

**GROOTVLEI POWER STATION MONTHLY EMISSIONS REPORT**

Atmospheric Emission License GPS/0015/2015/F02


**1 RAW MATERIALS AND PRODUCTS**

Raw Materials and Products	Raw Material Type	Units	Maximum Permitted Consumption Rate	Consumption Rate Dec-2020
	Coal	Tons	650 000	189 085,8
	Fuel Oil	Tons	18 000	2418,87
Production Rates	Product / By-Product Name	Units	Maximum Production Capacity Permitted	Production Rate Dec-2020
	Energy	GWh	833,28	280,98
	Ash	Tons	300 000	55 098
	RE PM	kg/MWh	not specified	0,08

## 2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 to < 1.2	0,55
Ash Content	%	27 to < 32	29,14

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

Associated Unit/Stack	PM	SO <sub>2</sub>	NO
North	50	3500	1100
South	50	3500	1100

## 4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Dec-2020
Unit 1	<i>Fabric Filter Plant (FFP)</i>	99,954%
Unit 2	<i>Fabric Filter Plant (FFP)</i>	99,958%
Unit 3	<i>Fabric Filter Plant (FFP)</i>	99,955%
Unit 4	<i>Fabric Filter Plant (FFP)</i>	Unit Off-line
Unit 5	<i>Fabric Filter Plant (FFP)</i>	Unit Off-line
Unit 6	<i>Fabric Filter Plant (FFP)</i>	Unit Off-line

Note: Abatement plant does not have bypass mode operation, hence plant 100% Utilised.

## 5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO <sub>2</sub>	NO	CO <sub>2</sub>	O <sub>2</sub>
North	100,0	86,3	88,8	84,0	84,0
South					

## 6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of December-2020

Associated Unit/Stack	PM (tons)	SO <sub>2</sub> (tons)	NO <sub>2</sub> (tons)
Unit 1	7,00	291,6	183,3
Unit 2	6,67	294,9	175,8
Unit 3	8,39	354,1	213,5
Unit 4	0,00	0,0	0,0
Unit 5	0,00	0,0	0,0
Unit 6	0,00	0,0	0,0
<b>SUM</b>	<b>22,06</b>	<b>940,6</b>	<b>572,6</b>

Table 6.2: Operating days in compliance to PM AEL Limit - December 2020

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance	Average PM (mg/Nm <sup>3</sup> )
North	31	0	0	0	0	16,7
South	0	0	0	0	0	
<b>SUM</b>	<b>31</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

 Table 6.3: Operating days in compliance to SO<sub>x</sub> AEL Limit - December 2020

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance	Average SO <sub>x</sub> (mg/Nm <sup>3</sup> )
North	31	0	0	0	0	678,5
South	0	0	0	0	0	
<b>SUM</b>	<b>31</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

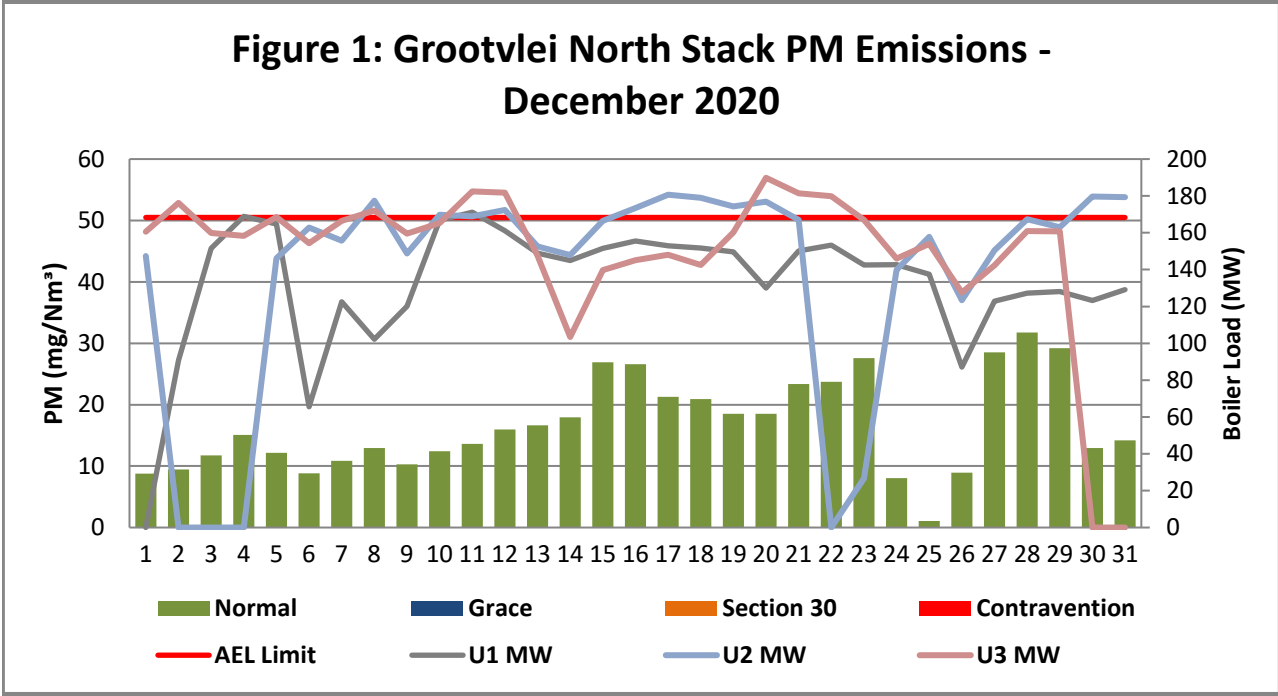
 Table 6.4: Operating days in compliance to NO<sub>x</sub> AEL Limit - December 2020

