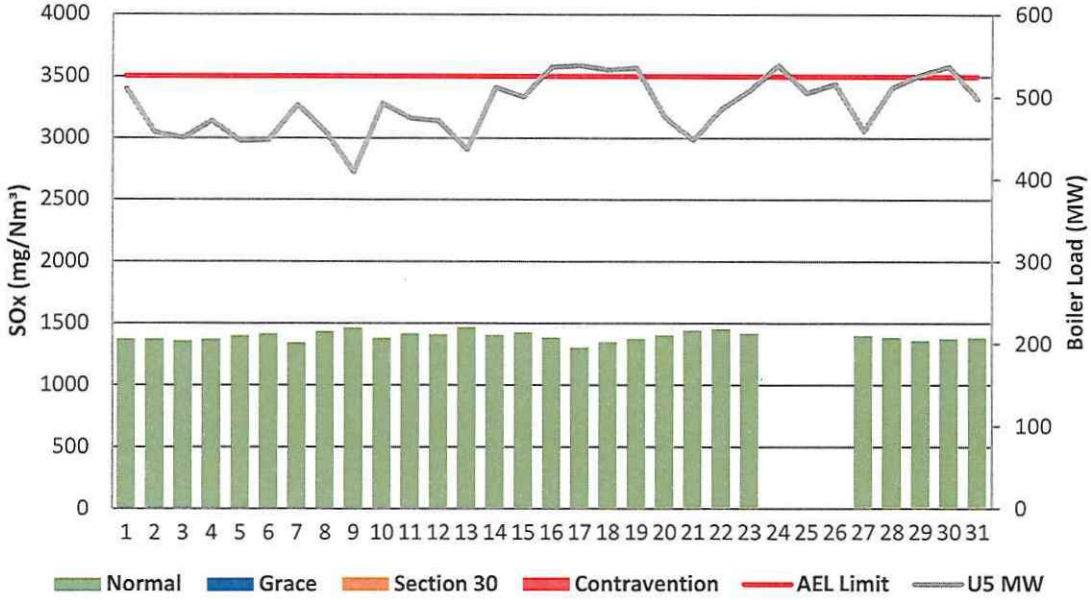


Figure 8: Duvha Unit 6 SOx Emissions - July 2021

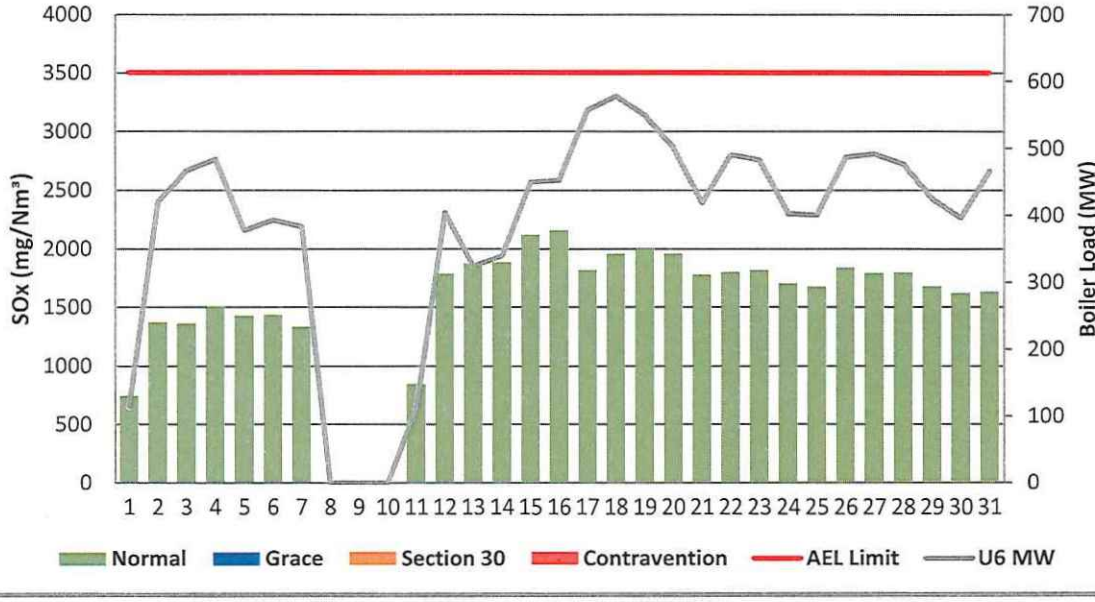


