Eskom

Generation

Gert Sibande District Municipality
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AND

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GROOTVLEI POWER STATION

Atmospheric Emission License GPS/0015/2015/F02

BOILER ENGINEERING MANAGER	2025/07/17 **DATE**
ENGINEERING MANAGER	2025/07/17 **DATE**
ENVIRONMENTAL MANAGER	2025/07/17 **DATE**

JUNE 2025

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 Jun-2025
	Coal	Tons	*650 000*	*109 675.9*
	Fuel Oil	Tons	*20 000*	*3436.07*
Production Rates	**Product / By-Product Name**	**Units**	**Maximum Production Capacity Permitted**	**Indicative Production Rate Jun-2025**
	Energy	GWh	*864*	*200.96*
	Ash	Tons	*300 000*	*25 740*
	RE PM	kg/MWh	*not specified*	*0.23*

Note: Maximum energy production is calculated as:(200MW x 6 Units) x 24hrs x Days in month/1000 = GWh.

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
CV Content	MJ/kg	18-24	21.13
Sulphur Content	%	< 1.46	0.65
Ash Content	%	24.7 to < 38.1	23.47

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SO_2	NO
North	100	3500	1100
South	50	3500	1100

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Effieciency
Unit 1	Fabric Filter Plant (FFP)	99.848%
Unit 2	Fabric Filter Plant (FFP)	99.864%
Unit 3	Fabric Filter Plant (FFP)	99.810%
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	O_2
North	98.1	0.0	0.0	0.0
South				

Note: NOx emissions is measured as NO in PPM. Final NOx value is expressed as total NO_2

6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of June-2025

Associated Unit/Stack	PM (tons)	SO_2 (tons)	NO_x (tons)
Unit 1	12.04	495.0	188.7
Unit 2	19.67	428.0	163.2
Unit 3	13.72	279.5	106.5
Unit 4	0.00	0.0	0.0
Unit 5	0.00	0.0	0.0
Unit 6	0.00	0.0	0.0
SUM	45.43	1 202.5	458.4

Table 6.2: Operating days in compliance to PM AEL Limit - June 2025

Associated Unit/Stack	Normal	Grace	Section 30	Total Exceedance	Average PM (mg/Nm^3)
North	25	1	0	1	0.0
South	0	0	0	0	
SUM	**25**	**1**	**0**	**1**	

Table 6.3: Operating days in compliance to SO_2 AEL Limit - June 2025

Associated Unit/Stack	Normal	Grace	Section 30	Total Exceedance	Average SO_2 (mg/Nm^3)
North	27	0	0	0	0.0
South	0	0	0	0	
SUM	**27**	**0**	**0**	**0**	

Table 6.4: Operating days in compliance to NOx AEL Limit - June 2025

Associated Unit/Stack	Normal	Grace	Section 30	Total Exceedance	Average NOx (mg/Nm^3)
North	27	0	0	0	0.0
South	0	0	0	0	
SUM	**27**	**0**	**0**	**0**	

Note: NOx emissions is measured as NO in PPM. Final NOx value is expressed as total NO_2

