Eskom

Generation

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AND

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DUVHA POWER STATION

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

GENERAL MANAGER

2022/12/15
DATE

Eskom

MARCH 2022

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 Mar-2022
	Coal	Tons	*1 400 000*	*347 112.59*
	Fuel Oil	Tons	*5 000*	*3123.33*
Production Rates	**Product / By-Product Name**	**Units**	**Maximum Production Capacity Permitted**	**Production Rate Mar-2022**
	Energy	GWh	*3600*	*630.44*
	Ash	Tons	*not specified*	*92 227.82*

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	*0.6 TO >1.2*	*0.92*
Ash Content	%	*27 TO 30*	*26.57*

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	Efficiency Mar-2022	Technology Type	SO3 Utilization Mar-2022
Unit 4	*ESP + SO_3*	*99.5%*	*SO_3*	*86.6%*
Unit 5	*ESP + SO_3*	*99.7%*	*SO_3*	*99.0%*
Unit 6	*ESP + SO_3*	*99.5%*	*SO_3*	*100.0%*

***Note**: ESP and FFP plants does not have bypass mode operation, hence plant 100% Utilised.*

5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO_2	NO
Unit 4	*99.9*	*99.7*	*98.6*
Unit 5	*100.0*	*99.6*	*99.7*
Unit 6	*81.8*	*99.6*	*99.6*

Note: NOx emissions is measured as NO in PPM. Final NOx value is expressed as total NO_2

6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of March 2022

Associated Unit/Stack	PM (tons)	SO_2 (tons)	NO_x (tons)
Unit 4	83.2	1 405	774
Unit 5	112.2	3 041	1 460
Unit 6	116.3	1 760	929
SUM	311.71	6 205	3 162

Table 6.2: Operating days in compliance to PM AEL Limit - March 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm³)
Unit 4	7	7	0	0	7	146.9
Unit 5	27	3	0	0	3	56.4
Unit 6	12	8	0	0	8	100.1
SUM	**46**	**18**	**0**	**0**	**18**	

Table 6.3: Operating days in compliance to SOx AEL Limit - March 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SOx (mg/Nm³)
Unit 4	20	0	0	0	0	1 365.6
Unit 5	30	0	0	0	0	1 488.0
Unit 6	22	0	0	0	0	1 677.6
SUM	**72**	**0**	**0**	**0**	**0**	

Table 6.4: Operating days in compliance to NOx AEL Limit - March 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm³)
Unit 4	20	0	0	0	0	732.5
Unit 5	30	0	0	0	0	711.8
Unit 6	22	0	0	0	0	877.0
SUM	**72**	**0**	**0**	**0**	**0**	

Note: NOx emissions is measured as NO in PPM. Final NOx value is expressed as total NO_2

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 4 PM Emissions - March 2022

