



Generation

Gert Sibande District Municipality  
Corner of Joubert & Oosthuise Streets  
Ermelo  
2350

**Attention:**  
Mr D Hlanyane  
  
AND

Directorate: Air Quality Management Services  
The Director:  
Mr Vumile Senene  
Department of Environmental Affairs  
Private Bag X447  
PRETORIA  
0001  
Tel: (012) 310 3263  
Fax: (012) 320 0488

**Date: 2022/01/12**

Enquiries: Nomasonto Nsibande  
☎ +27 17 779 8995  
☎ +27 86 507 5108

Enquiries: Thabo Montja  
☎ +27 17 779 8834

**Total number of pages:**  
**10**

**Total number of annexes:**

## GROOTVLEI POWER STATION

Atmospheric Emission License GPS/0015/2015/F02

  
\_\_\_\_\_  
BOILER ENGINEERING MANAGER

12/01/2022  
\_\_\_\_\_  
DATE

pp   
\_\_\_\_\_  
ENGINEERING MANAGER

12/01/2022  
\_\_\_\_\_  
DATE

  
\_\_\_\_\_  
ENVIRONMENTAL MANAGER

12/01/2022  
\_\_\_\_\_  
DATE

**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	Maximum Permitted Consumption Rate	Consumption Rate Dec-2021
	Coal	650 000	53 854.9
Fuel Oil	18 000	2626.31	
Production Rates	Product / By-Product Name	Maximum Production Capacity Permitted	Production Rate Dec-2021
	Energy	833.28	92.98
	Ash	300 000	16 286
	RE PM	not specified	0.12

## 2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 to < 1.2	1.10
Ash Content	%	27 to < 32	30.24

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

Associated Unit/Stack	PM	SO <sub>2</sub>	NO
North	100	3500	1100
South	50	3500	1100

## 4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	
Unit 1	<i>Fabric Filter Plant (FFP)</i>	
Unit 2	<i>Fabric Filter Plant (FFP)</i>	
Unit 3	<i>Fabric Filter Plant (FFP)</i>	
Unit 4	<i>Fabric Filter Plant (FFP)</i>	
Unit 5	<i>Fabric Filter Plant (FFP)</i>	
Unit 6	<i>Fabric Filter Plant (FFP)</i>	

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	O <sub>2</sub>
North	90.9	84.5	84.3	90.7
South				

**6 EMISSION PERFORMANCE**

Table 6.1: Monthly tonnages for the month of December-2021

Associated Unit/Stack	PM (tons)	SO <sub>2</sub> (tons)	NO <sub>2</sub> (tons)
Unit 1	7.66	535.0	112.9
Unit 2	0.00	0.0	0.0
Unit 3	3.95	346.2	66.5
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>11.61</b>	<b>881.2</b>	<b>179.4</b>

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

Associated Unit/Stack	Normal	Grace	Section 30	Total Exceedance	Average PM (mg/Nm <sup>3</sup> )
North	21	0	0	0	27.3
South	0	0	0	0	
<b>SUM</b>	<b>21</b>	<b>0</b>	<b>0</b>	<b>0</b>	





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

Associated Unit/Stack	Normal	Grace	Section 30	Total Exceedance	Average SOx (mg/Nm <sup>3</sup> )
North	21	0	0	0	1 948.1
South	0	0	0	0	
<b>SUM</b>	<b>21</b>	<b>0</b>	<b>0</b>	<b>0</b>	

