



Generation

Gert Sibande District Municipality
Corner of Joubert & Oosthuise Streets
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AND

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GROOTVLEI POWER STATION

Atmospheric Emission License GPS/0015/2015/F02

BOILER ENGINEERING MANAGER

2022/07/12

DATE

ENGINEERING MANAGER

12/07/2022

DATE

ENVIRONMENTAL MANAGER

2022 July 12

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 Jun-2022 |
|----------------------------|---------------------------|---------------------------------------|---------------------------|
| | Coal | 650 000 | 157 824.0 |
| | Fuel Oil | 18 000 | 5528.1 |
| Production Rates | Product / By-Product Name | Maximum Production Capacity Permitted | Production Rate Jun-2022 |
| | Energy | 806.4 | 257.80 |
| | Ash | 300 000 | 47 994 |
| | RE PM | not specified | 0.15 |

2 ENERGY SOURCE CHARACTERISTICS

| Coal Characteristic | Units | Stipulated Range | Monthly Average Content |
|---------------------|-------|------------------|-------------------------|
| Sulphur Content | % | 0.6 to < 1.2 | 0.86 |
| Ash Content | % | 27 to < 32 | 30.41 |

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 | |
|-----------------------|---------------------------|---------------|
| Unit 1 | Fabric Filter Plant (FFP) | 99.906% |
| Unit 2 | Fabric Filter Plant (FFP) | 99.908% |
| Unit 3 | Fabric Filter Plant (FFP) | 99.909% |
| 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 | 100.0 | 99.2 | 99.4 | 100.0 |
| South | | | | |

6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of June-2022

| Associated Unit/Stack | PM (tons) | SO ₂ (tons) | NO ₂ (tons) |
|-----------------------|--------------|------------------------|------------------------|
| Unit 1 | 9.74 | 465.7 | 162.8 |
| Unit 2 | 14.05 | 784.1 | 260.8 |
| Unit 3 | 16.08 | 817.3 | 273.3 |
| 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 | 39.86 | 2 067.1 | 696.9 |

Table 6.2: Operating days in compliance to PM AEL Limit - June 2022

| Associated Unit/Stack | Normal | Grace | Section 30 | Total Exceedance | Average PM (mg/Nm ³) |
|-----------------------|-----------|----------|------------|------------------|----------------------------------|
| North | 31 | 0 | 0 | 0 | 35.8 |
| South | 0 | 0 | 0 | 0 | |
| SUM | 31 | 0 | 0 | 0 | |



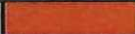

Table 6.3: Operating days in compliance to SO_x AEL Limit - June 2022

| Associated Unit/Stack | Normal | Grace | Section 30 | Total Exceedance | Average SO _x (mg/Nm ³) |
|-----------------------|-----------|----------|------------|------------------|---|
| North | 31 | 0 | 0 | 0 | 1 778.9 |
| South | 0 | 0 | 0 | 0 | |
| SUM | 31 | 0 | 0 | 0 | |

Table 6.4: Operating days in compliance to NO_x AEL Limit - June 2022

| Associated Unit/Stack | Normal | Grace | Section 30 | Total Exceedance | Average NO _x (mg/Nm ³) |
|-----------------------|-----------|----------|------------|------------------|---|
| North | 31 | 0 | 0 | 0 | 595.8 |
| South | 0 | 0 | 0 | 0 | |
| SUM | 31 | 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 |
| Contravention |  | |