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		

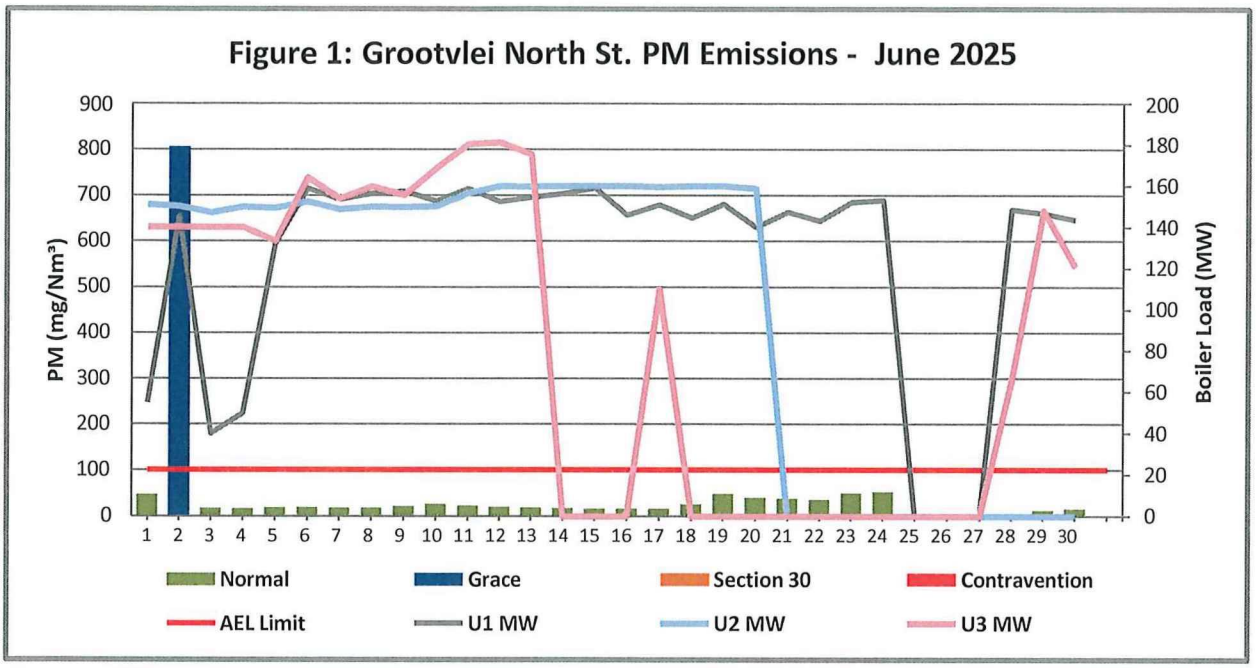
Figure 1: Grootvlei North St. PM Emissions - June 2025
PM (mg/Nm³)
Boiler Load (MW)
900
800
700
600
500
400
300
200
100
0
200
180
160
140
120
100
80
60
40
20
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Normal
Grace
Section 30
Contravention
AEL Limit
U1 MW
U2 MW
U3 MW

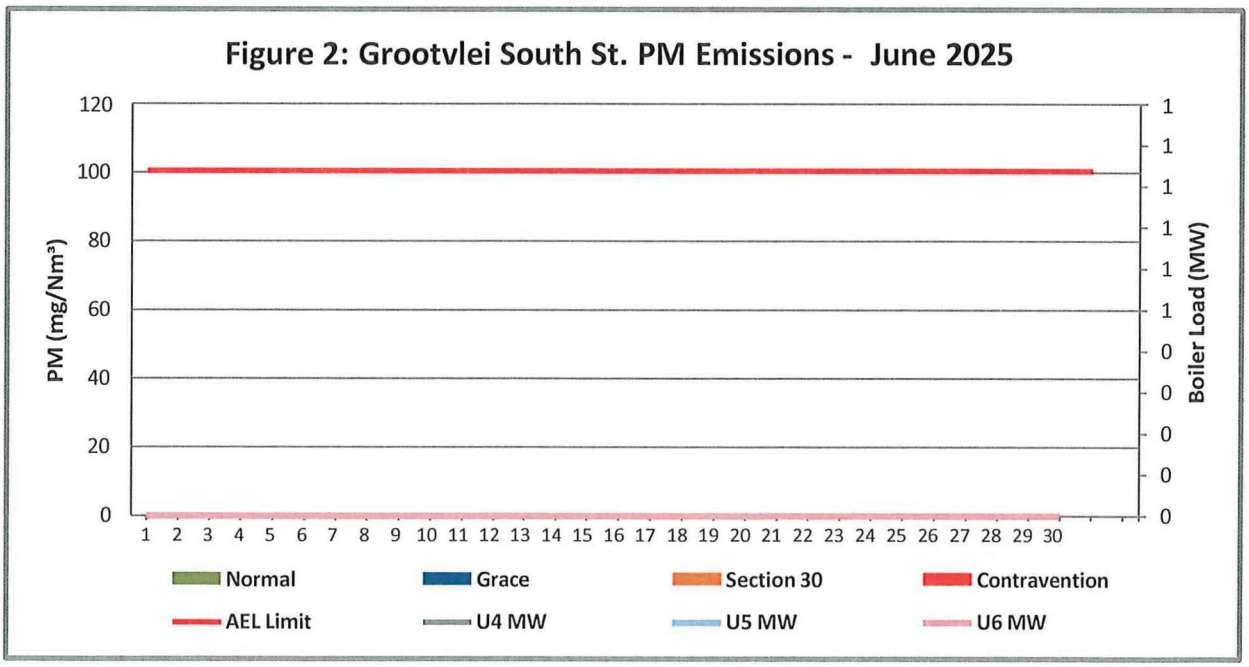
Figure 2: Grootvlei South St. PM Emissions - June 2025
PM (mg/Nm³)
Boiler Load (MW)
120
100
80
60
40
20
0
1
1
1
1
1
1
0
0
0
0
0
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Normal
Grace
Section 30
Contravention
AEL Limit
U4 MW
U5 MW
U6 MW