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

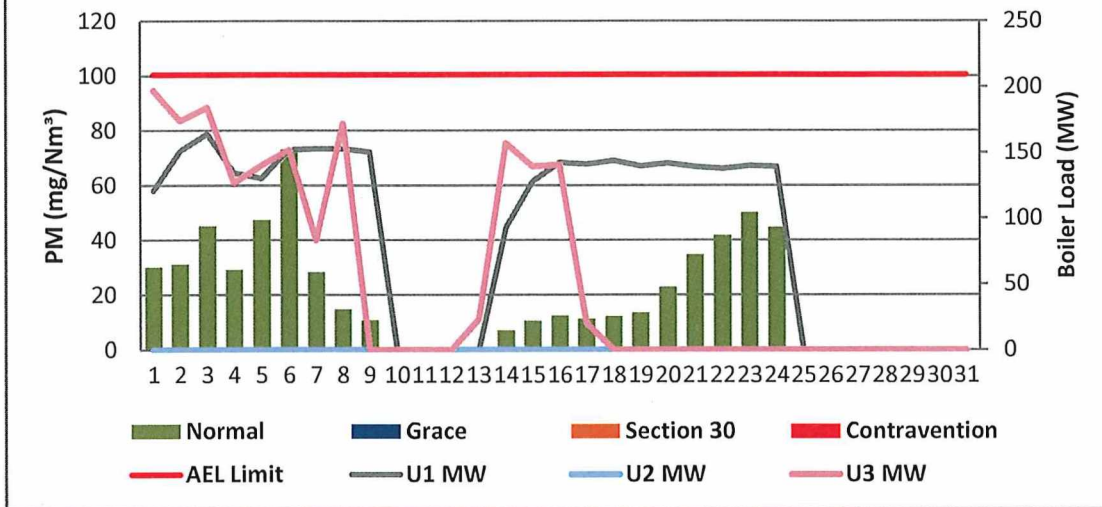
Associated Unit/Stack	Normal	Grace	Section 30	Total Exceedance	Average NOx (mg/Nm <sup>3</sup> )
North	21	0	0	0	419.5
South	0	0	0	0	
<b>SUM</b>	<b>21</b>	<b>0</b>	<b>0</b>	<b>0</b>	

Table 6.5: Legend Description

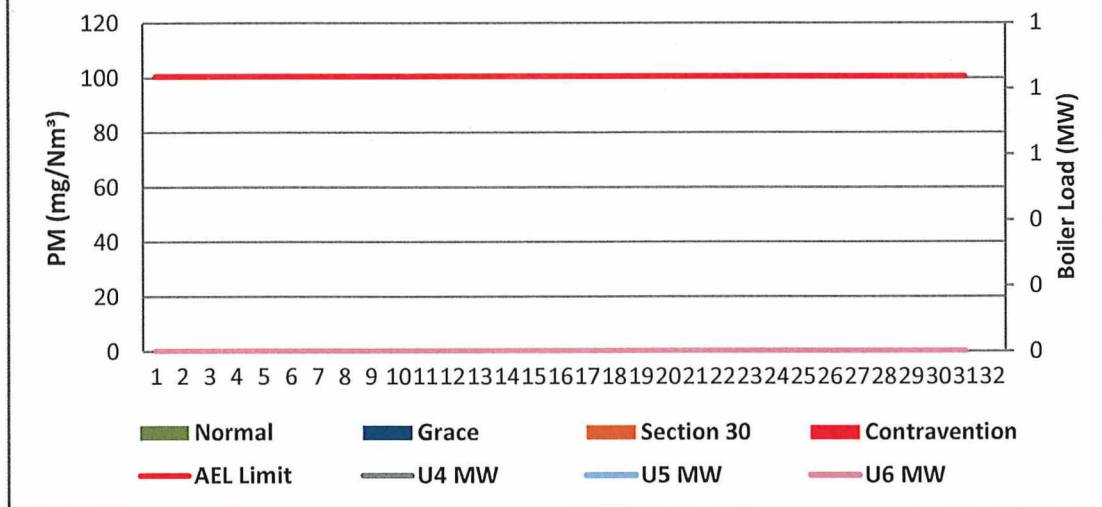
Condition	Colour	Description
Normal		Emissions below Emission Limit Value (ELV)
Grace		Emissions above the ELV during grace period
Section 30		Emissions above ELV during a NEMA S30 incident
Contravention		



