



Generation

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

**Attention:**

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AND

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**GROOTVLEI POWER STATION**

Atmospheric Emission License GPS/0015/2015/F02

  
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BOILER ENGINEERING MANAGER

2024/12/05  
DATE

  
p.p  
ENGINEERING MANAGER

2024/12/05  
DATE

  
ENVIRONMENTAL MANAGER

2024/12/17  
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	Units	Maximum Permitted Consumption Rate	Consumption Rate Oct-2024
	Coal	Tons	650 000	134 086.0
	Fuel Oil	Tons	20 000	2615.54
Production Rates	Product / By-Product Name	Units	Maximum Production Capacity Permitted	Indicative Production Rate Oct 2024
	Energy	GWh	833.28	214.28
	Ash	Tons	300 000	35 171
	RE PM	kg/MWh	not specified	0.39

Note: Maximum energy production is calculated as:  $(190\text{MW} \times 4 \text{ Units} + 180\text{MW} \times 2 \text{ Units}) \times 24\text{hrs} \times \text{Days in month} / 1000 = \text{GWh}$ .

## 2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
CV Content	MJ/kg	18-24	20.82
Sulphur Content	%	0.6 to < 1.2	0.76
Ash Content	%	27 to < 32	26.23

## 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	Efficiency
Unit 1	Fabric Filter Plant (FFP)	99.702%
Unit 2	Fabric Filter Plant (FFP)	99.756%
Unit 3	Fabric Filter Plant (FFP)	99.736%
Unit 4	Fabric Filter Plant (FFP)	Unit Off-line
Unit 5	Fabric Filter Plant (FFP)	Unit Off-line
Unit 6	Fabric Filter Plant (FFP)	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	O <sub>2</sub>
North	100.0	96.8	96.6	83.9
South				

Note: NO<sub>x</sub> emissions is measured as NO in PPM. Final NO<sub>x</sub> value is expressed as total NO<sub>2</sub>



## 6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of October-2024

Associated Unit/Stack	PM (tons)	SO <sub>2</sub> (tons)	NO <sub>x</sub> (tons)
Unit 1	28.14	759.1	172.7
Unit 2	29.04	678.9	166.1
Unit 3	26.32	643.0	148.0
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>83.50</b>	<b>2 080.9</b>	<b>486.8</b>

Table 6.2: Operating days in compliance to PM AEL Limit - October 2024

Associated Unit/Stack	Normal	Grace	Section 30	Total Exceedance	Average PM (mg/Nm <sup>3</sup> )
North	26	5	0	5	76.2
South	0	0	0	0	
<b>SUM</b>	<b>26</b>	<b>5</b>	<b>0</b>	<b>5</b>	

Table 6.3: Operating days in compliance to SO<sub>2</sub> AEL Limit - October 2024

Associated Unit/Stack	Normal	Grace	Section 30	Total Exceedance	Average SO <sub>2</sub> (mg/Nm <sup>3</sup> )
North	30	0	0	0	1 778.2
South	0	0	0	0	
<b>SUM</b>	<b>30</b>	<b>0</b>	<b>0</b>	<b>0</b>	

Table 6.4: Operating days in compliance to NO<sub>x</sub> AEL Limit - October 2024

Associated Unit/Stack	Normal	Grace	Section 30	Total Exceedance	Average NO <sub>x</sub> (mg/Nm <sup>3</sup> )
North	31	0	0	0	400.4
South	0	0	0	0	
<b>SUM</b>	<b>31</b>	<b>0</b>	<b>0</b>	<b>0</b>	

Note: NO<sub>x</sub> emissions is measured as NO in PPM. Final NO<sub>x</sub> value is expressed as total NO<sub>2</sub>

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 St. PM Emissions - October 2024