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance	Average NO <sub>x</sub> (mg/Nm <sup>3</sup> )
North	31	0	0	0	0	426,0
South	0	0	0	0	0	
<b>SUM</b>	<b>31</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

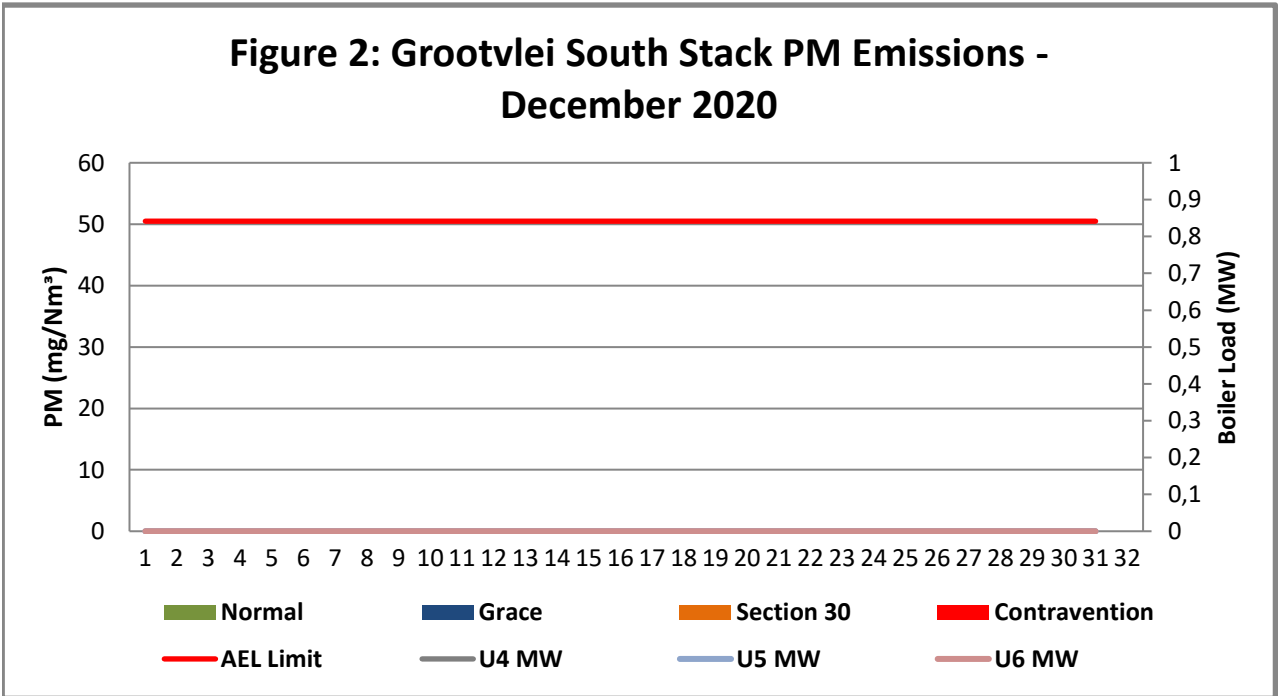
Table 6.5: Legend Description

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
Contra-vention		Emissions above ELV but outside grace or S30 incident conditions