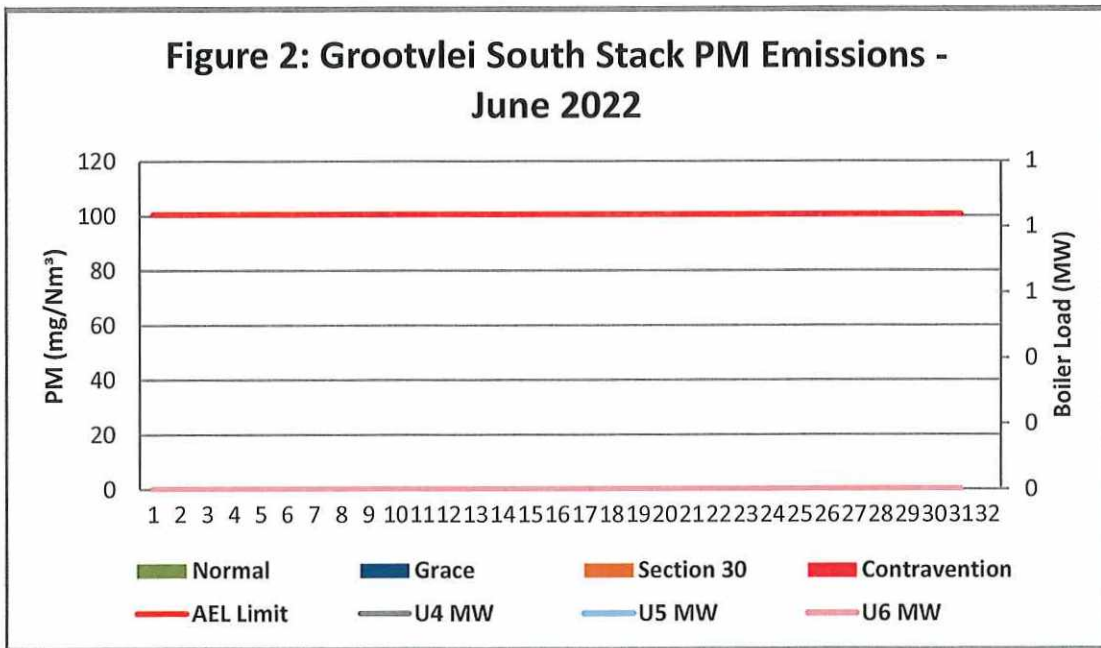
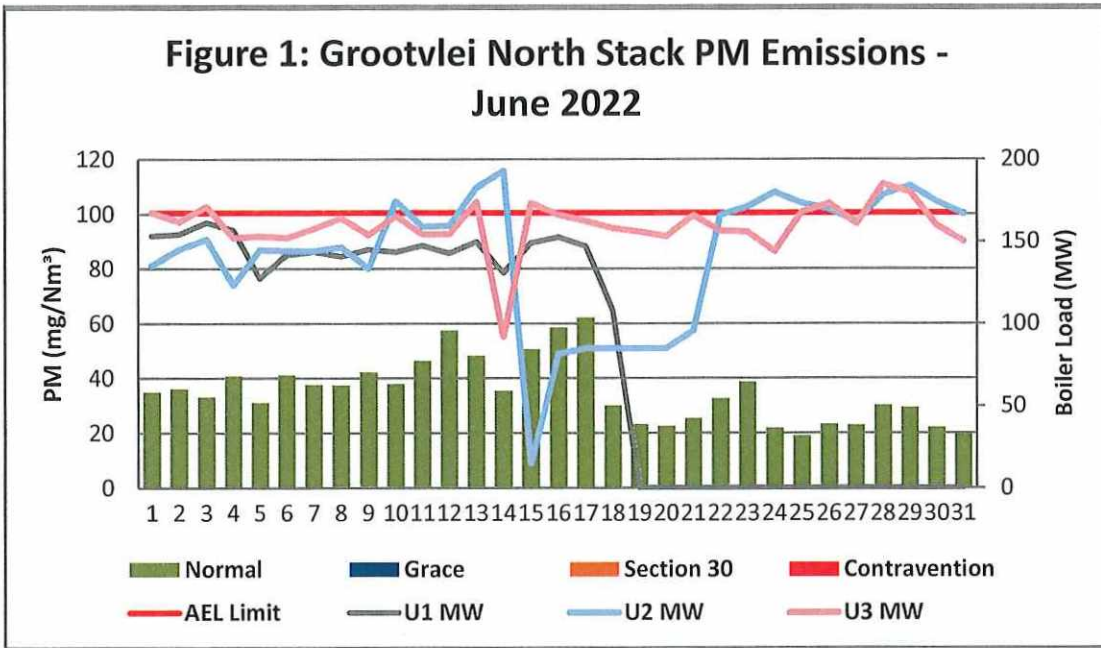