Figure 9: Duvha Unit 1 NOx Emissions - July 2021

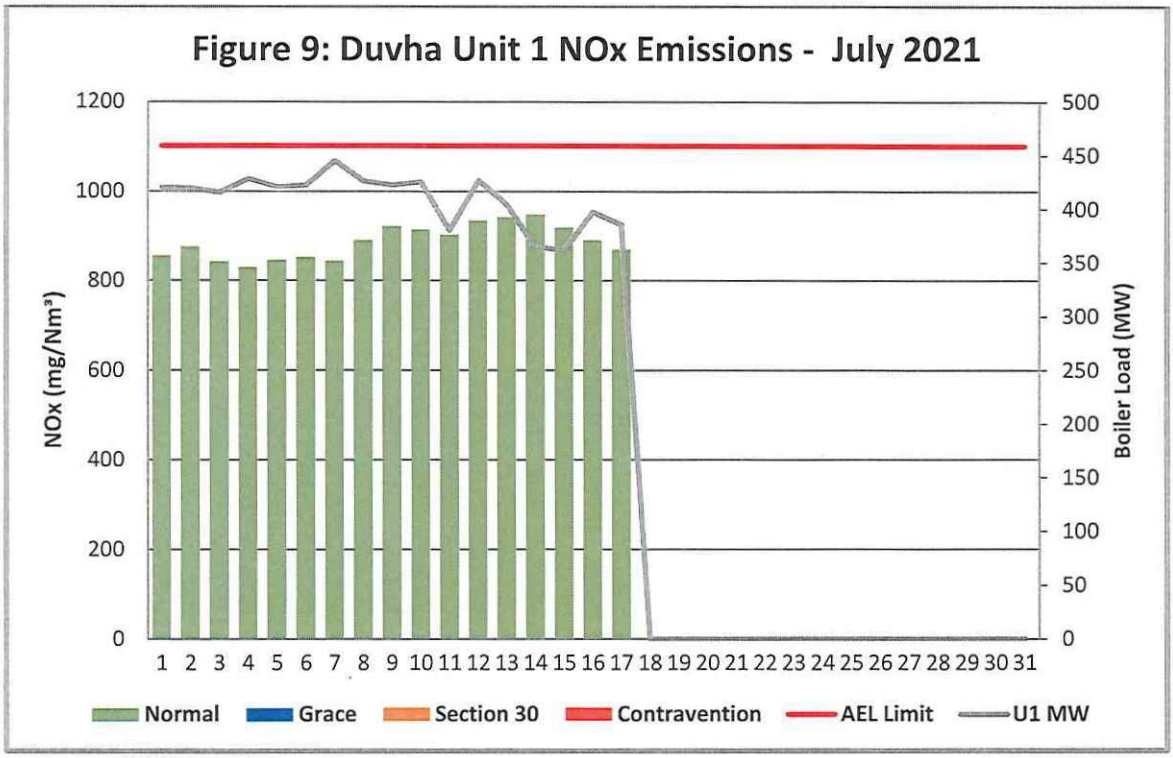


Figure 10: Duvha Unit 2 NOx Emissions - July 2021

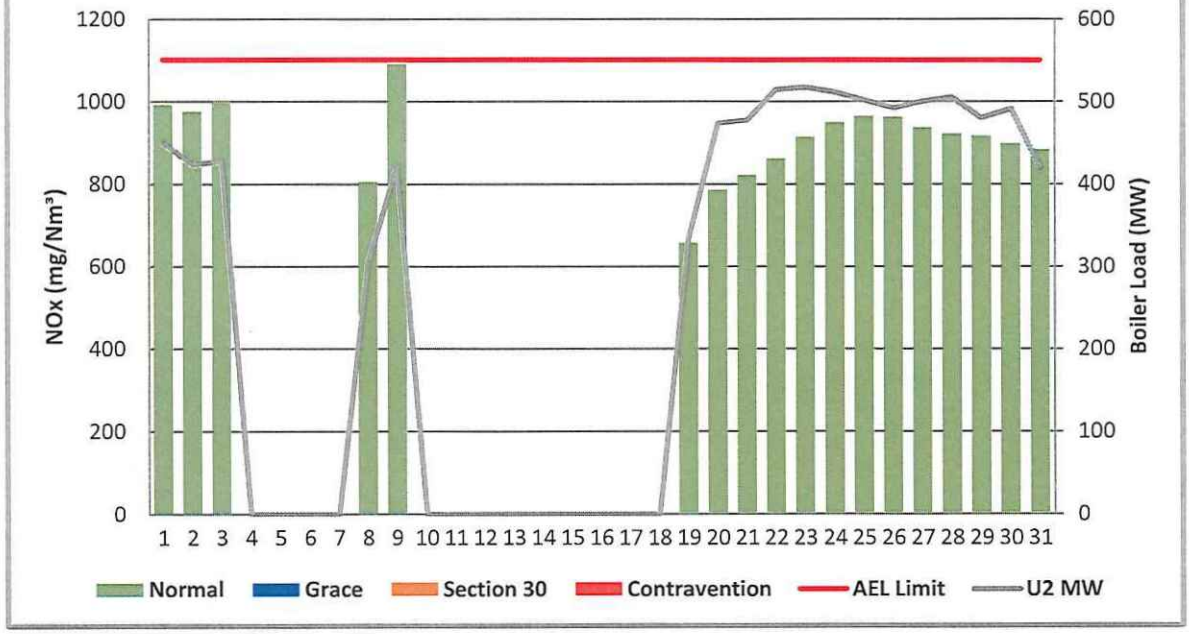