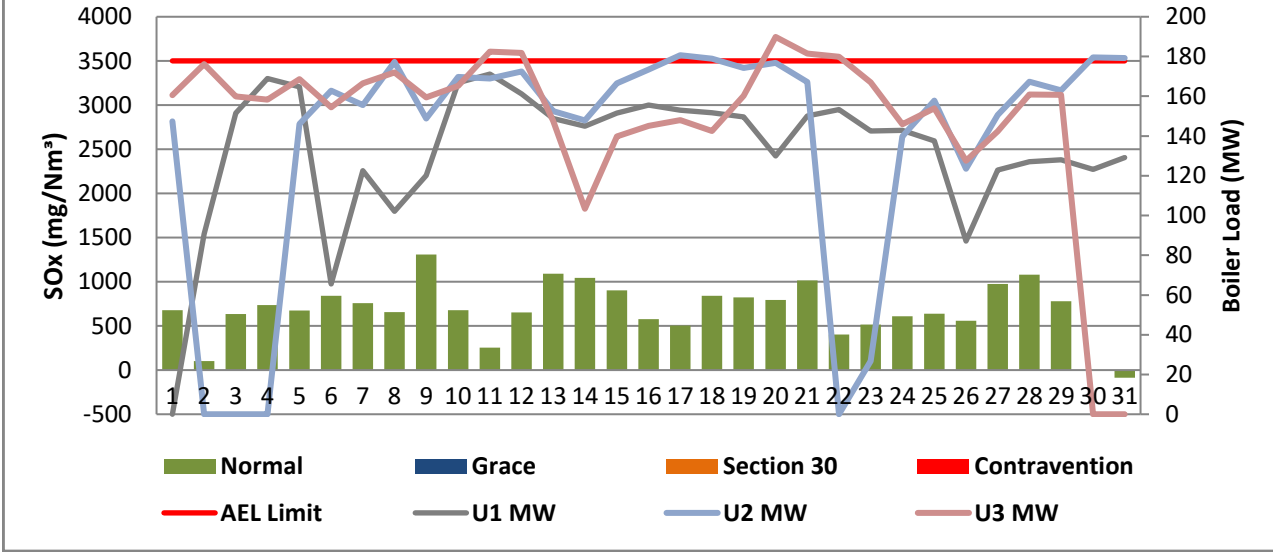
**Figure 1: Grootvlei North Stack PM Emissions - December 2020**



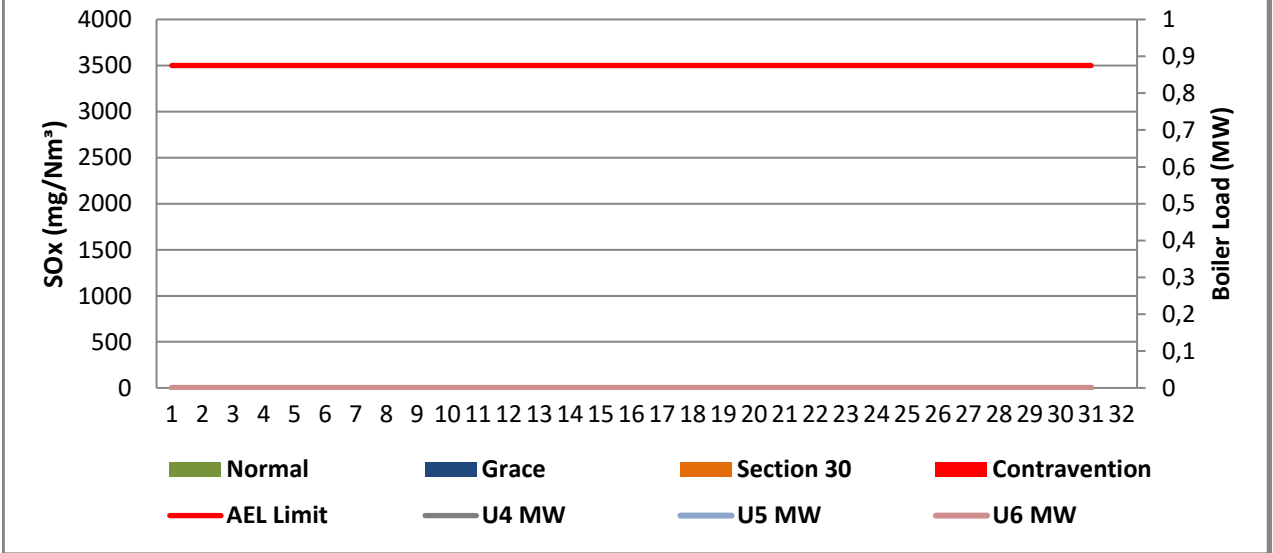
**Figure 2: Grootvlei South Stack PM Emissions - December 2020**