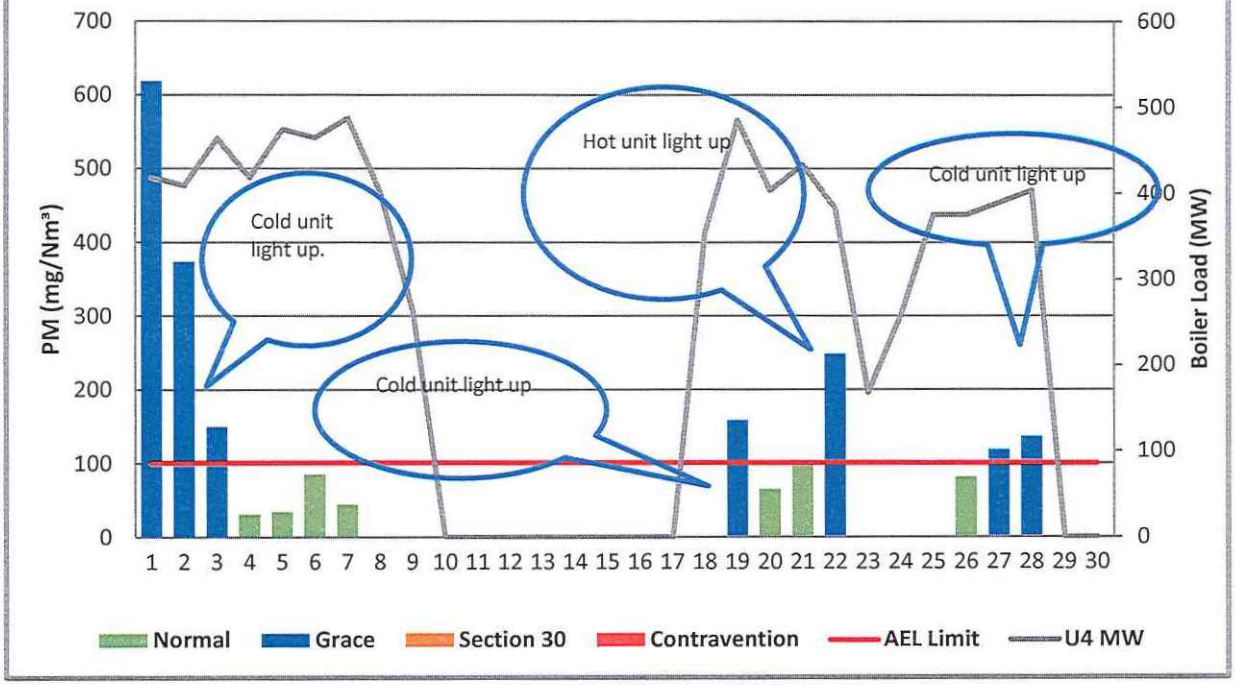


Figure 2: Duvha Unit 5 PM Emissions - March 2022

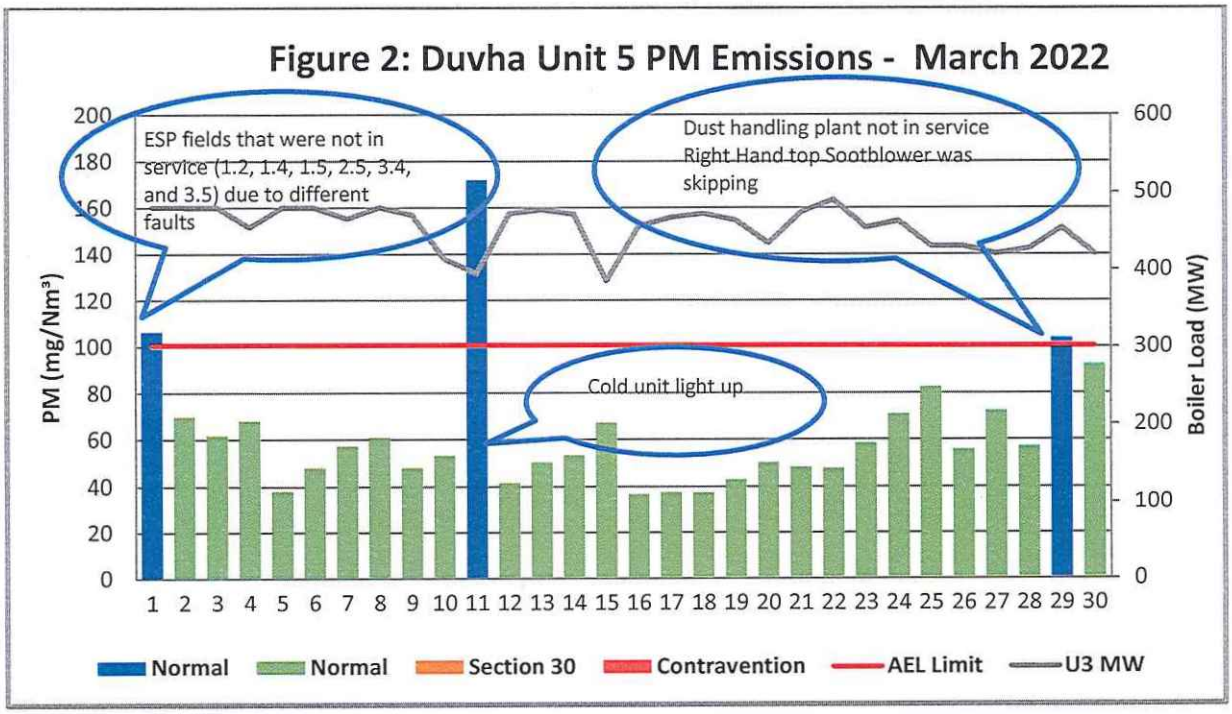