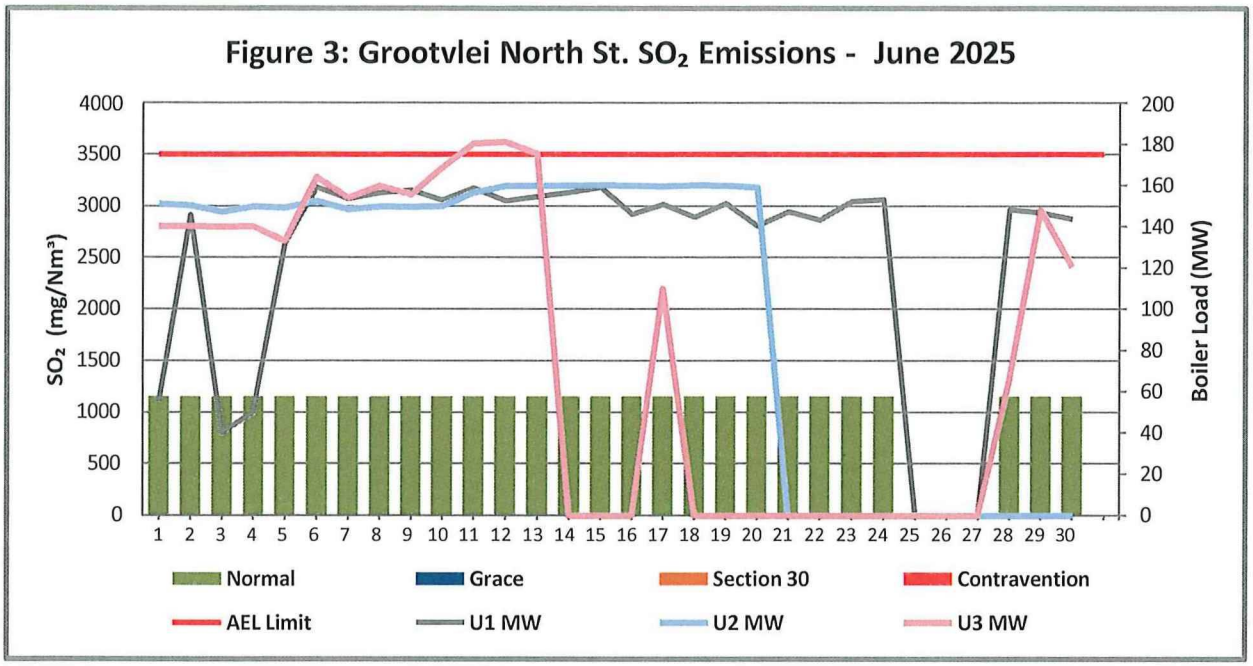
Figure 3: Grootvlei North St. SO2 Emissions - June 2025
SO2 (mg/Nm3)
Boiler Load (MW)
4000
3500
3000
2500
2000
1500
1000
500
0
200
180
160
140
120
100
80
60
40
20
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Normal
Grace
Section 30
Contravention
AEL Limit
U1 MW
U2 MW
U3 MW

