

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 Feb-2021
	Coal	Tons	650 000	79 439,0
	Fuel Oil	Tons	18 000	1214,7
Production Rates	Product / By-Product Name	Units	Maximum Production Capacity Permitted	Production Rate Feb-2021
	Energy	GWh	752,64	130,25
	Ash	Tons	300 000	19 825
	RE PM	kg/MWh	not specified	0,06

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 to < 1.2	0,59
Ash Content	%	27 to < 32	24,96

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SO ₂	NO
North	100	3500	1100
South	100	3500	1100

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Feb-2021
Unit 1	<i>Fabric Filter Plant (FFP)</i>	99,934%
Unit 2	<i>Fabric Filter Plant (FFP)</i>	99,930%
Unit 3	<i>Fabric Filter Plant (FFP)</i>	99,989%
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 ₂	NO	O ₂
North	90,4	88,2	71,2	89,7
South				

6 EMISSION PERFORMANCE

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

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO ₂ (tons)
Unit 1	3,16	567,0	94,0
Unit 2	4,00	648,0	111,1
Unit 3	0,77	115,9	18,4
Unit 4	0,00	0,0	0,0
Unit 5	0,00	0,0	0,0
Unit 6	0,00	0,0	0,0
SUM	7,94	1 330,9	223,4

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

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance	Average PM (mg/Nm ³)
North	24	0	0	0	0	13,1
South	0	0	0	0	0	
SUM	24	0	0	0	0	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance	Average SOx (mg/Nm ³)
North	24	0	0	0	0	2 082,9
South	0	0	0	0	0	
SUM	24	0	0	0	0	

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

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance	Average NOx (mg/Nm ³)
North	24	0	0	0	0	340,4
South	0	0	0	0	0	
SUM	24	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
Contra-vention		Emissions above ELV but outside grace or S30 incident conditions