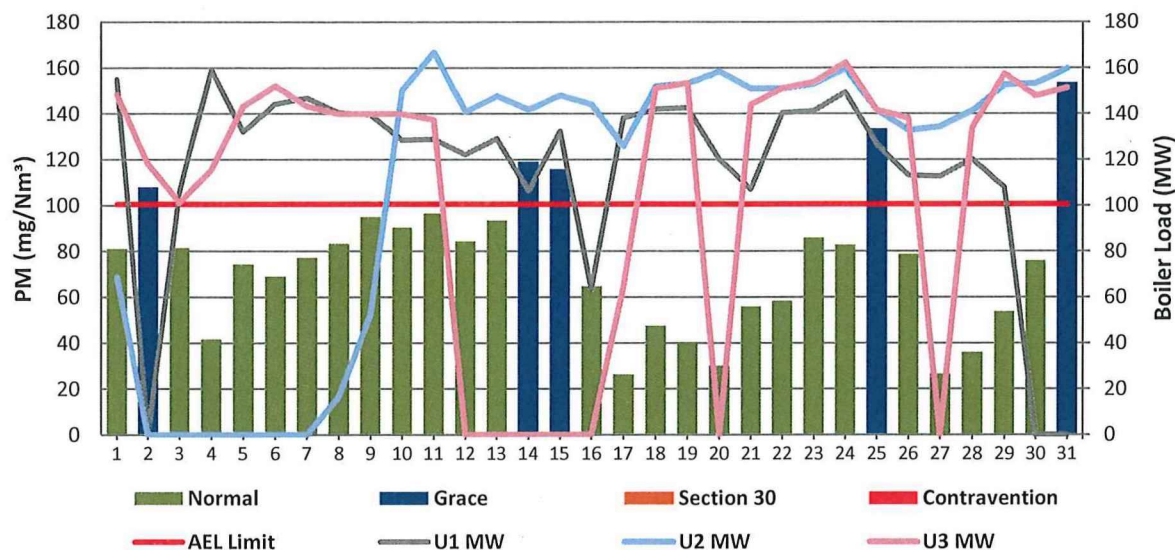


Figure 2: Grootvlei South St. PM Emissions - October 2024

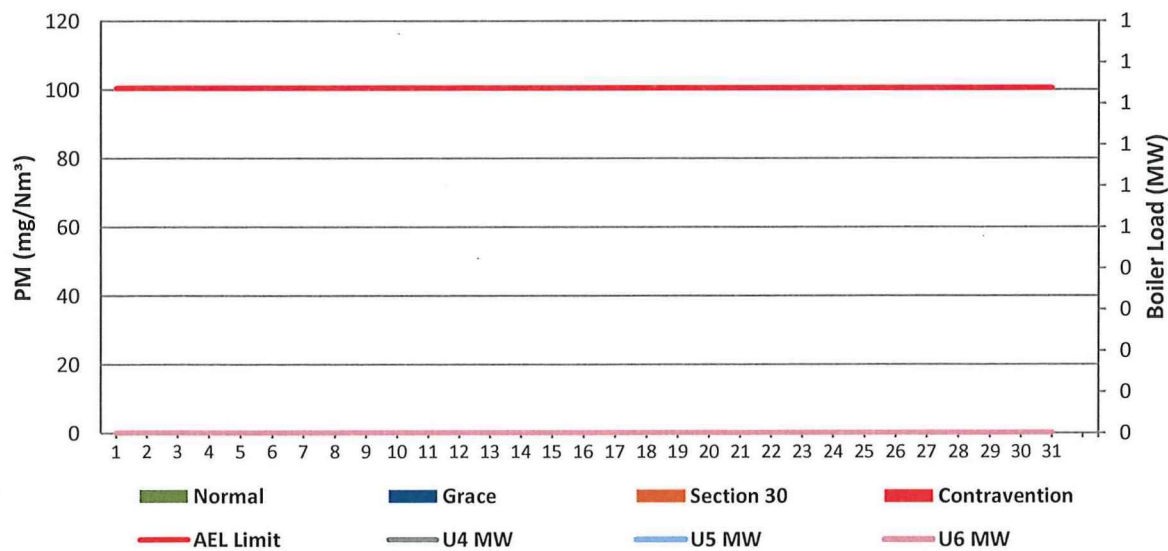


Figure 3: Grootvlei North