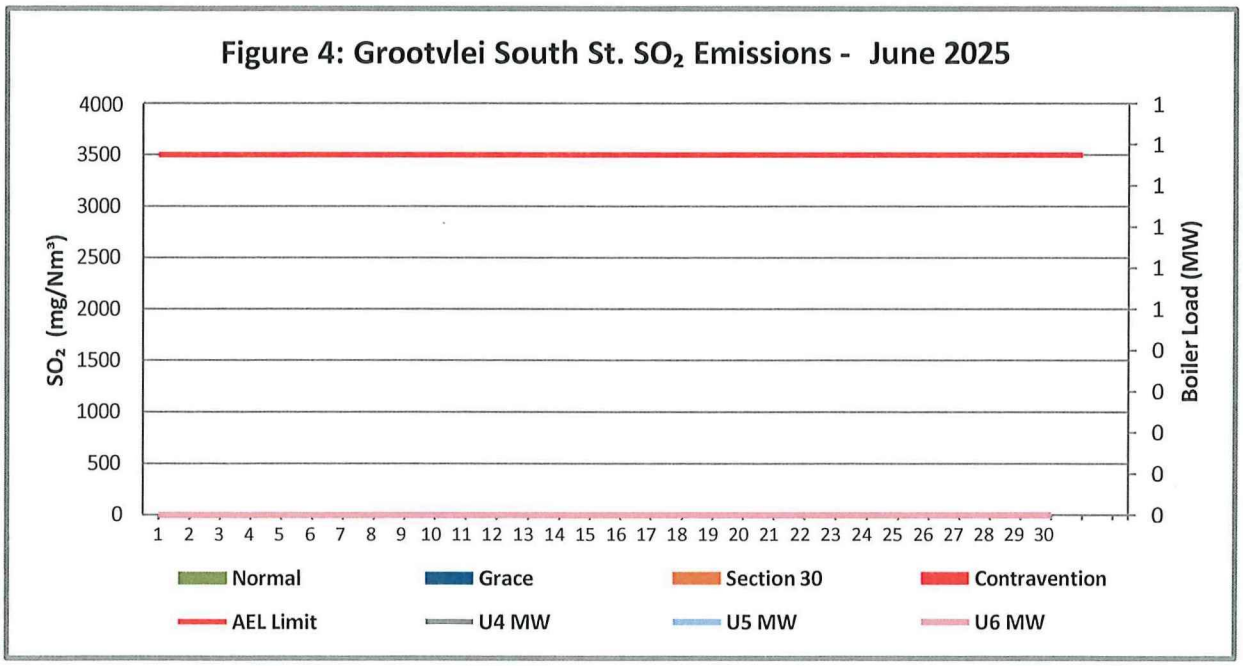
Figure 4: Grootvlei South St. SO2 Emissions - June 2025
SO2 (mg/Nm3)
Boiler Load (MW)
4000
3500
3000
2500
2000
1500
1000
500
0
1
1
1
1
1
1
0
0
0
0
0
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Normal
Grace
Section 30
Contravention
AEL Limit
U4 MW
U5 MW
U6 MW

