



Generation

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Corner of Joubert & Oosthuise Streets
Ermelo
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AND

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GROOTVLEI POWER STATION

Atmospheric Emission License GPS/0015/2015/F02



BOILER ENGINEERING MANAGER

08/02/2021

DATE



ENGINEERING MANAGER

08/02/2021

DATE



ENVIRONMENTAL MANAGER

2021/02/01

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 Jan-2021
	Coal	Tons	650 000	153 303,0
	Fuel Oil	Tons	18 000	1160,325
Production Rates	Product / By-Product Name	Units	Maximum Production Capacity Permitted	Production Rate Jan-2021
	Energy	GWh	833,28	240,96
	Ash	Tons	300 000	43 154
	RE PM	kg/MWh	not specified	0,12

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 to < 1.2	0,68
Ash Content	%	27 to < 32	28,15

3 EMISSION LIMITS (mg/Nm³)

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

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Jan-2021
Unit 1	Fabric Filter Plant (FFP)	99,941%
Unit 2	Fabric Filter Plant (FFP)	99,935%
Unit 3	Fabric Filter Plant (FFP)	99,905%
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 ₂	NO	CO ₂	O ₂
North	100,0	100,0	90,7	88,0	100,0
South					

6 EMISSION PERFORMANCE

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

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO ₂ (tons)
Unit 1	7,01	614,3	117,5
Unit 2	8,12	780,7	155,2
Unit 3	13,88	1 074,5	214,6
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	29,01	2 469,5	487,3

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

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance	Average PM (mg/Nm ³)
North	31	0	0	0	0	26,8
South	0	0	0	0	0	
SUM	31	0	0	0	0	

Table 6.3: Operating days in compliance to SO_x AEL Limit - January 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance	Average SO _x (mg/Nm ³)
North	31	0	0	0	0	2 128,8
South	0	0	0	0	0	
SUM	31	0	0	0	0	

Table 6.4: Operating days in compliance to NO_x AEL Limit - January 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contra-vention	Total Exceedance	Average NO _x (mg/Nm ³)
North	31	0	0	0	0	407,6
South	0	0	0	0	0	
SUM	31	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