Figure 3: Duvha Unit 6 PM Emissions - March 2022

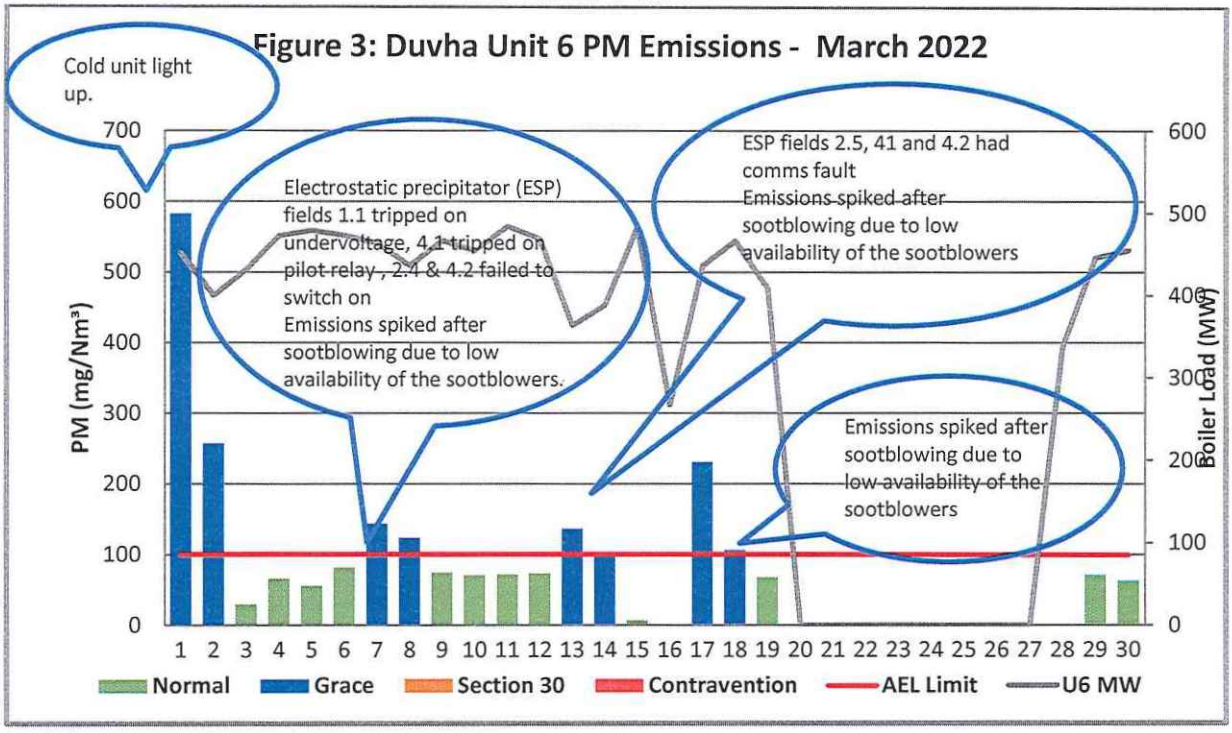