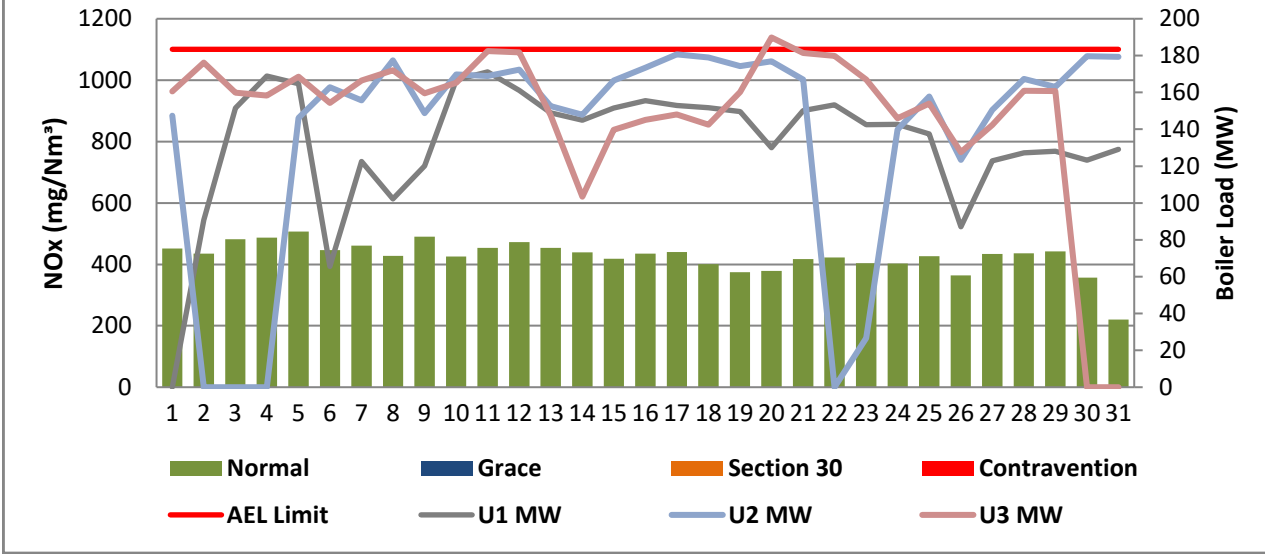
**Figure 3: Grootvlei North Stack SOx Emissions - December 2020**



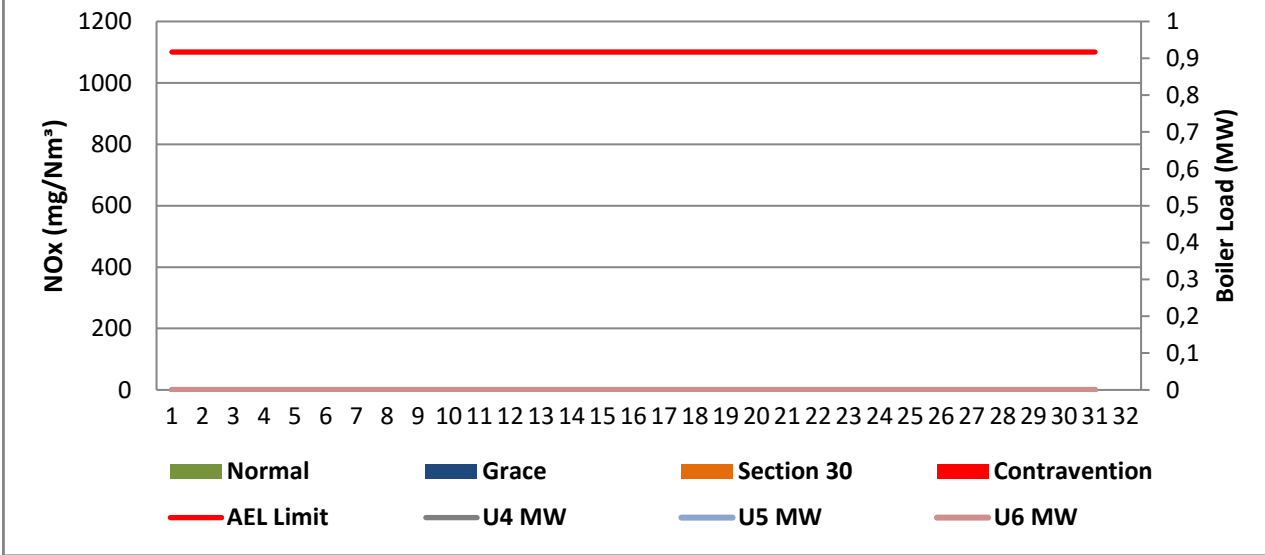
**Figure 4: Grootvlei South Stack SOx Emissions - December 2020**