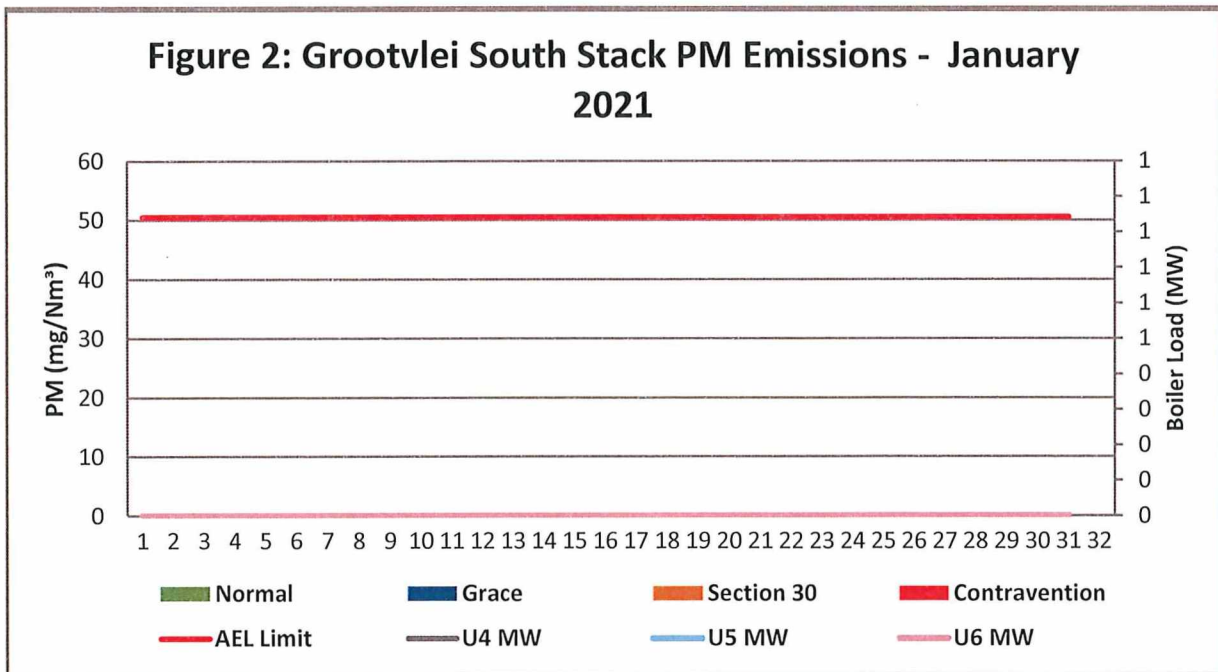
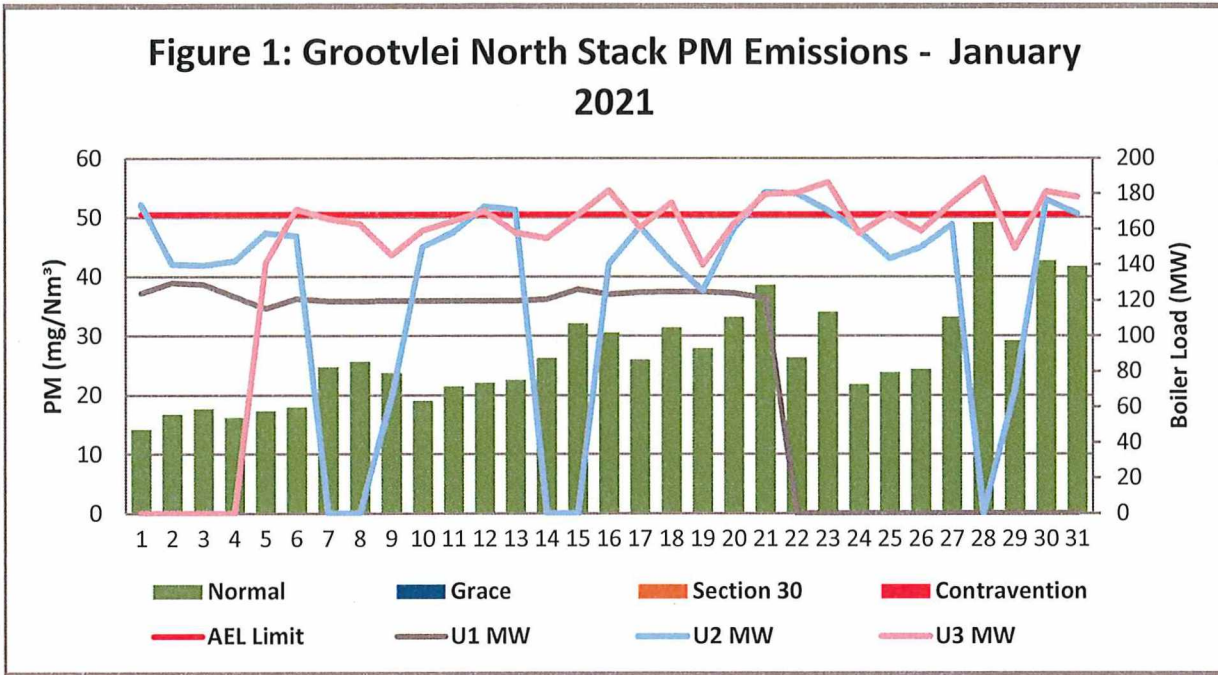