Figure 4: Duvha Unit 4 SOx Emissions - March 2022

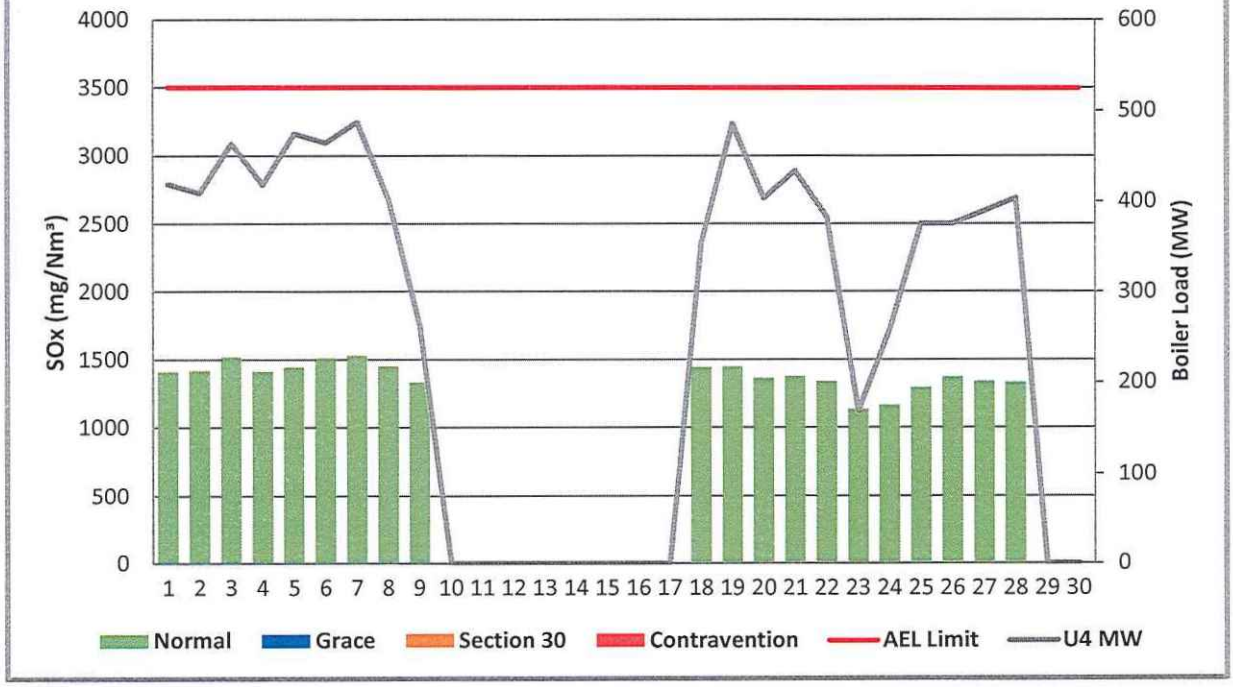


Figure 5: Duvha Unit 