Figure 1: Grootvlei North Stack PM Emissions - February 2021

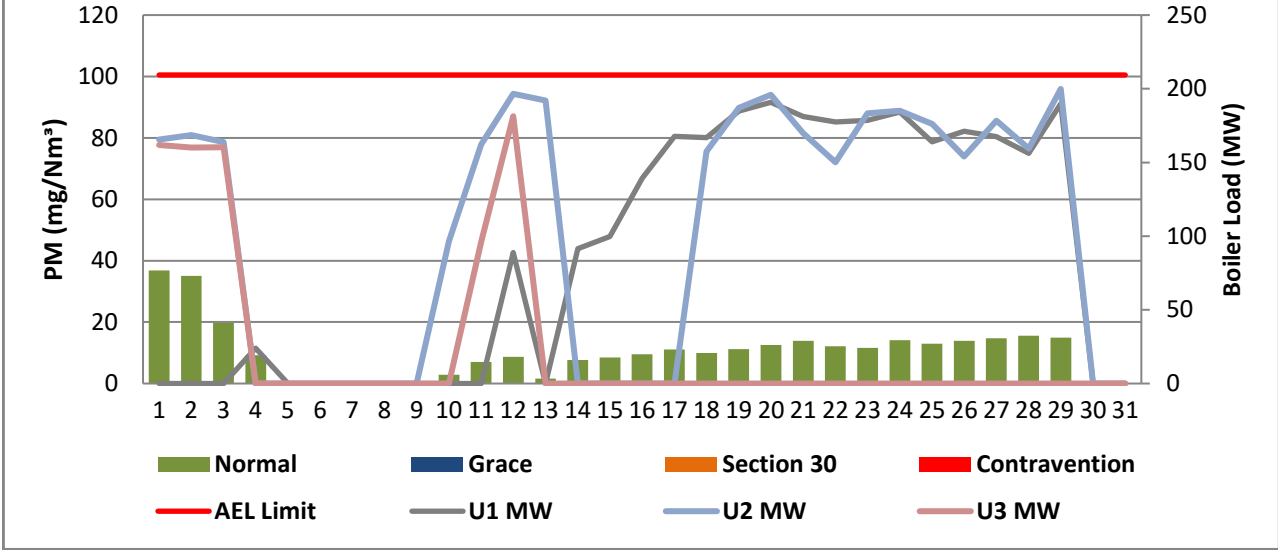


Figure 2: Grootvlei South Stack PM Emissions - February 2021

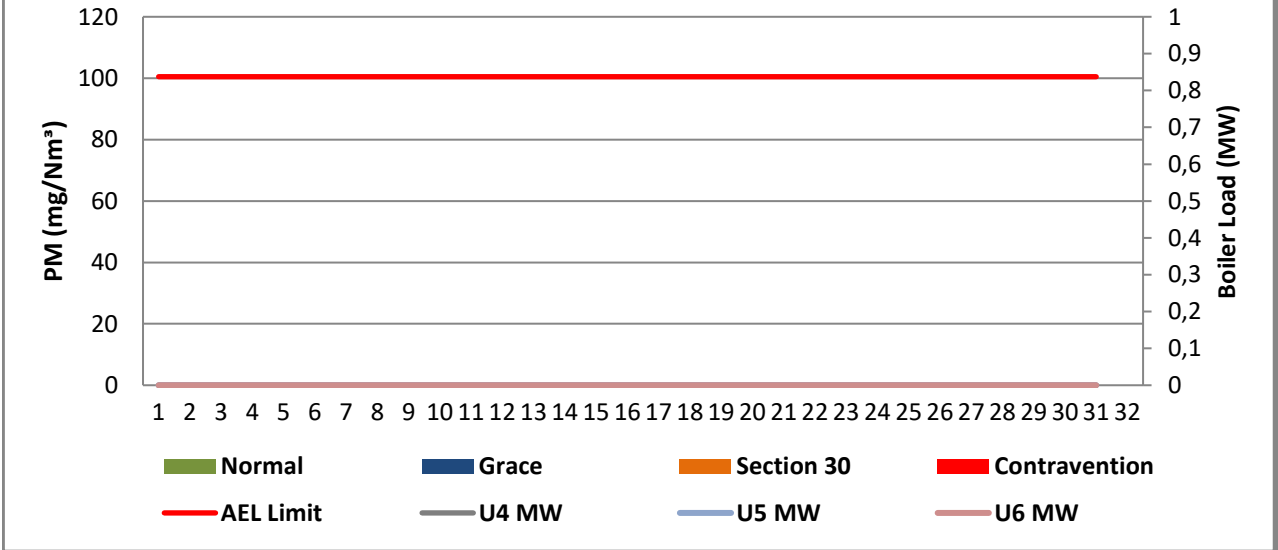


Figure 3: Grootvlei North Stack SOx Emissions - February 2021