Figure 3: Grootvlei North Stack SOx Emissions - January 2021

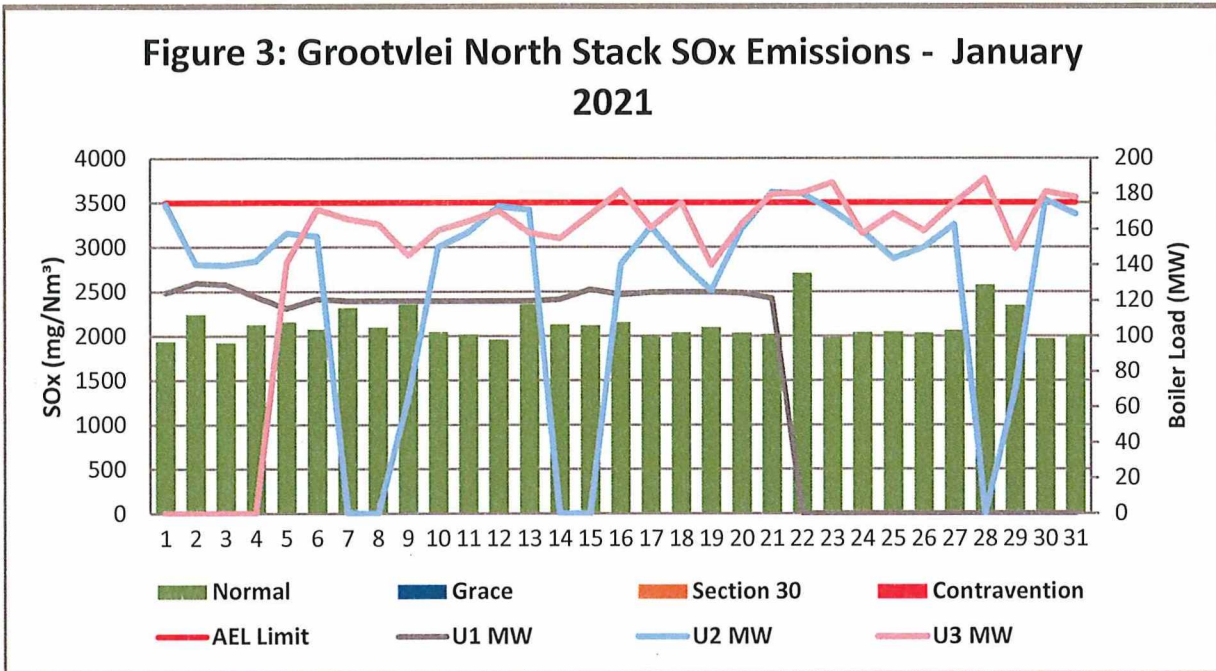


Figure 4: Grootvlei South Stack SOx Emissions - January 2021