5 SOx Emissions - March 2022

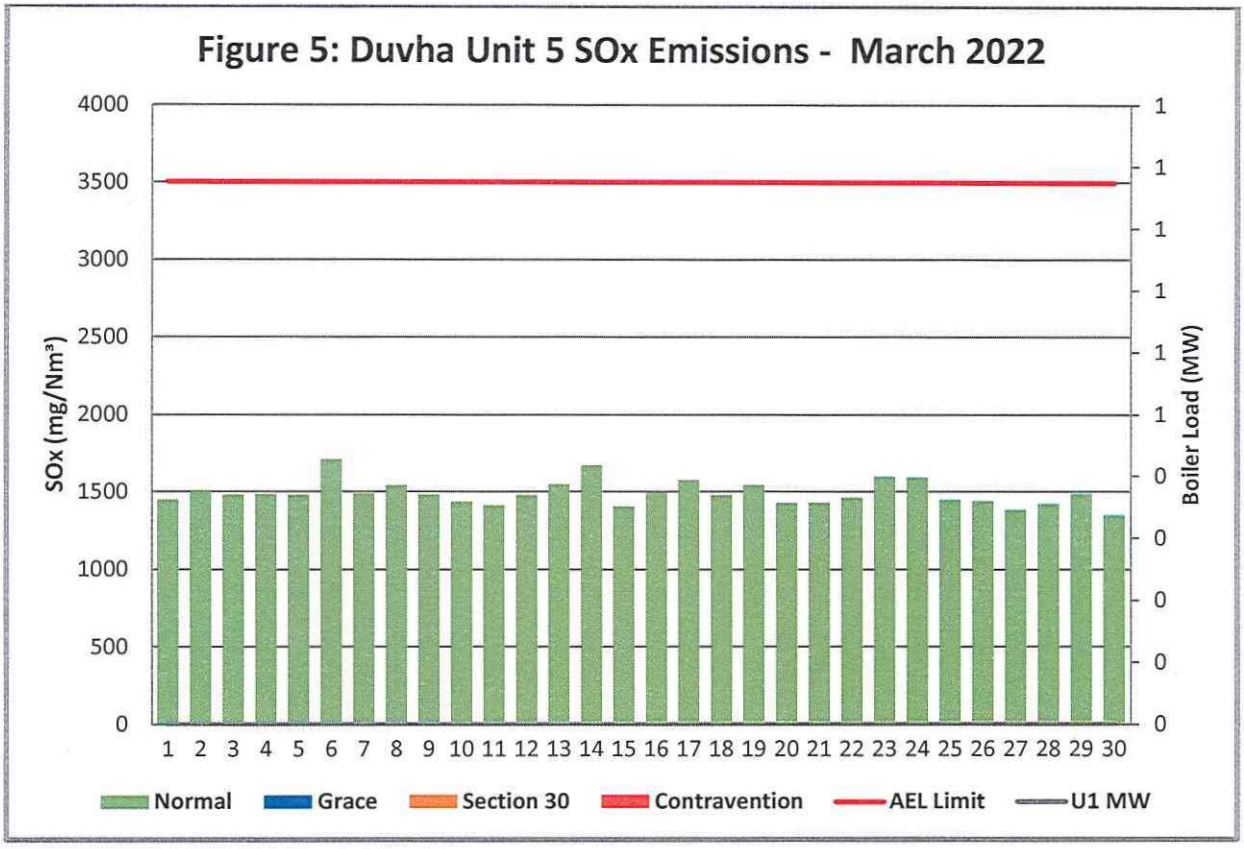


Figure 6: Duvha Unit 6 SOx Emissions - March 2022

