

**Ms Nompumelelo Simelane**  
Nkangala District Municipality  
PO BOX 437  
**Middelburg**  
1050

Date:  
01 April 2025

Enquiries:  
Livhuwani Tshilate  
017 615 2317

Ref: 17/AEL/MP312/11/09

Dear Ms. Simelane

### **KRIEL POWER STATION'S MONTHLY STACK EMISSIONS REPORT FOR THE MONTH OF MAY 2024**

This serves as the monthly report required in terms of Section 7.4 in Kriel Power Station's Atmospheric Emission License 17/AEL/MP312/11/09. The emissions are for the month of May 2024. Verified emissions of particulates matter, SO<sub>2</sub> and NO<sub>x</sub> (as NO<sub>2</sub>) are also included.

### **Raw Materials and Products**

**Table 1:** Quantity of Raw Materials and Products used/produced for the month of May 2024

| Raw Materials and Products used | Raw Material Type        | Units      | Maximum Permitted Consumption / Rate (Quantity)  | Consumption / Rate in Month of May 2024 |
|---------------------------------|--------------------------|------------|--------------------------------------------------|-----------------------------------------|
|                                 | Coal                     | Tons/month | 1 227 600                                        | 536 582.00                              |
|                                 | Fuel Oil                 | Tons/month | 5 000                                            | 6 688.00                                |
|                                 |                          |            |                                                  |                                         |
| Production Rates                | Product/ By-Product Name | Unit       | Maximum Production Capacity Permitted (Quantity) | Production Rate in Month of May 2024    |
|                                 | Energy                   | GWh        | 3 000/2 232                                      | 906.71                                  |
|                                 | Ash                      | Tons/month | 320 000                                          | 4624.6                                  |
|                                 | RE PM                    | kg/MWh     | not specified                                    | 4.609                                   |

1/...

## Abatement Technology

**Table 2:** Abatement Equipment Control Technology for May 2024.

| Associated Unit/Stack | Technology Type | Actual Efficiency (%) | Technology Type | SO <sub>3</sub> Utilisation (%) |
|-----------------------|-----------------|-----------------------|-----------------|---------------------------------|
| Unit 1                | ESP& SO3        | 99.24%                | SO3 Plant       | 72.69                           |
| Unit 2                | ESP& SO3        | 99.25%                | SO3 Plant       | 100.00                          |
| Unit 3                | ESP& SO3        | 99.76%                | SO3 Plant       | 100.00                          |
| Unit 4                | ESP& SO3        | Exempt                | SO3 Plant       | Exempt                          |
| Unit 5                | ESP& SO3        | 90.33%                | SO3 Plant       | 100.00                          |
| Unit 6                | ESP& SO3        | 93.37%                | SO3 Plant       | 100.00                          |

Note: ESP plant does not contain bypass mode operation; hence plant 100% Utilised.

## Energy Source Characteristics

**Table 3:** Energy Source Material Characteristics for the month of May 2024

| Characteristic  | Stipulated Range (Unit) | Monthly Average Content |
|-----------------|-------------------------|-------------------------|
| Sulphur Content | 0.6-1.2 (%)             | 0.77                    |
| Ash Content     | 27-32 (%)               | 23.66                   |