Figure 11: Duvha Unit 5 NOx Emissions - July 2021

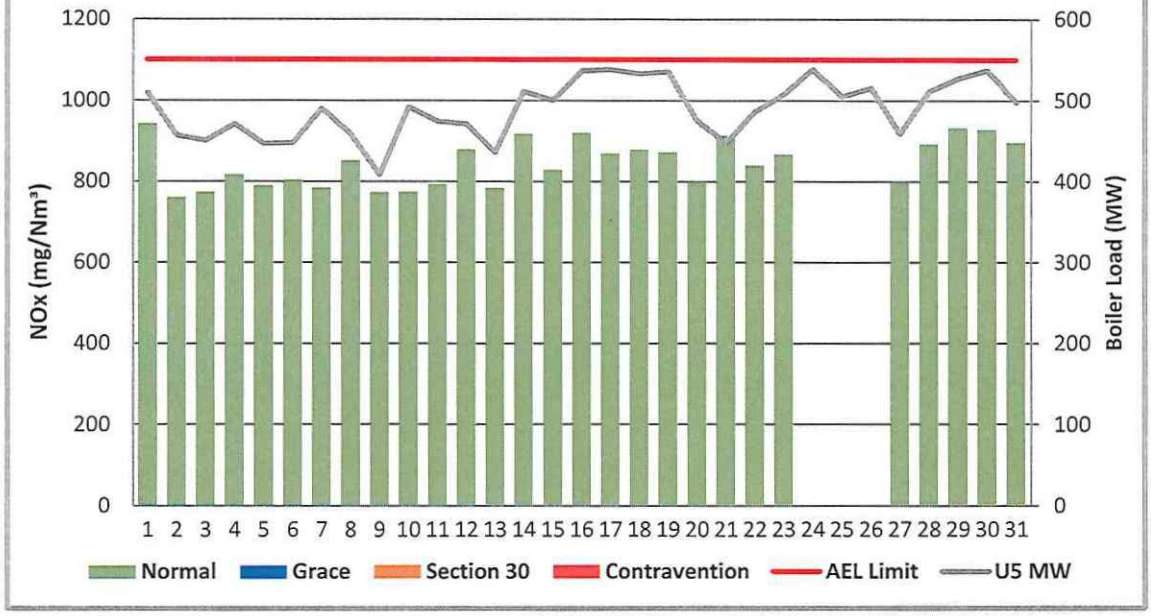
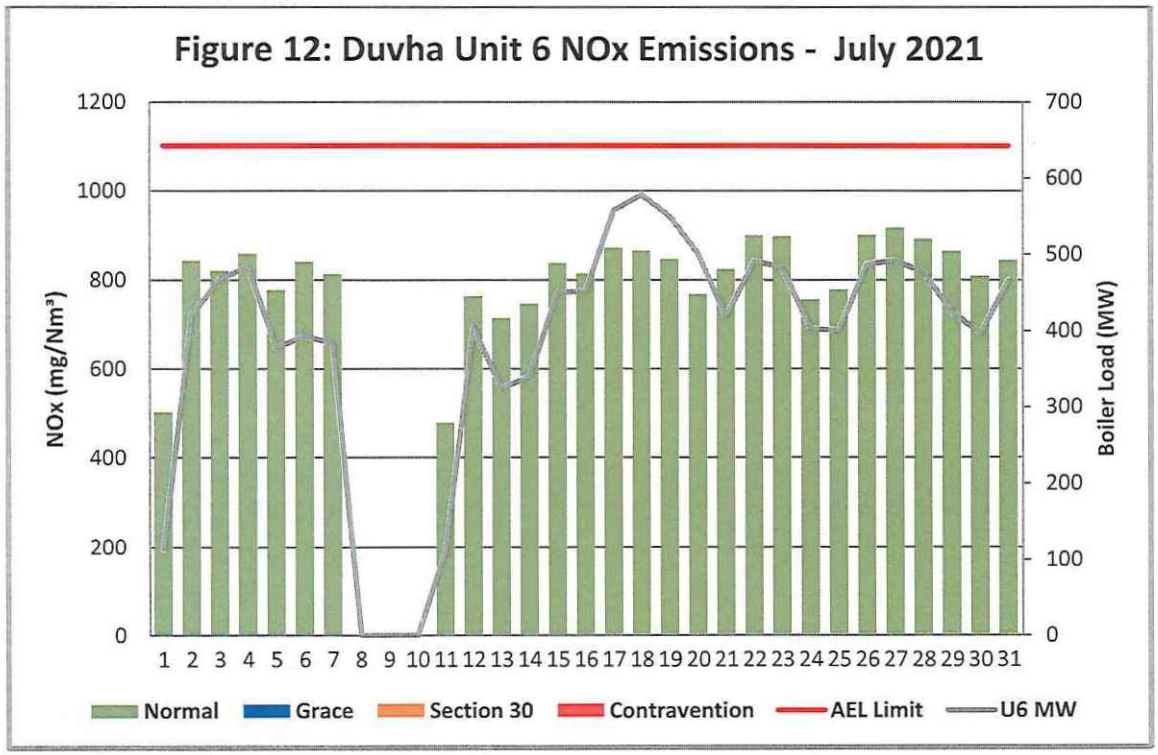