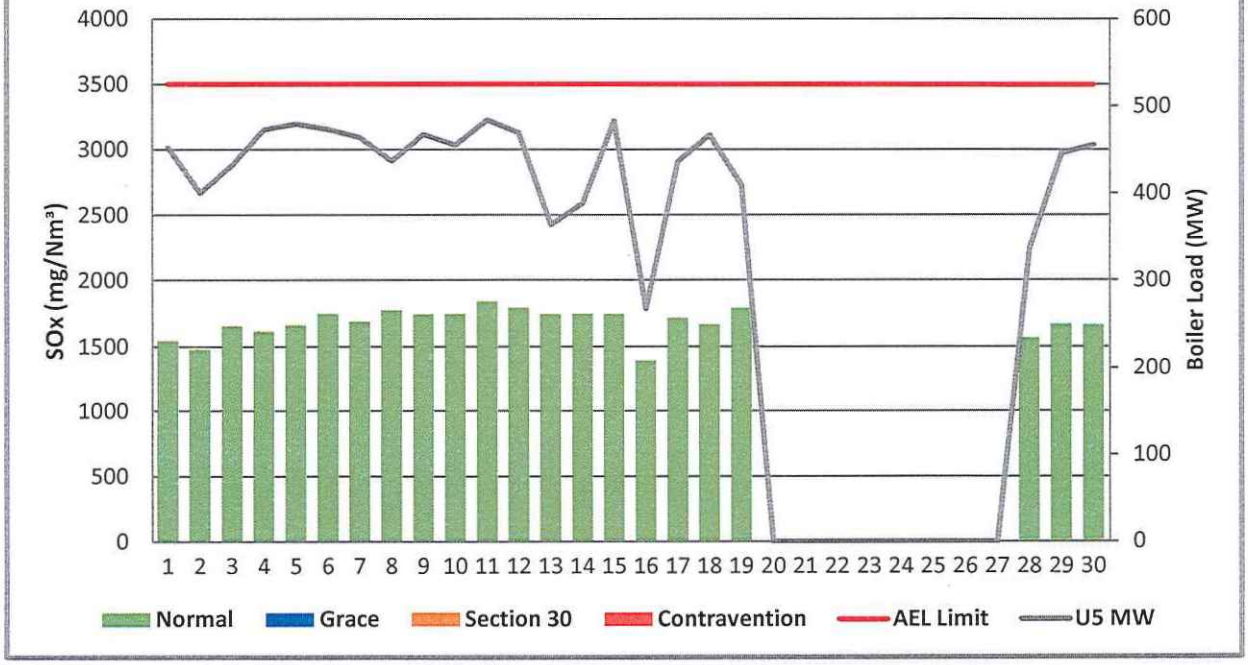


Figure 7: Duvha Unit 4 NOx Emissions - March 2022