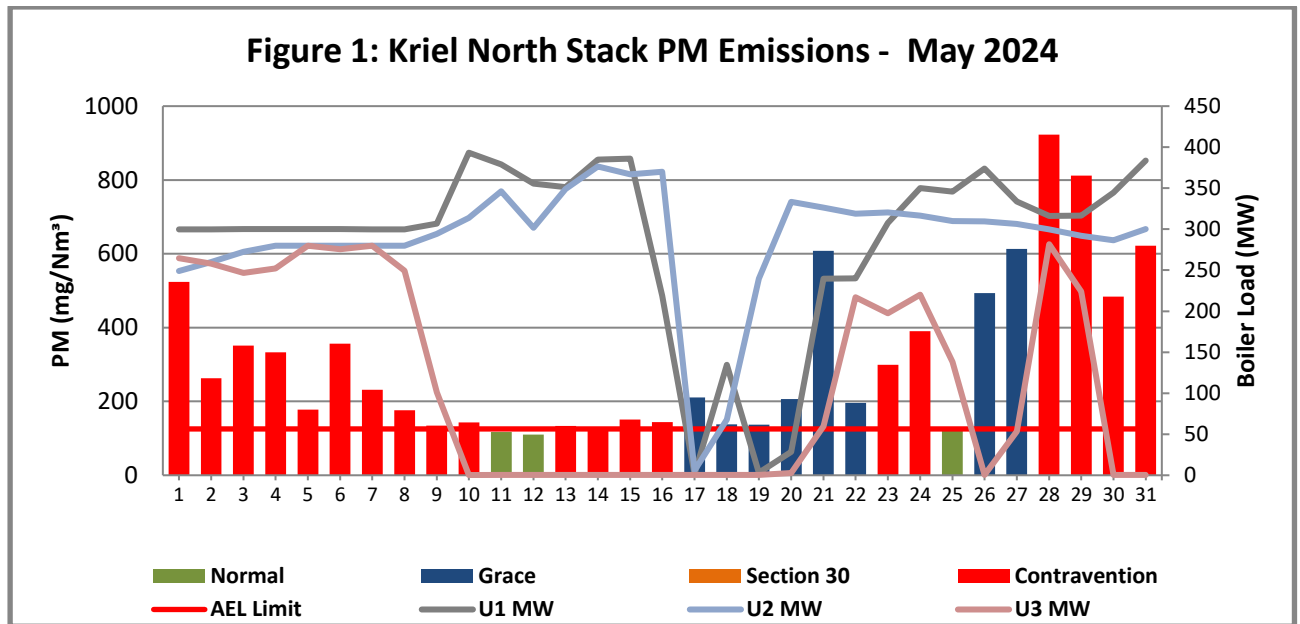
## Monthly Monitor Reliability

| Associated Unit/Stack | PM (%) | SO <sub>x</sub> (%) | NO <sub>x</sub> (%) |
|-----------------------|--------|---------------------|---------------------|
| North                 | 80.90  | 94.60               | 96.97               |
| South                 | 20.03  | 99.06               | 100.00              |