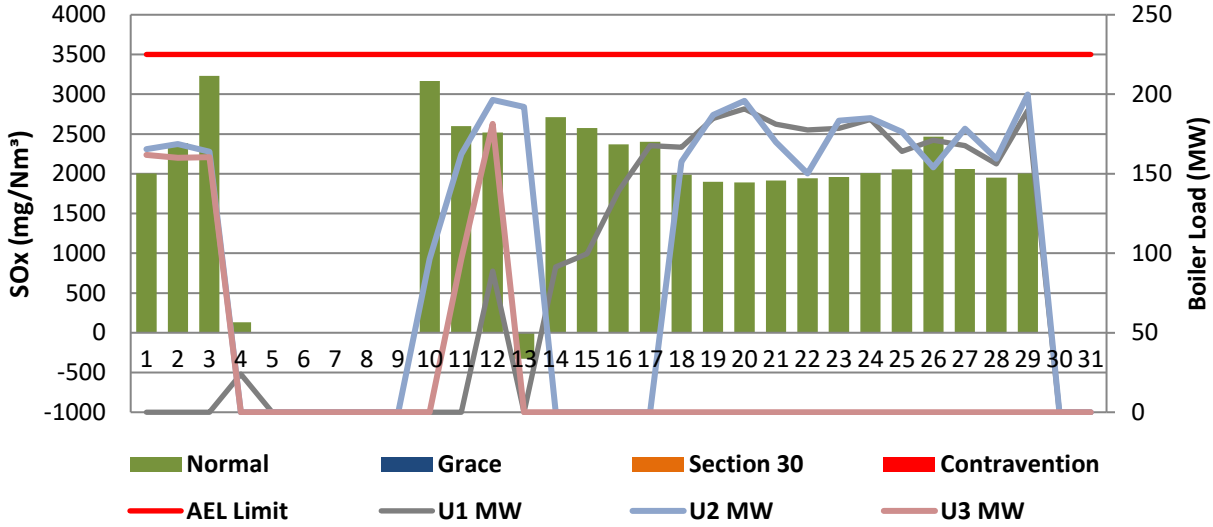


Figure 4: Grootvlei South Stack SOx Emissions - February 2021

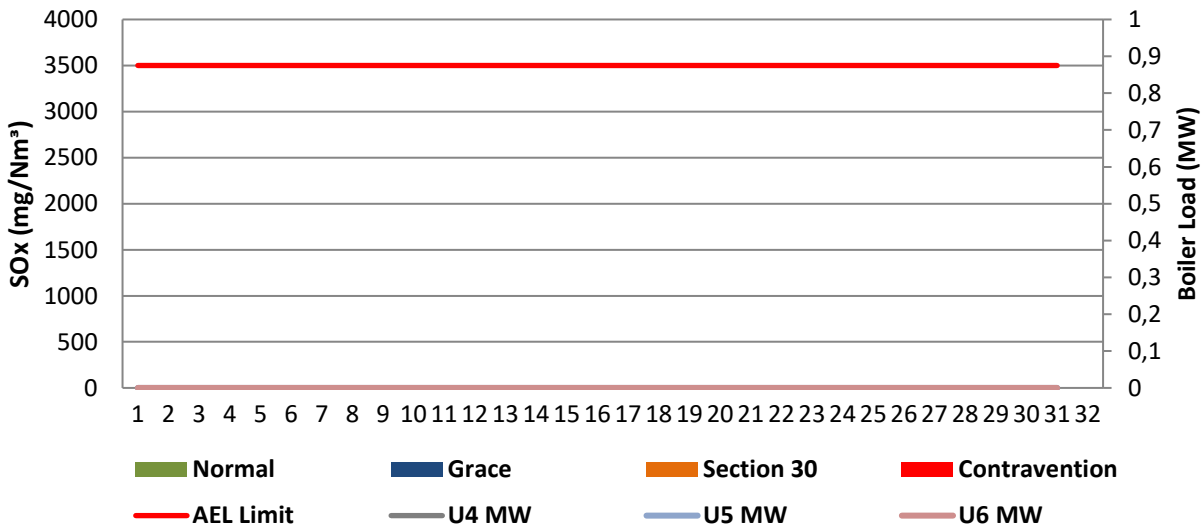


Figure 5: Grootvlei North Stack NOx Emissions - February 2021

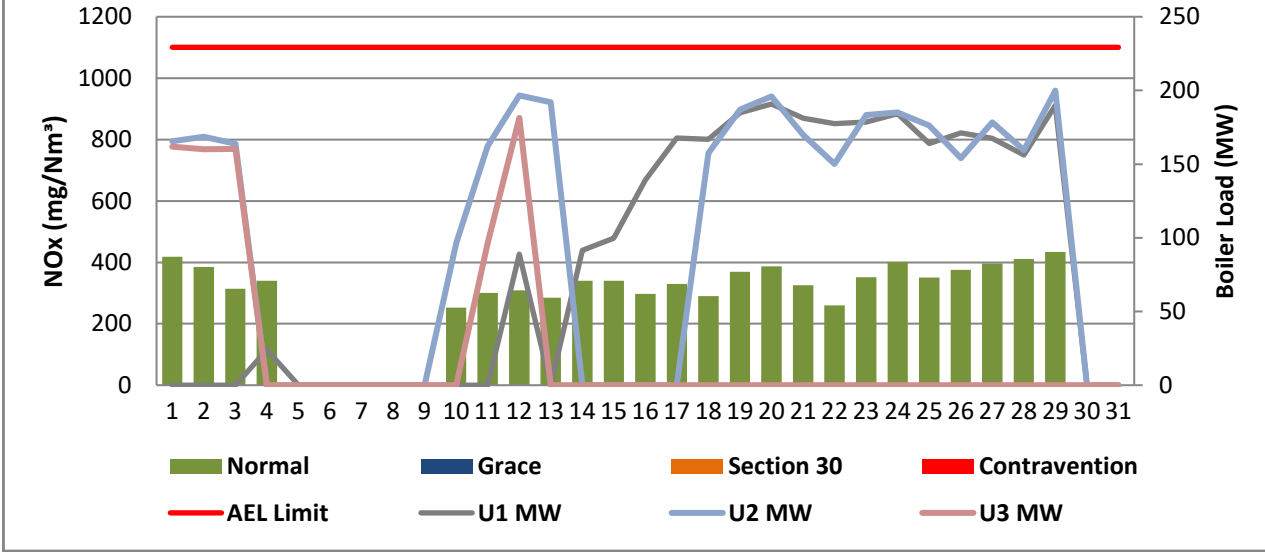
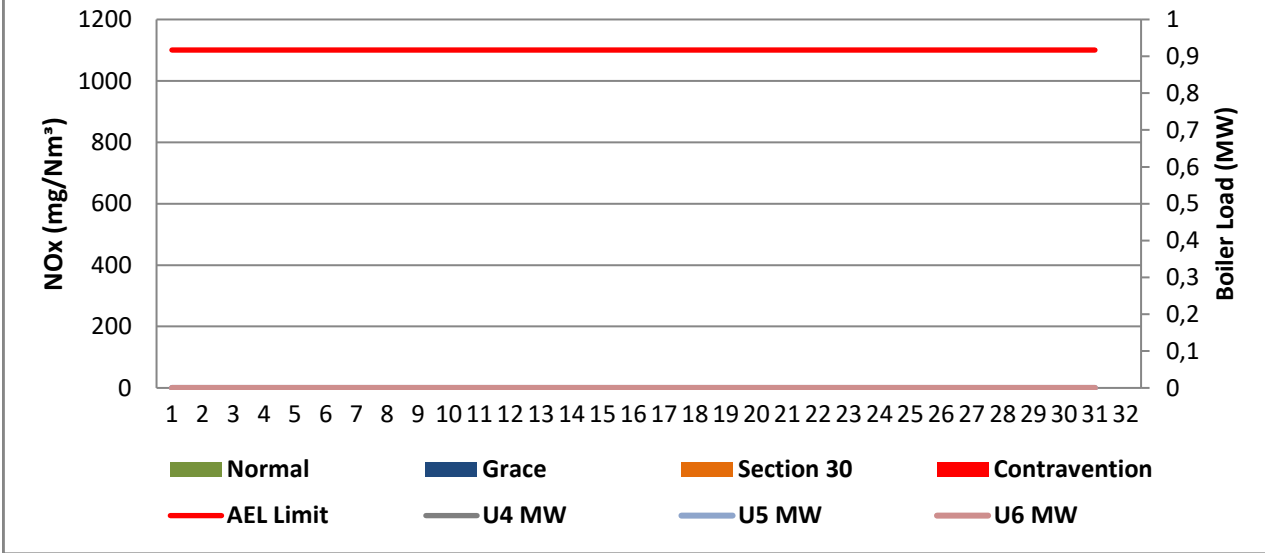