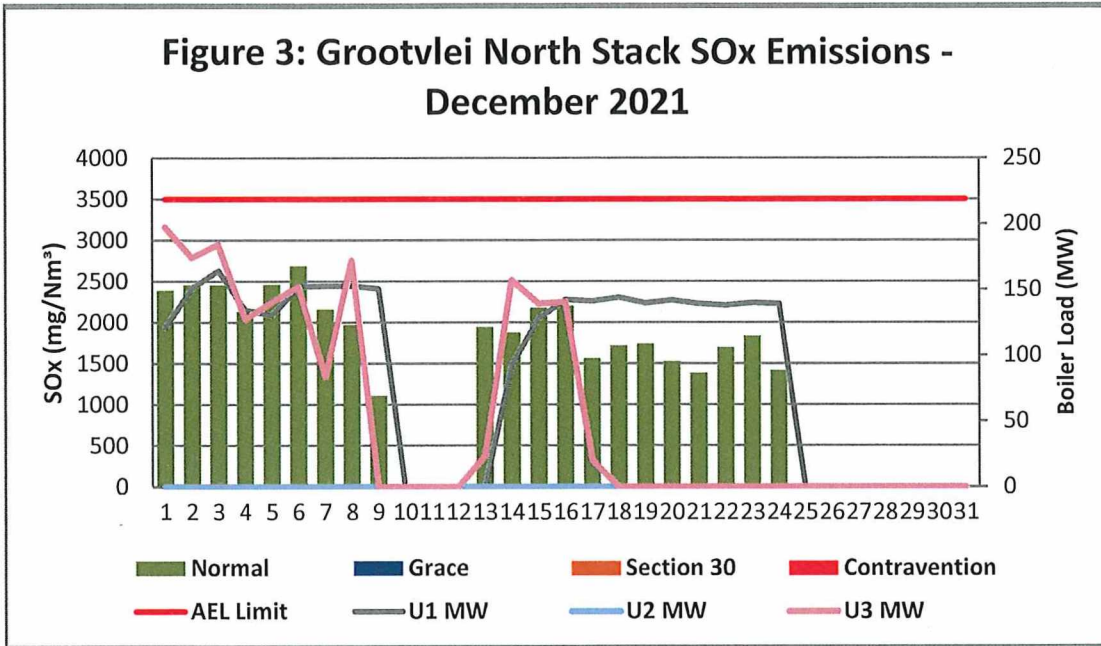
**Figure 1: Grootvlei North Stack PM Emissions - December 2021**



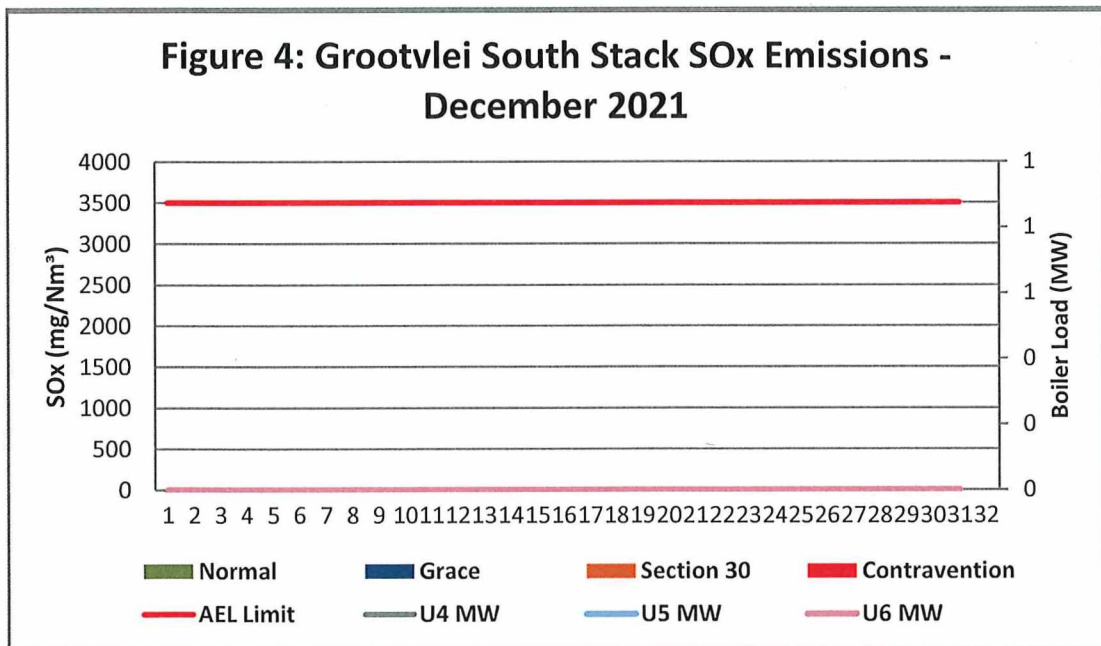
**Figure 2: Grootvlei South Stack PM Emissions - December 2021**