Figure 3: Grootvlei North Stack SOx Emissions - June 2022

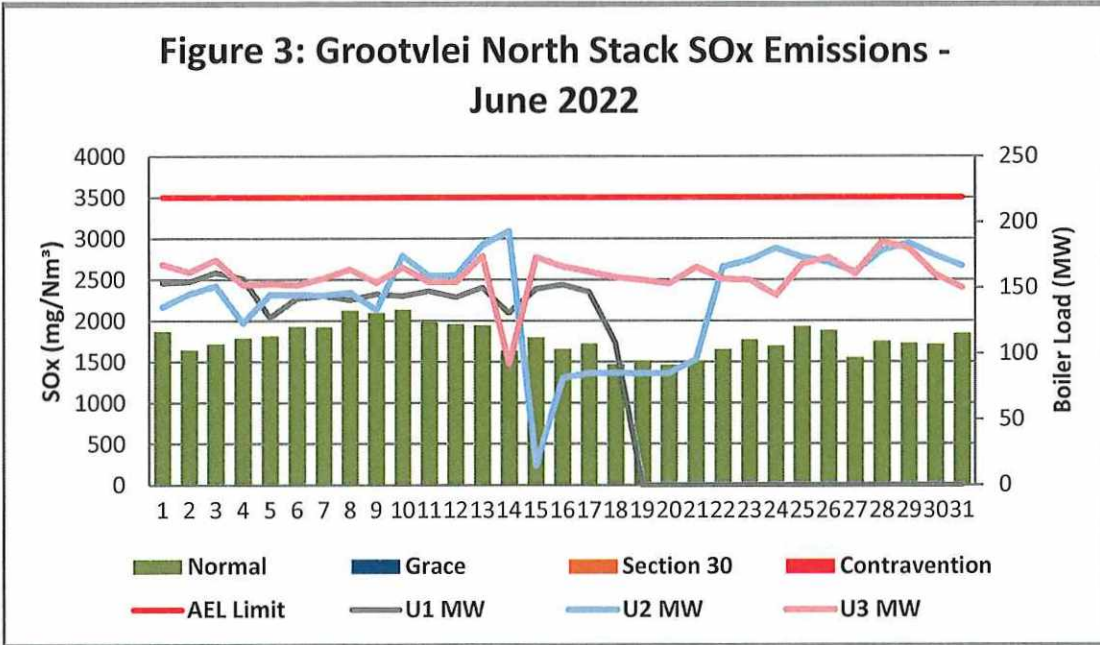


Figure 4: Grootvlei South Stack SOx Emissions - June 2022