St. SO<sub>2</sub> Emissions - October 2024

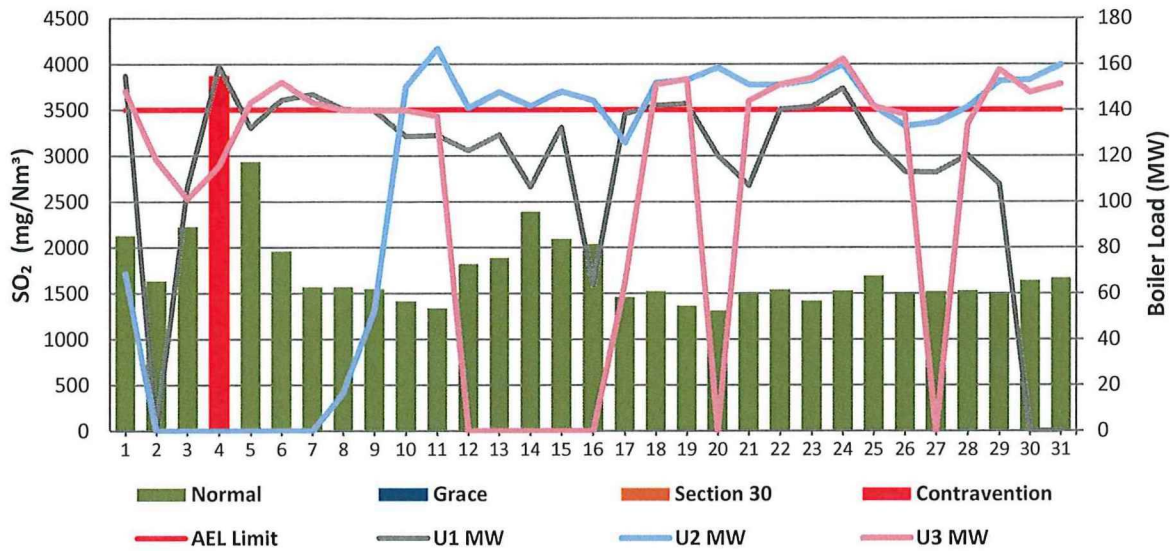


Figure 4: Grootvlei South St. SO<sub>2</sub> Emissions - October 2024