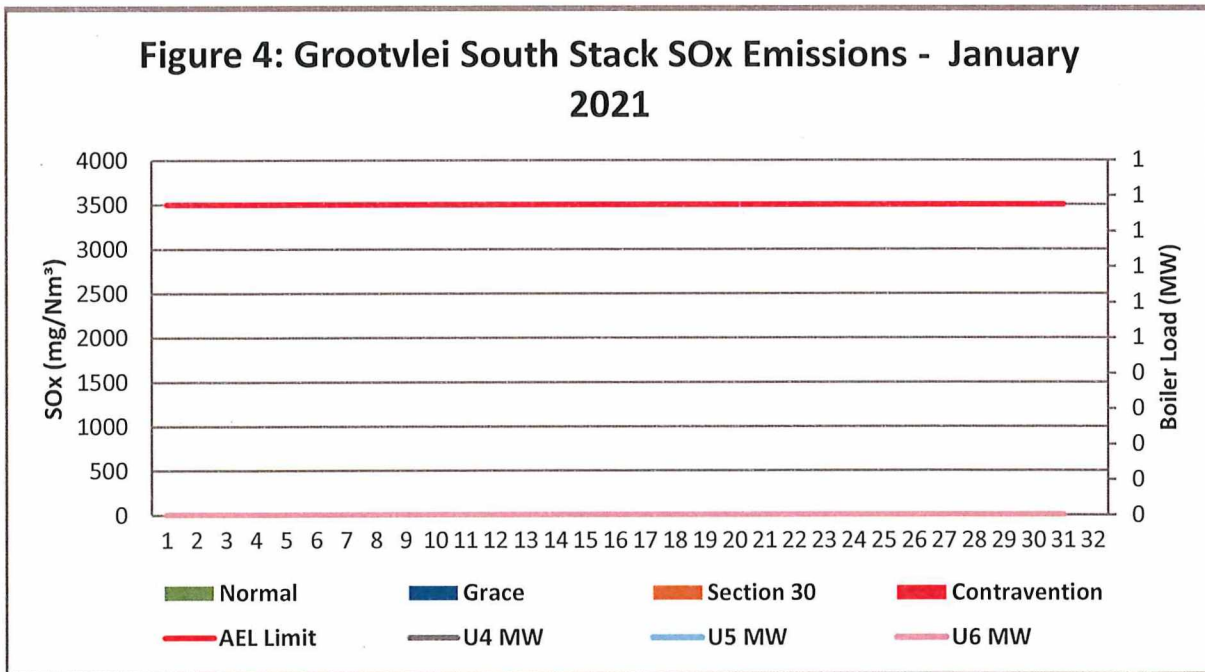


Figure 5: Grootvlei North Stack NOx Emissions - January 2021

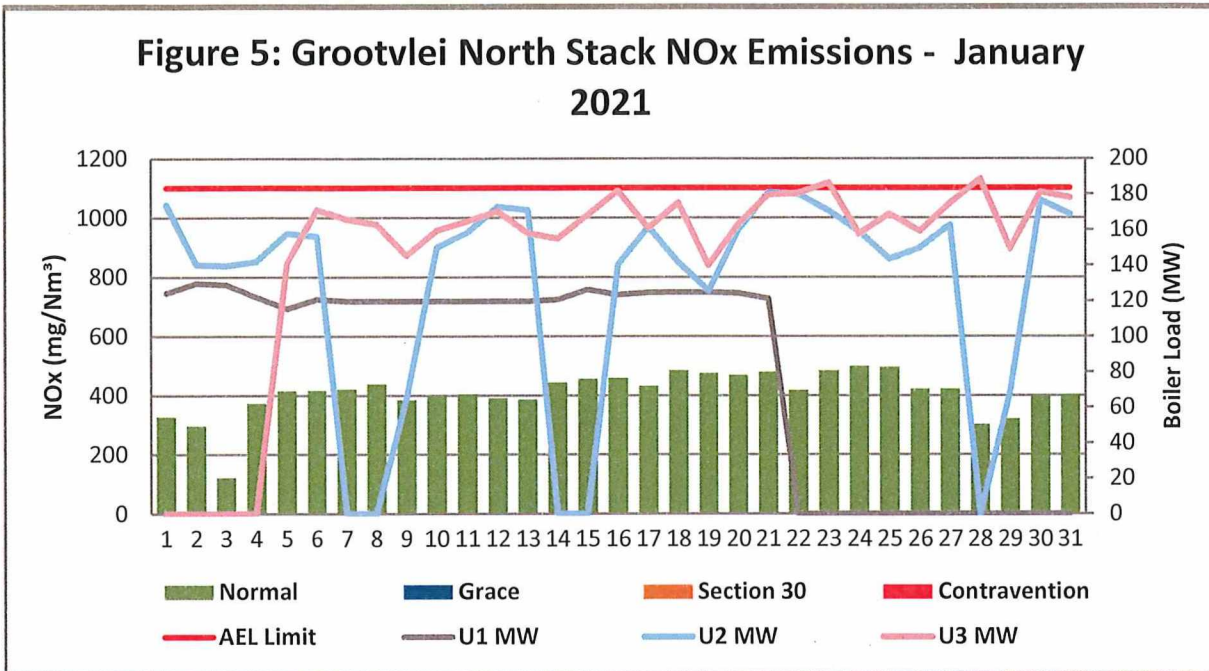
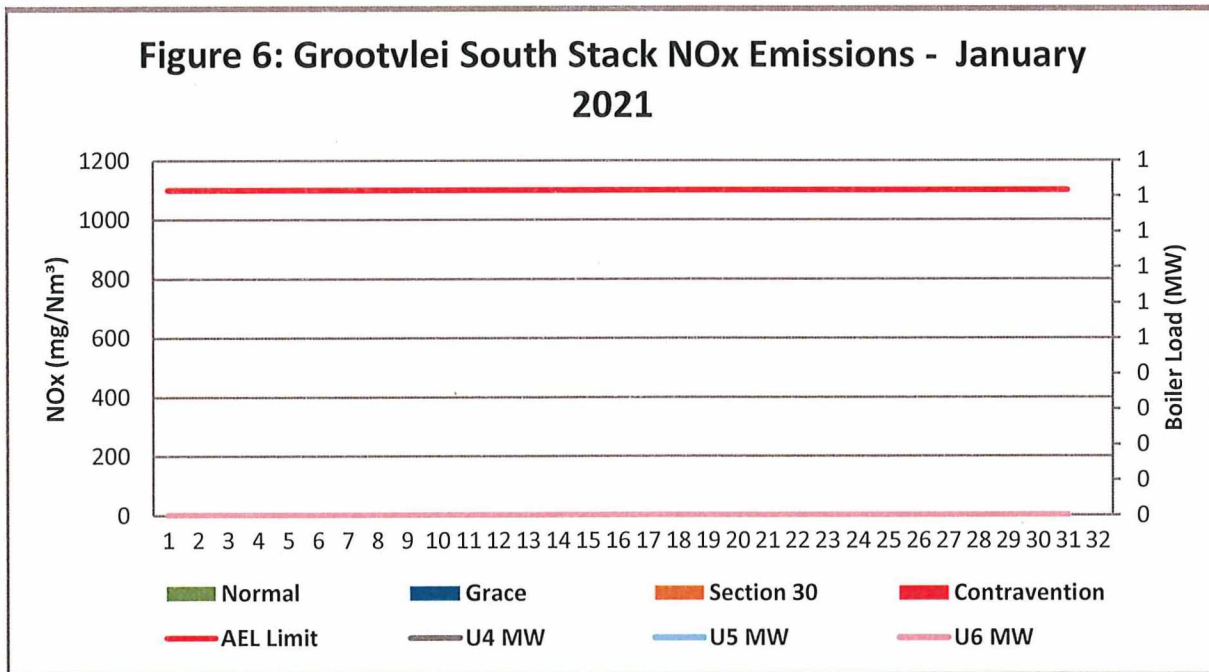