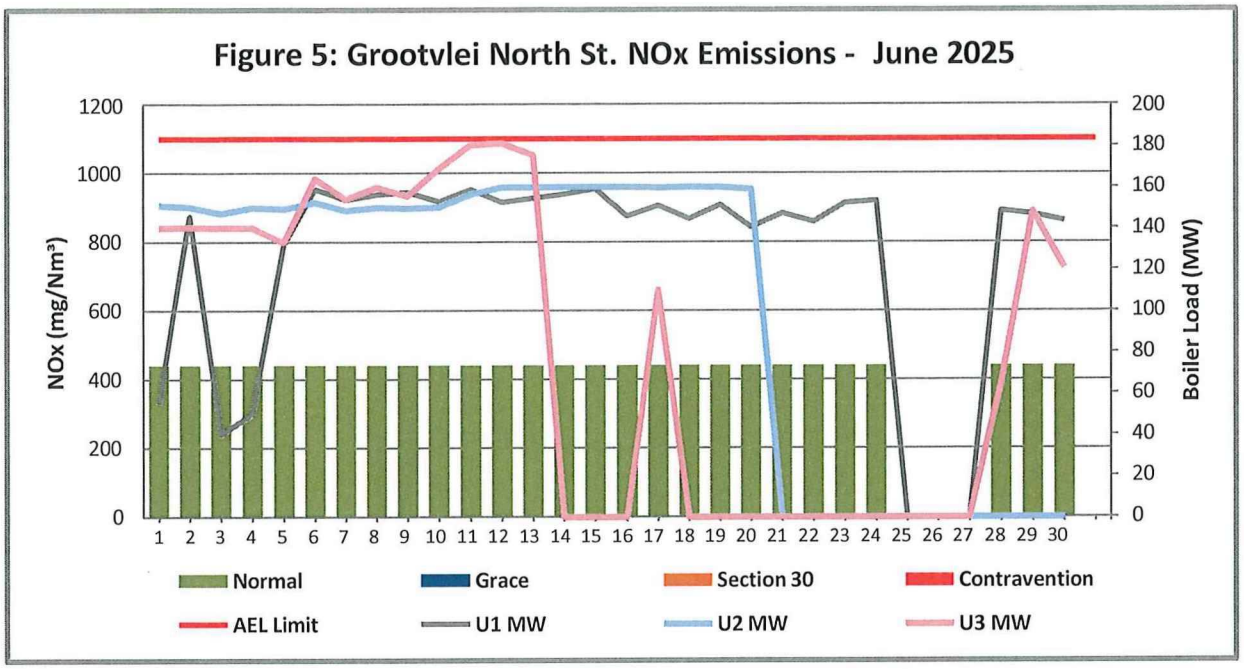
Figure 5: Grootvlei North St. NOx Emissions - June 2025
NOx (mg/Nm³)
Boiler Load (MW)
1200
1000
800
600
400
200
0
200
180
160
140
120
100
80
60
40
20
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Normal
Grace
Section 30
Contravention
AEL Limit
U1 MW
U2 MW
U3 MW

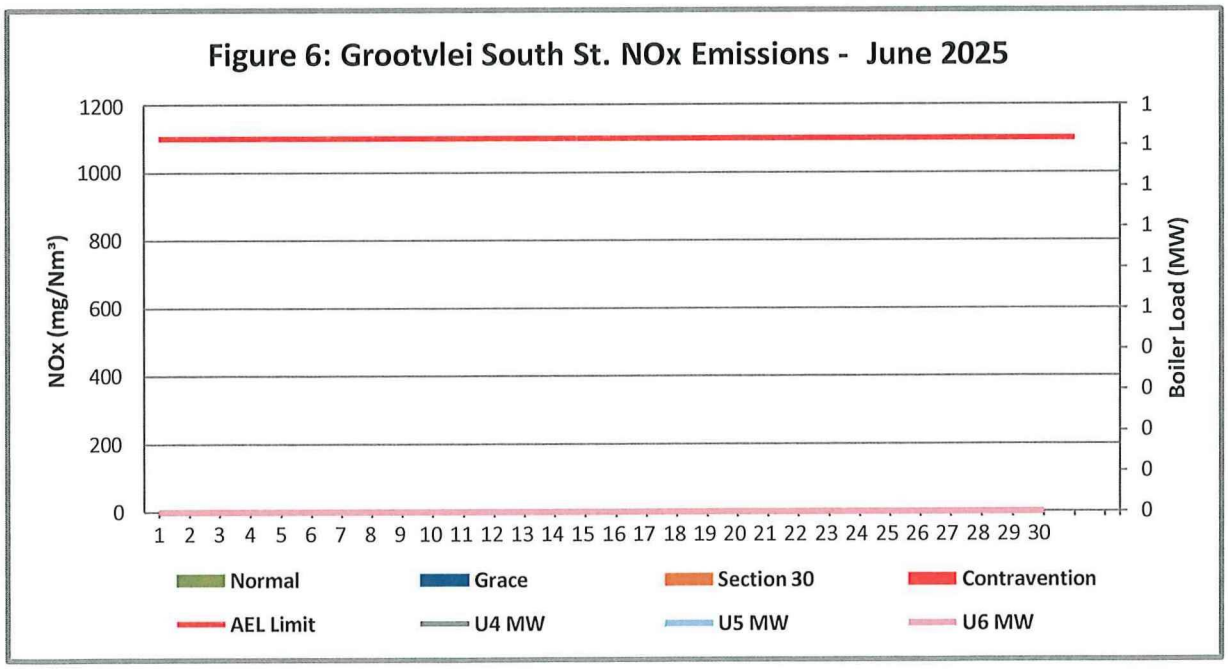
Figure 6: Grootvlei South St. NOx Emissions - June 2025
NOx (mg/Nm³)
Boiler Load (MW)
1200
1000
800
600
400
200
0
1
1
1
1
1
1
0
0
0
0
0
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Normal
Grace
Section 30
Contravention
AEL Limit
U4 MW
U5 MW
U6 MW