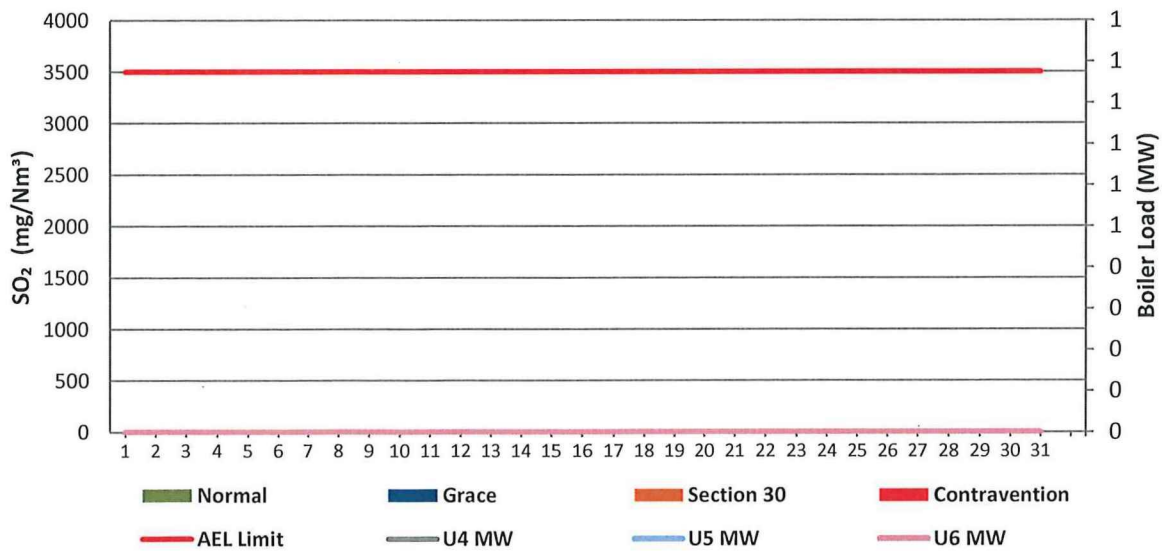




Figure 5: Grootvlei North St. NOx Emissions - October 2024

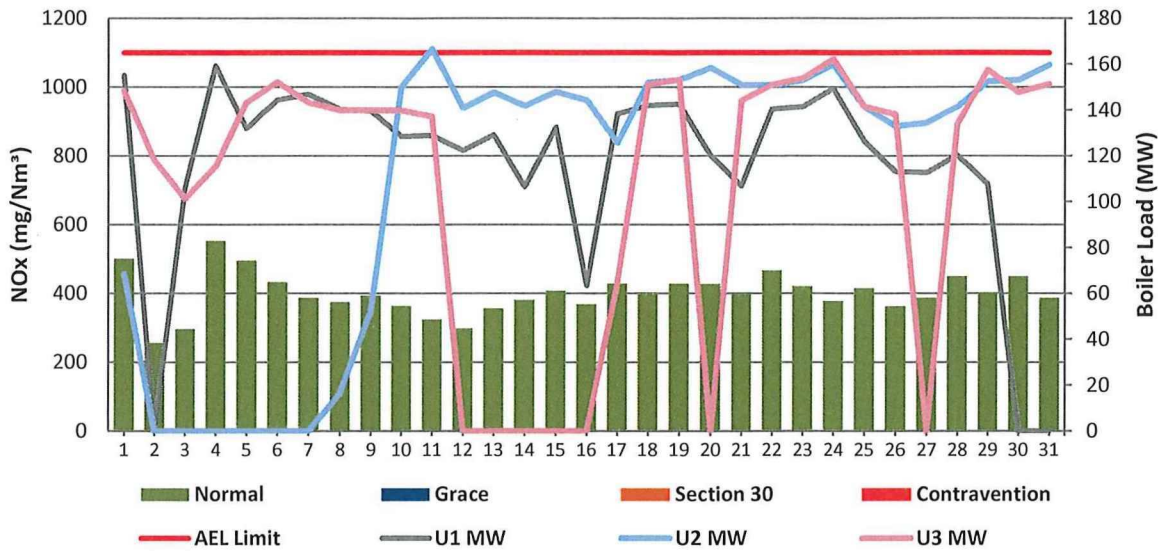
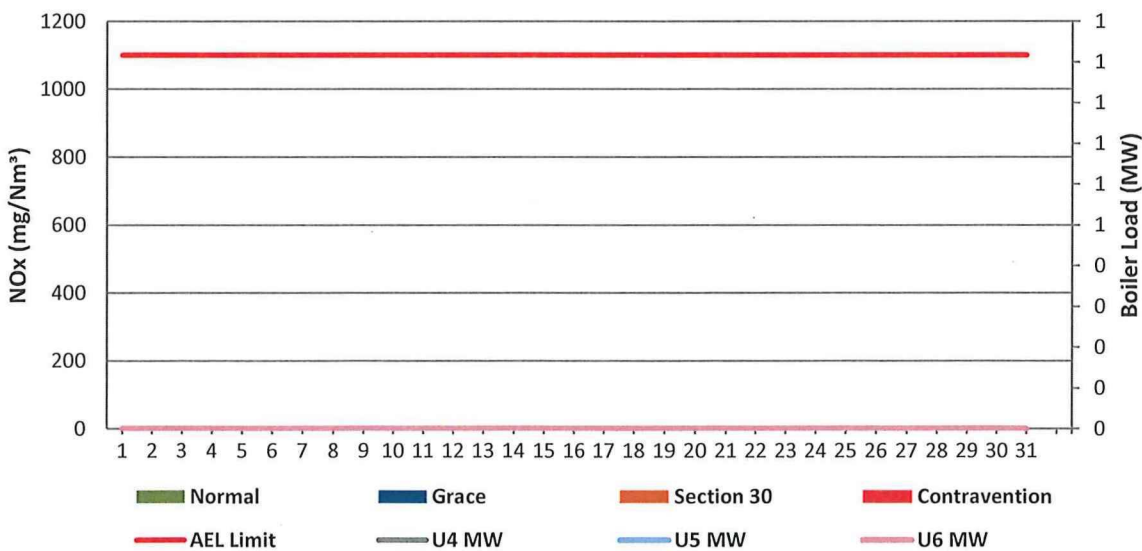