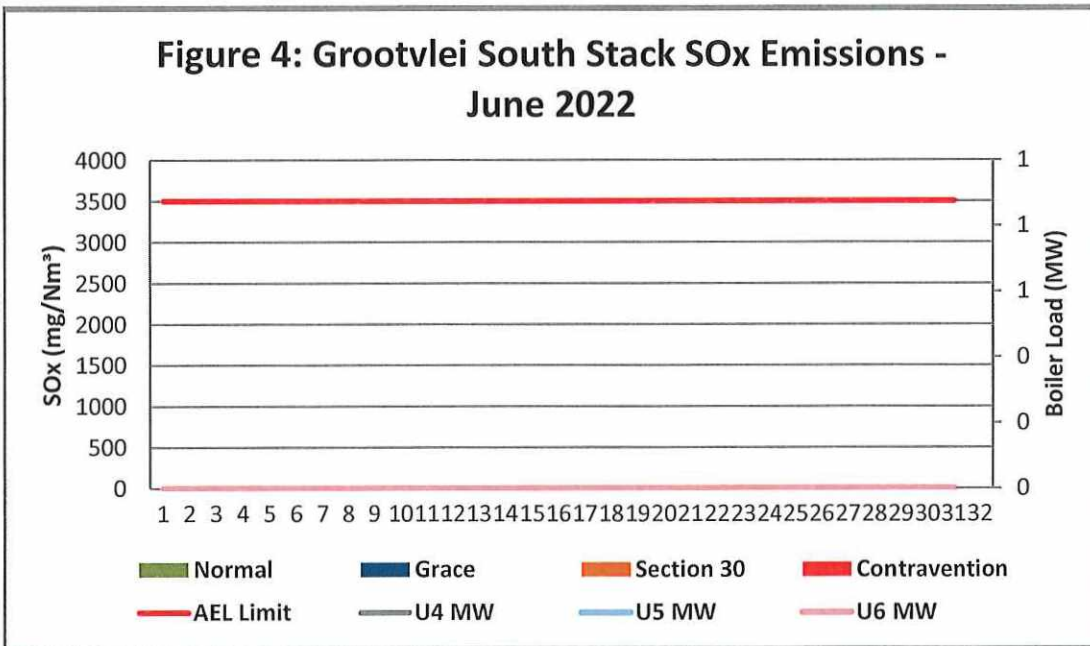


Figure 5: Grootvlei North Stack NOx Emissions - June 2022

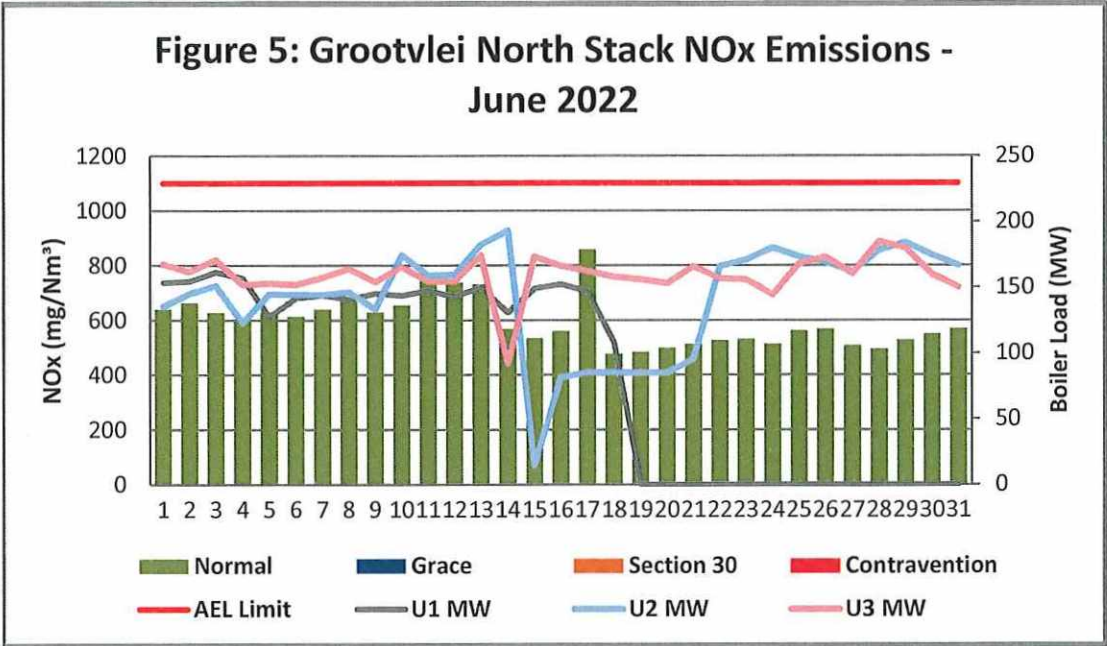
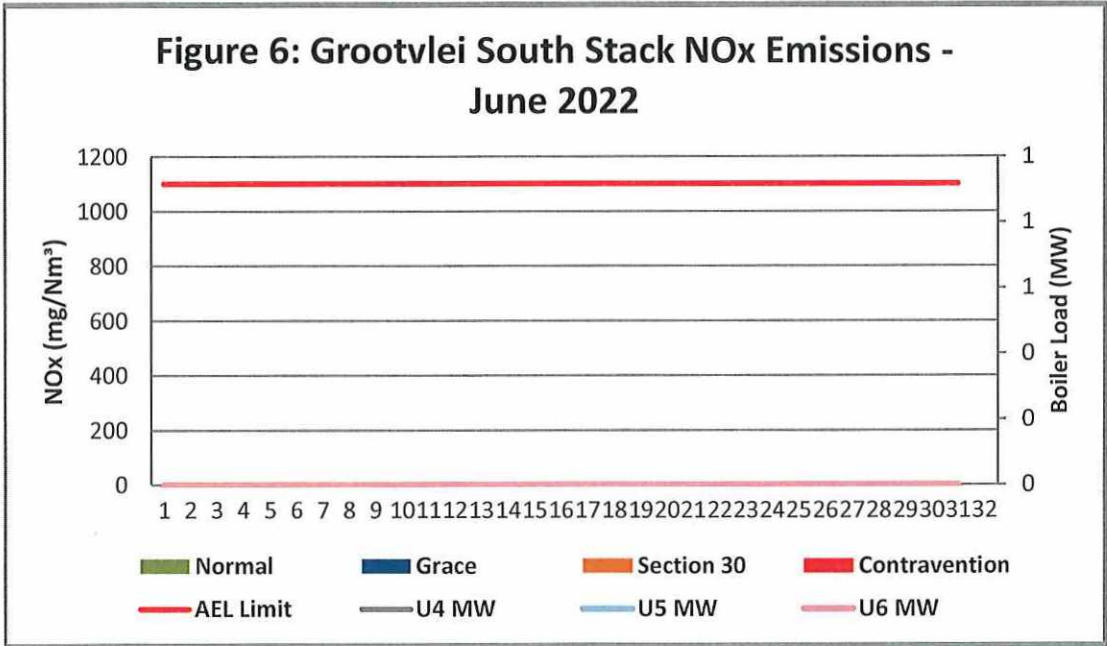