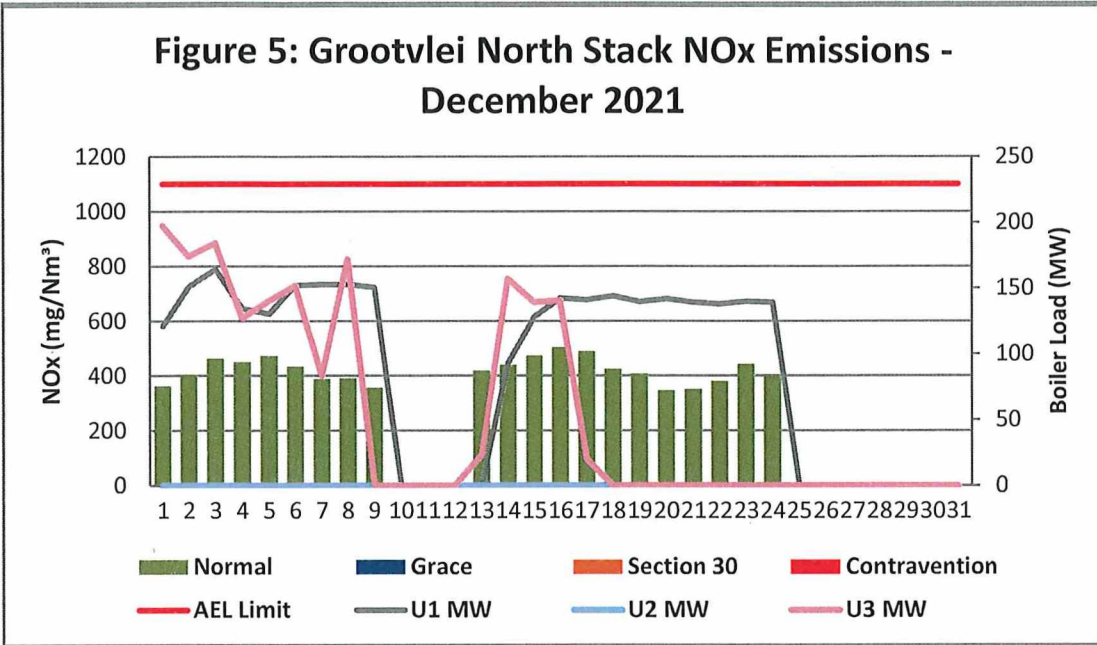
**Figure 3: Grootvlei North Stack SOx Emissions - December 2021**



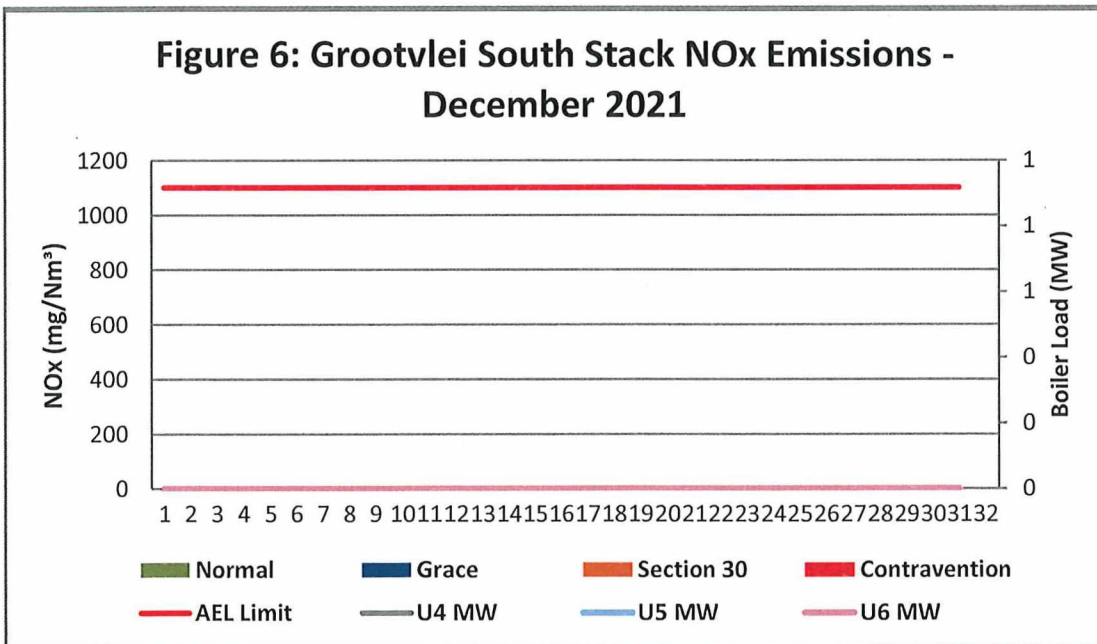
**Figure 4: Grootvlei South Stack SOx Emissions - December 2021**