7 SHUT DOWN AND LIGHT UP INFORMATION

Table 7.1. PM Start-up information for the month of June-2025

North Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 1		Unit 1		Unit 1		Unit 2	
Breaker Open (BO)	BO previously	BO previously	5:00 pm	2025/06/03	7:20 am	2025/06/24	5:25 pm	2025/06/20
Draught Group (DG) Shut Down (SD)	n/a	n/a	5:20 pm	2025/06/03	11:25 pm	2025/06/24	12:30 am	2025/06/21
BO to DG SD (duration)	n/a	DD:HH:MM	00:00:20	DD:HH:MM	00:16:05	DD:HH:MM	00:07:05	DD:HH:MM
Fires in time	10:20 am	2025/06/01	4:50 am	2025/06/04	8:20 pm	2025/06/27		
Synch. to Grid (or BC)	6:20 pm	2025/06/01	1:45 pm	2025/06/04	8:50 am	2025/06/28		
Fires in to BC (duration)	00:08:00	DD:HH:MM	00:08:55	DD:HH:MM	00:12:30	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

North Stack ...Cont.	Event 5		Event 6		Event 7		Event 8	
Unit No.	Unit 3		no event		no event		no event	
Breaker Open (BO)	11:10 am	2025/06/13						
Draught Group (DG) Shut Down (SD)	9:30 pm	2025/06/13						
BO to DG SD (duration)	00:10:20	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time	1:00 am	2025/06/28						
Synch. to Grid (or BC)	5:35 pm	2025/06/28						
Fires in to BC (duration)	00:16:35	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	not > limit	not > limit						
Emissions below limit from BC (duration)	n/a	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM

North Stack …Cont	Event 9		Event 10		Event 11		Event 12	
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	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

7.2: Point Source emissions released during start-up (fires-in) and Shut-down (SD) for the month of June-2025 in mg/Nm³

[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 June-2025

	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 June-2025

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
(Insert name of affected person/source)	*(Insert root cause for incident)*	*(Insert emissions associated with incident)*	*(Insert dispersion model information where applicable)*	*(Insert mitigation measures taken)*	*(Insert date of implementation of mitigation method)*

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 Acknowledg-ment	Date DEA Acceptabe	Comments / Reference No.

11 General

South Stack off. The correlation test has expired and we're still awaiting PO approval before sending it to service providers. Testing will be planned based on plant conditions. The PM exceedance on 2 June was due to 400 leaking bags burnt during light-up, caused by a full dust hopper and fuel oil carryover. Gas reliability was zero as surrogate values were used for reporting. The gas issue was resolved at the end of June, and full calibration is pending before continuous use.

17/07/2025
Environmental Department Date

17/07/2025
Boiler Engineering Date

T.S. Mokgosi 17/07/2025
General Manager Date

Compiled by: Boiler Engineering Department — FFP System Engineer

For: Department of Environmental Affairs and Tourism — Chief Air Pollution Control Officer

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