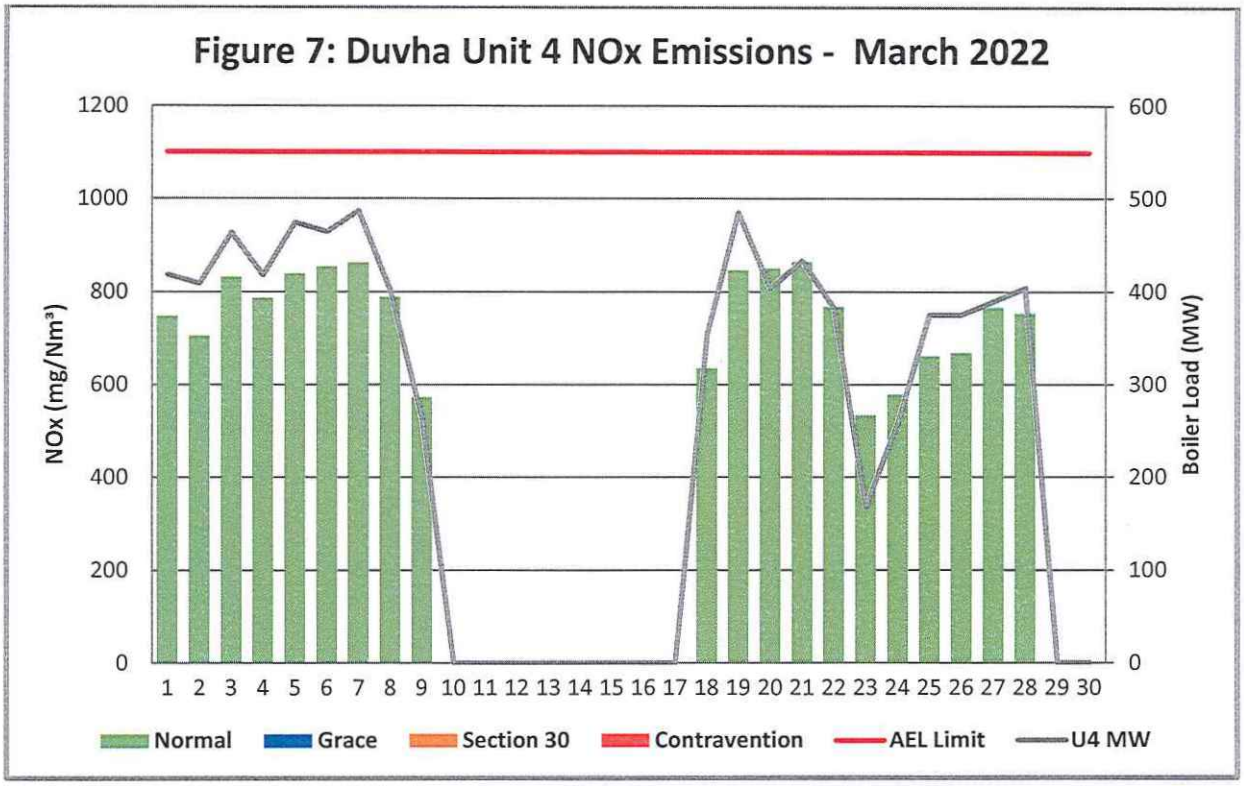
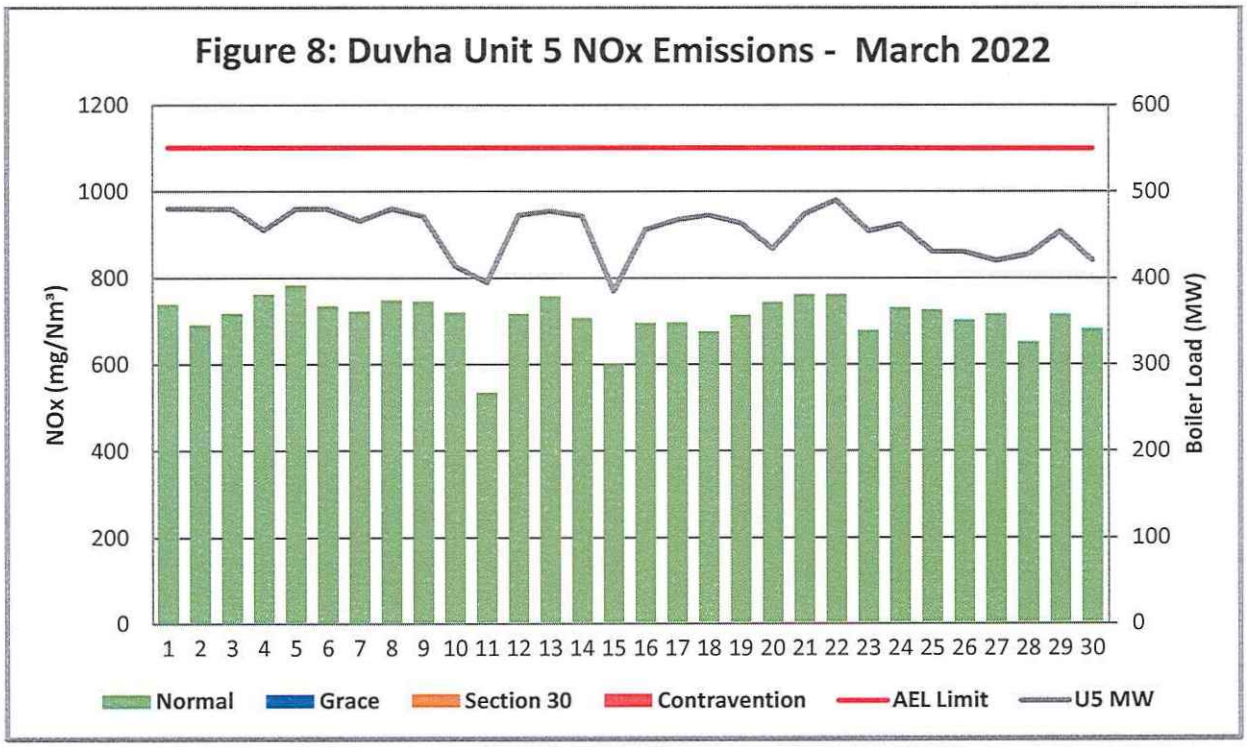
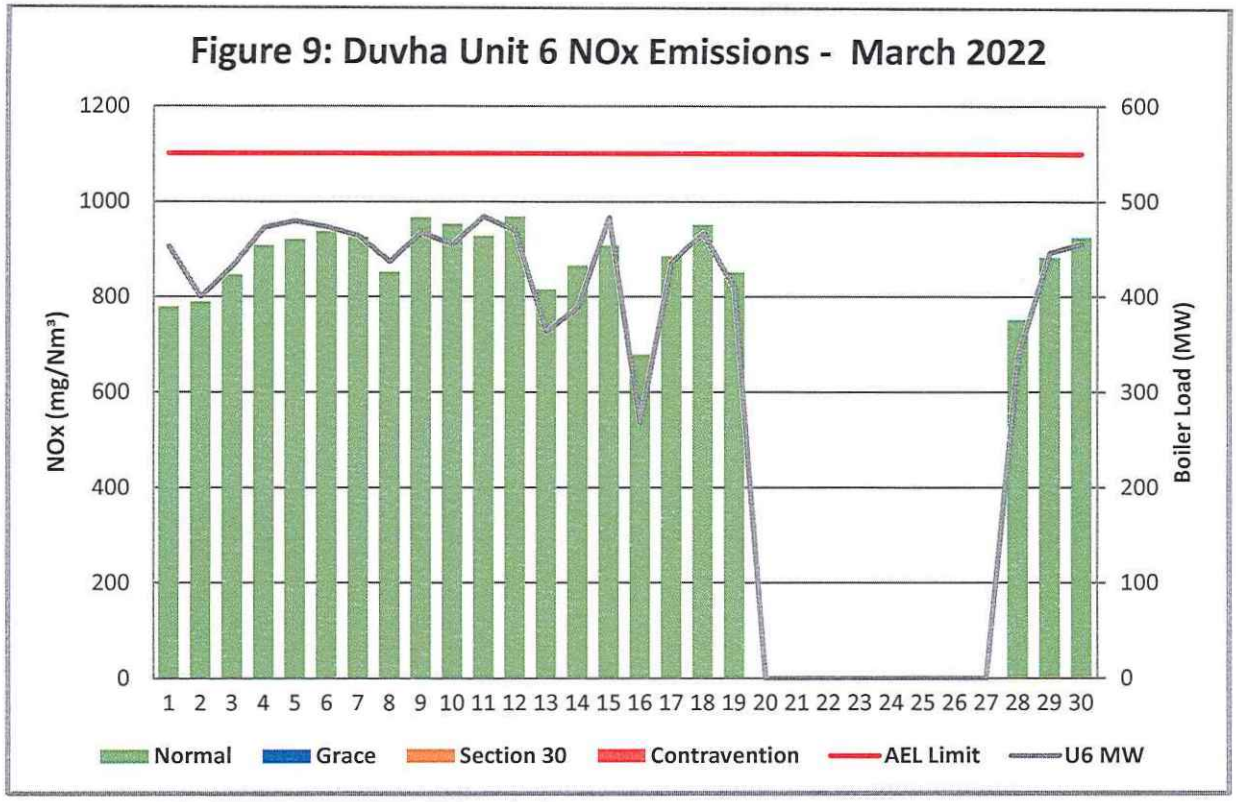