Figure 6: Grootvlei South St. NOx Emissions - October 2024



## 7 SHUT DOWN AND LIGHT UP INFORMATION

Table 7.1. PM Start-up information for the month of October-2024

North Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 1		Unit 1		Unit 1		Unit 1	
Breaker Open (BO)	BO previously	BO previously	12:00 am	2024/10/02	6:00 am	2024/10/16	1:45 am	2024/10/29
Draught Group (DG) Shut Down (SD)	n/a	n/a	DG did not trip or SD	DG did not trip or SD	DG did not trip or SD	DG did not trip or SD	11:20 am	2024/10/29
BO to DG SD (duration)	n/a	DD:HH:MM	n/a	DD:HH:MM	n/a	DD:HH:MM	00:09:35	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.	Event 5		Event 6		Event 7		Event 8	
Unit No.	Unit 2		Unit 2		Unit 3		Unit 3	
Breaker Open (BO)	6:25 pm	2024/10/01	4:25 am	2024/10/26	3:45 pm	2024/10/11	9:40 am	2024/10/19
Draught Group (DG) Shut Down (SD)	8:45 pm	2024/10/02	11:40 am	2024/10/26	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)	01:02:20	DD:HH:MM	00:07:15	DD:HH:MM	n/a	DD:HH:MM	n/a	DD:HH:MM
Fires in time	9:40 am	2024/10/08	7:50 pm	2024/10/26				
Synch. to Grid (or BC)	1:05 am	2024/10/10	4:50 am	2024/10/27				
Fires in to BC (duration)	01:15:25	DD:HH:MM	00:09:00	DD:HH:MM		DD:HH:MM		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		DD:HH:MM		DD:HH:MM



South Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	no event		no event		no event		no event	
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.	Event 5		Event 6		Event 7		Event 8	
Unit No.	no event		no event		no event		no event	
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 October-2024 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 October-2024

	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 October-2024

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**

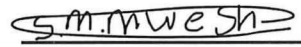
South Stack off. The monthly average PM emissions were 76.2 mg/Nm<sup>3</sup>, attributed to leaks in multiple bags. A total of 62 leaking bags were replaced across the units: 8 in Unit 1, 5 in Unit 2, and 49 in Unit 3. The bag failures were caused by ash plant challenges, resulting in a dusting backlog. The dust probe has been replaced, and a correlation test is pending.



2024/12/17

Environmental Department

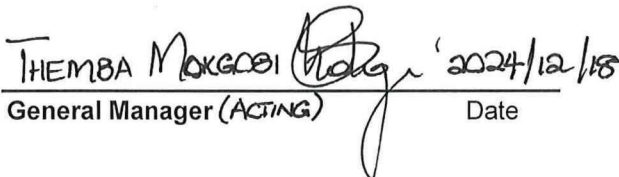
Date



2024/12/05

Boiler Engineering

Date



General Manager (ACTING)

Date

Compiled by: Boiler Engineering Department

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Grootvlie Power Station:

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