Figure 12: Duvha Unit 6 NOx Emissions - July 2021



7 SHUT DOWN AND LIGHT UP INFORMATION

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

Unit No.1	Event 1	
Breaker Open (BO)	4:50 pm	2021/07/17
Draught Group (DG) Shut Down (SD)	DG did not trip or SD	DG did not trip or SD
BO to DG SD (duration)	n/a	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.2	Event 1		Event 2	
Breaker Open (BO)	9:35 pm	2021/07/03	9:20 pm	2021/07/09
Draught Group (DG) Shut Down (SD)	11:20 am	2021/07/04	2:10 pm	2021/07/10
BO to DG SD (duration)	00:13:45	DD:HH:MM	00:16:50	DD:HH:MM
Fires in time	10:40 am	2021/07/08	3:20 am	2021/07/19
Synch. to Grid (or BC)	5:05 pm	2021/07/08	2:50 pm	2021/07/19
Fires in to BC (duration)	00:06:25	DD:HH:MM	00:11:30	DD:HH:MM
Emissions below limit from BC (end date)	not > limit	not > limit	not > limit	not > limit
Emissions below limit from BC (duration)	n/a	DD:HH:MM	n/a	DD:HH:MM

Unit No.5	Event 1	
Breaker Open (BO)	11:45 am	2021/07/21
Draught Group (DG) Shut Down (SD)	7:50 pm	2021/07/21
BO to DG SD (duration)	00:08:05	DD:HH:MM
Fires in time	7:55 pm	2021/07/21
Synch. to Grid (or BC)	7:30 am	2021/07/22
Fires in to BC (duration)	00:11:35	DD:HH:MM
Emissions below limit from BC (end date)	12:00 am	2021/07/23
Emissions below limit from BC (duration)	00:16:30	DD:HH:MM

Unit No.6	Event 1		Event 2		Event 3		Event 4	
Breaker Open (BO)	BO previously	BO previously	5:45 am	2021/07/05	3:20 pm	2021/07/07	11:30 am	2021/07/21
Draught Group (DG) Shut Down (SD)	n/a	n/a	DG did not trip or SD	DG did not trip or SD	7:10 am	2021/07/11	DG did not trip or SD	DG did not trip or SD
BO to DG SD (duration)	n/a	DD:HH:MM	n/a	DD:HH:MM	03:15:50	DD:HH:MM	n/a	DD:HH:MM
Fires in time	2:55 pm	2021/07/01			10:50 pm	2021/07/11		
Synch. to Grid (or BC)	3:30 am	2021/07/02			3:45 am	2021/07/12		
Fires in to BC (duration)	00:12:35	DD:HH:MM		DD:HH:MM	00:04:55	DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	12:00 am	2021/07/03			12:00 am	2021/07/13		
Emissions below limit from BC (duration)	00:20:30	DD:HH:MM		DD:HH:MM	00:20:15	DD:HH:MM		DD:HH:MM

8 General

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

Unit 6 oxygen monitor was faulty and giving faulty readings. The average Oxygen Standard Reference Method value from QAL 2 report was 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

Boiler Plant Engineering Manager

30 Aug 2021
Date

Environmental Manager

2021/08/31
Date

Engineering Manager

31 Aug 2021
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

ADDENDUM TO MONTHLY EMISSIONS REPORT

9 COMPLAINTS REGISTER

Table 9 Complaints for the month of July 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 July 2021					

10 S30 INCIDENT OR LEGAL CONTRAVENTION REGISTER

To be completed in the case of a S30 incident or a legal contravention:

Unit no	Incident Start Date	Incident End Date	Incident Cause	Remedial action	S30 initial notification sent	Date S30 investigation report sent	Date DEA Acknowledgment	Date DEA Acceptable	Comments / Reference No.
Unit 6	25/07/2021	25/07/2021	Incident still under investigation Investigation will be completed and report submitted by 03 September 2021.		26/07/2021	Investigation report will submitted by 03 September 2021	Not yet received		