Figure 6: Grootvlei South Stack NOx Emissions - June 2022



7 SHUT DOWN AND LIGHT UP INFORMATION

Table 7.1. PM Start-up information for the month of June-2022

| North 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) | <i>8:05 AM</i> | <i>05/06/2022</i> | <i>13/06/2022</i> | <i>4:15 AM</i> | <i>18/06/2022</i> | <i>11:40 AM</i> | <i>04/06/2022</i> |
| Draught Group (DG) Shut Down (SD) | <i>DG did not trip or SD</i> | <i>DG did not trip or SD</i> | <i>DG did not trip or SD</i> | <i>3:05 PM</i> | <i>18/06/2022</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 | DD:HH:MM | <i>00:10:50</i> | DD:HH:MM | <i>n/a</i> | 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. | <i>Event 1</i> | | <i>Event 3</i> | | <i>Event 4</i> | |
|--|-----------------------|-----------------------|-----------------|--|----------------|----------|
| Unit No. | <i>Unit 2</i> | | <i>no event</i> | | <i>Unit 3</i> | |
| Breaker Open (BO) | <i>9:55 PM</i> | <i>14/06/2022</i> | | | | |
| Draught Group (DG) Shut Down (SD) | <i>10:00 AM</i> | <i>15/06/2022</i> | | | | |
| BO to DG SD (duration) | <i>00:12:05</i> | DD:HH:MM | DD:HH:MM | | DD:HH:MM | DD:HH:MM |
| Fires in time | <i>9:30 PM</i> | <i>15/06/2022</i> | | | | |
| Synch. to Grid (or BC) | <i>11:10 AM</i> | <i>16/06/2022</i> | | | | |
| Fires in to BC (duration) | <i>00:13:40</i> | 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) | <i>n/a</i> | 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 June-2022 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