Figure 6: Grootvlei South Stack NOx Emissions - January 2021



7 SHUT DOWN AND LIGHT UP INFORMATION

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

North Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 1		Unit 2		Unit 2		Unit 2	
Breaker Open (BO)	11:25 PM	2021/01/21	10:35 AM	2021/01/02	7:50 PM	2021/01/06	11:35 AM	2021/01/13
Draught Group (DG) Shut Down (SD)	11:05 PM	2021/01/22	DG did not trip or SD	DG did not trip or SD	8:20 AM	2021/01/07	12:10 AM	2021/01/14
BO to DG SD (duration)	00:23:40	DD:HH:MM	n/a	DD:HH:MM	00:12:30	DD:HH:MM	00:12:35	DD:HH:MM
Fires in time	11:05 PM	2021/01/22	10:35 AM	2021/01/02	9:35 AM	2021/01/09	9:10 PM	2021/01/15
Synch. to Grid (or BC)			4:50 PM	2021/01/02	2:15 AM	2021/01/10	8:10 AM	2021/01/16
Fires in to BC (duration)		DD:HH:MM	00:06:15	DD:HH:MM	00:16:40	DD:HH:MM	00:11:00	DD:HH:MM
Emissions below limit from BC (end date)	not > limit	not > limit	not > limit	not > limit	not > limit	not > limit	not > limit	not > limit
Emissions below limit from BC (duration)		DD:HH:MM	n/a	DD:HH:MM	n/a	DD:HH:MM	n/a	DD:HH:MM

North Stack ...Cont.	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 2		Unit 3		Unit 3		Unit 3	
Breaker Open (BO)	9:40 PM	2021/01/27			2:00 PM	2021/01/09		
Draught Group (DG) Shut Down (SD)	11:15 AM	2021/01/28			DG did not trip or SD	DG did not trip or SD		
BO to DG SD (duration)	00:13:35	DD:HH:MM		DD:HH:MM	n/a	DD:HH:MM		DD:HH:MM
Fires in time	11:30 AM	2021/01/29	1:55 PM	2021/01/04	2:00 PM	2021/01/09		
Synch. to Grid (or BC)	8:45 PM	2021/01/29	7:10 AM	2021/01/05	4:05 PM	2021/01/09		
Fires in to BC (duration)	00:09:15	DD:HH:MM	00:17:15	DD:HH:MM	00:02:05	DD:HH:MM		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	n/a	DD:HH:MM	n/a	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 January-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

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 January-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 January-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. North stack SOx values for December were lower than expected QAUL 2 averages used.



Environmental Department 08/02/2021
Date



Boiler Engineering 07-02-2021
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