**Figure 5: Grootvlei North Stack NOx Emissions - December 2020**



**Figure 6: Grootvlei South Stack NOx Emissions - December 2020**



**7 SHUT DOWN AND LIGHT UP INFORMATION**

Table 7.1. PM Start-up information for the month of December-2020

North Stack	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>		<i>Event 4</i>	
Unit No.	<i>no event</i>		<i>no event</i>		<i>no event</i>		<i>no event</i>	
Breaker Open (BO)								
Draught Group (DG) Shut Down (SD)								
BO to DG SD (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time								
Synch. to Grid (or BC)								
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM		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		DD:HH:MM		DD:HH:MM

North Stack ...Cont.	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>		<i>Event 4</i>	
Unit No.	<i>no event</i>		<i>no event</i>		<i>no event</i>		<i>Unit 3</i>	
Breaker Open (BO)			9:15 AM	2020/12/01	<i>BO previously</i>	<i>BO previously</i>		
Draught Group (DG) Shut Down (SD)			<i>DG did not trip or SD</i>	<i>DG did not trip or SD</i>	<i>n/a</i>	<i>n/a</i>		
BO to DG SD (duration)		DD:HH:MM	<i>n/a</i>	DD:HH:MM	<i>n/a</i>	DD:HH:MM		DD:HH:MM
Fires in time								
Synch. to Grid (or BC)								
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM		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		DD:HH:MM		DD:HH:MM

South Stack	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>		<i>Event 4</i>	
Unit No.	<i>no event</i>		<i>no event</i>		<i>no event</i>		<i>no event</i>	
Breaker Open (BO)								
Draught Group (DG) Shut Down (SD)								
BO to DG SD (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time								
Synch. to Grid (or BC)								
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM		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		DD:HH:MM		DD:HH:MM

South Stack ...Cont.	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>		<i>Event 4</i>	
Unit No.	<i>no event</i>		<i>no event</i>		<i>no event</i>		<i>no event</i>	
Breaker Open (BO)								
Draught Group (DG) Shut Down (SD)								
BO to DG SD (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time								
Synch. to Grid (or BC)								
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM		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		DD:HH:MM		DD:HH:MM

**7.2: Point Source emissions released during start-up (fires-in) and Shut-down (SD) for the month of December-2020 in mg/Nm<sup>3</sup>**

**[Include reference to once off test showing typical emissions rates during fires in and SD]**



Remember to add attachments here; see ReportAddendum Tab

Reserved for Addendum XXXX

11 General

South Stack off. SOx values lower than expected, no fault yet found on the system.

  
25/01/2021  
Environmental Department Date

  
25-01-2021  
Boiler Engineering Date

\_\_\_\_\_  
General Manager Date

Compiled by Boiler Engineering Department

FFP System Engineer

For: Department of Environmental Affairs and Tourism

Chief Air Pollution Control Officer

Copies: Eskom Environmental Management

D Herbst  
K Langerman

Group Technology Engineering

R Rampiar  
E. Patel

Grootvlie Power Station:

Engineering Manager  
Operating Manager  
Maintenance Manager  
Unit Production Manager  
Boiler Engineering Manager  
System Engineer  
Environmental Officer  
Performance and Test  
Production Manager