Figure 6: Grootvlei South Stack NOx Emissions - February 2021



7 SHUT DOWN AND LIGHT UP INFORMATION

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

North Stack	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>		<i>Event 4</i>	
Unit No.	<i>Unit</i>		<i>Unit 2</i>		<i>Unit 2</i>		<i>Unit 2</i>	
Breaker Open (BO)	<i>BO previously</i>	<i>BO previously</i>	<i>6:20 PM</i>	<i>2021/02/03</i>	<i>8:10 PM</i>	<i>2021/02/13</i>	<i>11:40 PM</i>	<i>2021/02/25</i>
Draught Group (DG) Shut Down (SD)	<i>n/a</i>	<i>n/a</i>	<i>6:25 AM</i>	<i>2021/02/04</i>	<i>2:35 PM</i>	<i>2021/02/14</i>	<i>DG did not trip or SD</i>	<i>DG did not trip or SD</i>
BO to DG SD (duration)	<i>n/a</i>	DD:HH:MM	<i>00:12:05</i>	DD:HH:MM	<i>00:18:25</i>	DD:HH:MM	<i>n/a</i>	DD:HH:MM
Fires in time	<i>10:35 PM</i>	<i>2021/02/13</i>	<i>3:50 AM</i>	<i>2021/02/09</i>	<i>2:30 PM</i>	<i>2021/02/17</i>	<i>11:40 PM</i>	<i>2021/02/25</i>
Synch. to Grid (or BC)	<i>9:15 AM</i>	<i>2021/02/14</i>	<i>10:05 AM</i>	<i>2021/02/10</i>	<i>12:30 AM</i>	<i>2021/02/18</i>	<i>9:10 AM</i>	<i>2021/02/26</i>
Fires in to BC (duration)	<i>00:10:40</i>	DD:HH:MM	<i>01:06:15</i>	DD:HH:MM	<i>00:10:00</i>	DD:HH:MM	<i>00:09:30</i>	DD:HH:MM
Emissions below limit from BC (end date)	<i>not > limit</i>	<i>not > limit</i>	<i>not > limit</i>	<i>not > limit</i>	<i>not > limit</i>	<i>not > limit</i>	<i>not > limit</i>	<i>not > limit</i>
Emissions below limit from BC (duration)	<i>n/a</i>	DD:HH:MM	<i>n/a</i>	DD:HH:MM	<i>n/a</i>	DD:HH:MM	<i>n/a</i>	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>Unit</i>		<i>no event</i>		<i>no event</i>		<i>no event</i>	
Breaker Open (BO)	<i>3:20 AM</i>	<i>2021/02/02</i>						
Draught Group (DG) Shut Down (SD)	<i>DG did not trip or SD</i>	<i>DG did not trip or SD</i>						
BO to DG SD (duration)	<i>n/a</i>	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	<i>1:30 AM</i>	<i>2021/02/10</i>						
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)	<i>not > limit</i>	<i>not > limit</i>						
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 February-2021 in mg/Nm³


[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-line. SOx values are too low and gases availability falls below 80%. This might be caused by improved coal qualities which makes the current gas values to fall outside the parallel tests curve. Parallel test averages are used for reporting on these gases and the station is in a process to arrange spot check and latest Parallel tests to cater for current plant conditions.


08/03/2021
Environmental Department Date


08-03-2021
Boiler Engineering Date

pp 
08/03/2021
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