**Figure 5: Grootvlei North Stack NOx Emissions - December 2021**



**Figure 6: Grootvlei South Stack NOx Emissions - December 2021**



7 SHUT DOWN AND LIGHT UP INFORMATION

Table 7.1. PM Start-up information for the month of December-2021

North Stack	Event 1			Event 3		Event 4	
Unit No.	Unit 3			Unit 1		Unit 3	
Breaker Open (BO)	3:20 PM	01/12/2021	01/12/2021	2:25 AM	09/12/2021	5:20 PM	08/12/2021
Draught Group (DG) Shut Down (SD)	4:10 PM	01/12/2021	DG did not trip or SD	3:10 PM	09/12/2021	5:25 AM	09/12/2021
BO to DG SD (duration)	00:00:50	DD:HH:MM	DD:HH:MM	00:12:45	DD:HH:MM	00:12:05	DD:HH:MM
Fires in time	5:00 PM	01/12/2021		4:10 AM	14/12/2021	11:15 AM	13/12/2021
Synch. to Grid (or BC)	4:25 AM	02/12/2021		7:25 PM	14/12/2021	11:05 PM	13/12/2021
Fires in to BC (duration)	00:11:25	DD:HH:MM	DD:HH:MM	00:15:15	DD:HH:MM	00:11:50	DD:HH:MM
Emissions below limit from BC (end date)	not > limit	not > limit		not > limit	not > limit	not > limit	not > limit
Emissions below limit from BC (duration)	n/a	DD:HH:MM	DD:HH:MM	n/a	DD:HH:MM	n/a	DD:HH:MM

North Stack ...Cont.	Event 1			Event 3		Event 4	
Unit No.	no event			no event		Unit 3	
Breaker Open (BO)	12:10 AM	17/12/2021	24/12/2021				
Draught Group (DG) Shut Down (SD)	10:50 AM	17/12/2021	26/12/2021				
BO to DG SD (duration)	00:10:40	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	<i>Event 1</i>		<i>Event 3</i>		<i>Event 4</i>	
Unit No.	<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 3</i>		<i>Event 4</i>	
Unit No.	<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-2021 in mg/Nm<sup>3</sup>

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



**ADDENDUM TO MONTHLY EMISSIONS REPORT**

**8 EMERGENCY GENERATION**

Emergency Generation *[This is only required for stations that are requested to report on this information]*

Table 8. Emergency Generation per unit for the month of December-2021

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Emergency Generation hours declared by national Control						
Emergency Hours declared including hours after stand down						
Hours over the Limit during Emergency Generation						

**9 COMPLAINTS REGISTER**

Table 9. Complaints for the month of December-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
<i>(Insert name of affected person/source)</i>	<i>(Insert root cause for incident)</i>	<i>(Insert emissions associated with incident)</i>	<i>(Insert dispersion model information where applicable)</i>	<i>(Insert mitigation measures taken)</i>	<i>(Insert date of implementation of mitigation method)</i>

**10 S30 INCIDENT OR LEGAL CONTRAVENTION REGISTER**

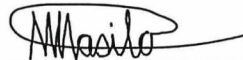
To be completed in the case of a S30 incident or a legal contravention:

Unit no	Incident Start Date	Incident End Date	Incident Cause	Remedial action	Date S30 initial notification sent	Date S30 investigation report sent	Date DEA Acknowledgment	Date DEA Acceptable	Comments / Reference No.

**11 General**

**South Stack off. The coal analysis report was not available when the report was done, coal results from the STEP report were used.**


 \_\_\_\_\_ 14/01/2022  
**Environmental Department** Date


 \_\_\_\_\_ 12/01/2022  
**Boiler Engineering** Date


 \_\_\_\_\_ 14/01/2022  
**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
  - Group Technology Engineering          K Langerman
  - Grootvlie Power Station:          R Rampiar
  - E. Patel
  - Engineering Manager
  - Operating Manager
  - Maintenance Manager
  - Unit Production Manager
  - Boiler Engineering Manager
  - System Engineer
  - Environmental Officer
  - Performance and Test
  - Production Manager