Figure 8: Duvha Unit 5 NOx Emissions - March 2022





7 SHUT DOWN AND LIGHT UP INFORMATION

Tables 7.1: Shut-down and light-up information for the month of March 2022

Unit No.4	Event 1		Event 2		Event 3		Event 4	
Breaker Open (BO)	*BO previously*	*BO previously*	*11:55 pm*	*2022/03/07*	*7:05 am*	*2022/03/22*	*12:55 pm*	*2022/03/28*
Draught Group (DG) Shut Down (SD)	*n/a*	*n/a*	*11:40 pm*	*2022/03/09*	*9:45 pm*	*2022/03/22*	*10:00 am*	*2022/03/29*
BO to DG SD (duration)	*n/a*	DD:HH:MM	*01:23:45*	DD:HH:MM	*00:14:40*	DD:HH:MM	*00:21:05*	DD:HH:MM
Fires in time			*6:40 pm*	*2022/03/17*	*10:20 pm*	*2022/03/24*		
Synch. to Grid (or BC)			*9:00 am*	*2022/03/18*	*3:55 am*	*2022/03/25*		
Fires in to BC (duration)		DD:HH:MM	*00:14:20*	DD:HH:MM	*00:05:35*	DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)			*6:00 am*	*2022/03/20*	*4:00 pm*	*2022/03/26*		
Emissions below limit from BC (duration)		DD:HH:MM	*01:21:00*	DD:HH:MM	*01:12:05*	DD:HH:MM		DD:HH:MM

Unit No.5	Event 1		Event 2	
Breaker Open (BO)	12:45 am	2022/03/11	12:25 am	2022/03/15
Draught Group (DG) Shut Down (SD)	DG did not trip or SD	DG did not trip or SD	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
Fires in time				
Synch. to Grid (or BC)				
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)				
Emissions below limit from BC (duration)		DD:HH:MM		DD:HH:MM

Unit No.6	Event 1		Event 2		Event 3	
Breaker Open (BO)	BO previously	BO previously	12:25 am	2022/03/15	5:35 am	2022/03/19
Draught Group (DG) Shut Down (SD)	n/a	n/a	9:40 am	2022/03/15	11:45 am	2022/03/19
BO to DG SD (duration)	n/a	DD:HH:MM	00:09:15	DD:HH:MM	00:06:10	DD:HH:MM
Fires in time			1:35 pm	2022/03/16	2:45 am	2022/03/28
Synch. to Grid (or BC)			7:45 pm	2022/03/16	7:30 am	2022/03/28
Fires in to BC (duration)		DD:HH:MM	00:06:10	DD:HH:MM	00:04:45	DD:HH:MM
Emissions below limit from BC (end date)			10:00 pm	2022/03/18	not > limit	not > limit
Emissions below limit from BC (duration)		DD:HH:MM	02:02:15	DD:HH:MM	n/a	DD:HH:MM

8 GENERAL

Units 2 and 3 were offload during the month of March 2022.

The averages Oxygen(O2) and Carbon Dioxide (CO2) data from the QAL 2 tests reports were used for reporting for Units 1, 5 and 6 due to poor performance of the O2 and CO2 gaseous monitors. These poor performances of the gaseous monitors were identified to be caused by the incorrect installation of O2 analyser. An action is being implemented to relocate all the units' O2 monitors to their own measurement port. This action will be completed no later than 31 December 2022.

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 and 10 Complaints and S30 Incidents Register

Refer to addendum A

Type text here

Boiler Plant Engineering Manager	14Dec2022 Date	Environmental Manager pp	15/12/2022 Date
Engineering Manager	2022/12/14 Date		

Compiled by:	Environmental Officer	
For:	Nkangala District Municipality	Air Quality Officer
Copies:	Generation Environmental Management	D Herbst B Mccourt
	Generation Compliance Management	R Rampiar
	Generation Asset Management	E Patel
	Duvha Power Station:	Engineering Manager Operating Manager Maintenance Manager Production Manager Boiler Engineering Manager System Engineer Environmental Manager

9 COMPLAINTS REGISTER

Table 9. Complaints for the month of March 2022

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 March 2022.					

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.
No Section 30 or Legal Contravention incurred during the month of March 2022.									