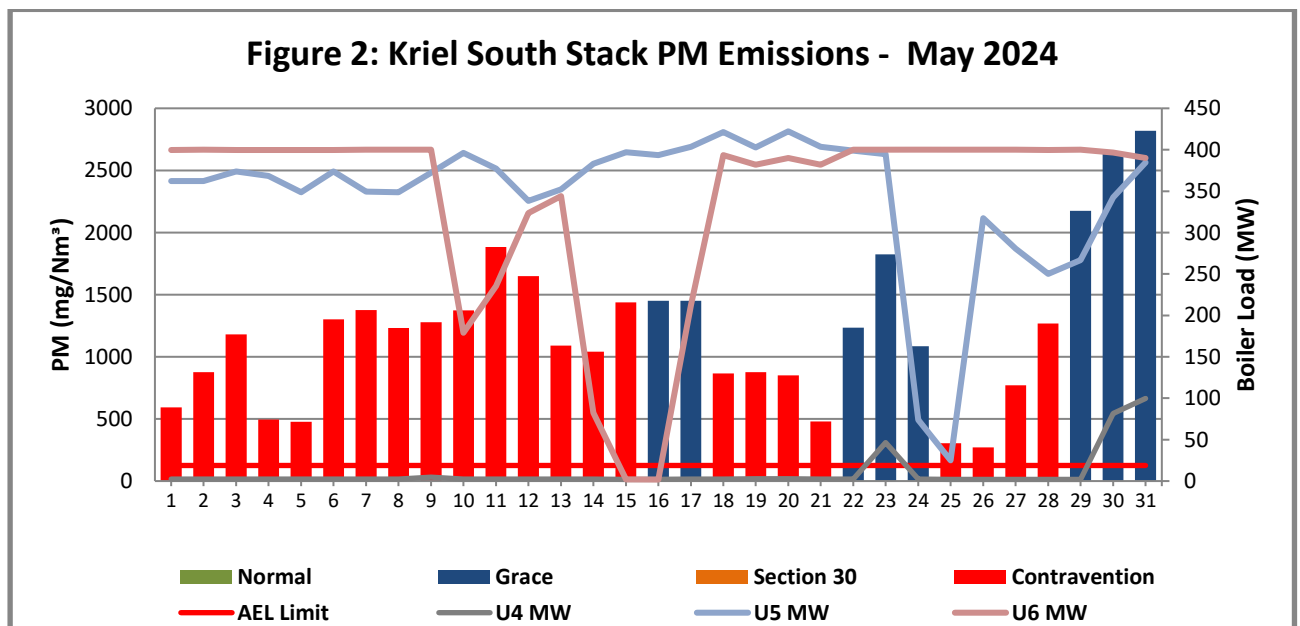
## Emissions Reporting

### Graph Legend Description

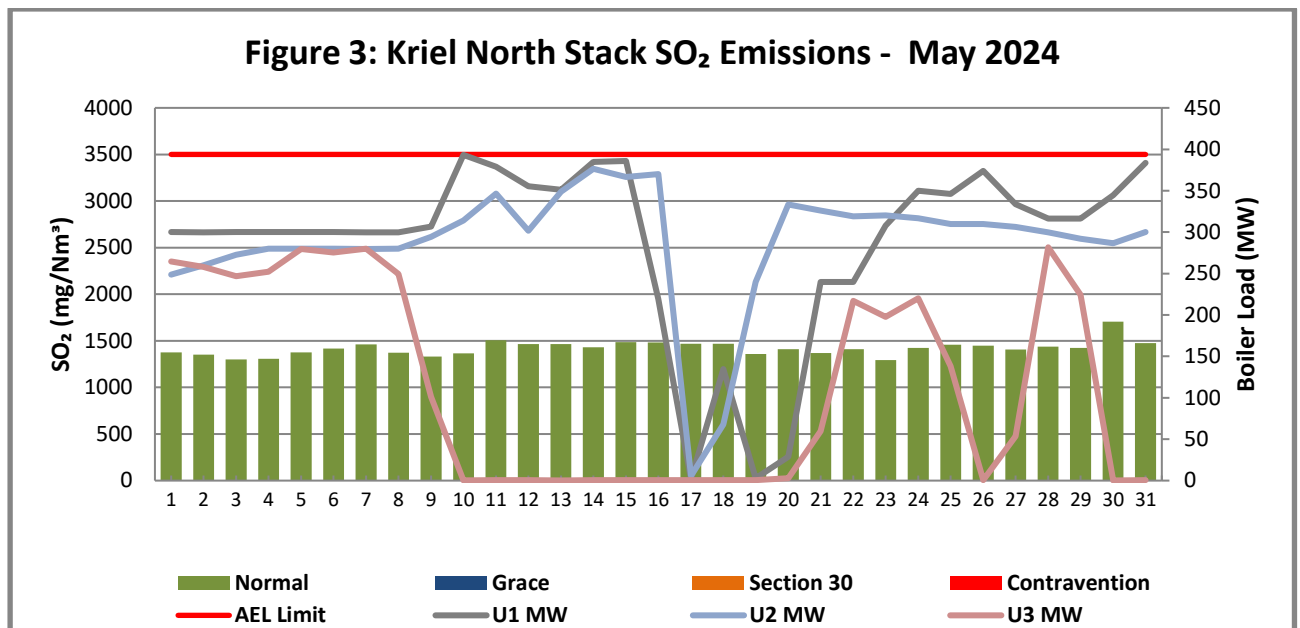
| Condition     | Colour | Description                                                      |
|---------------|--------|------------------------------------------------------------------|
| Normal        | Green  | Emissions below Emission Limit Value (ELV)                       |
| Grace         | Blue   | Emissions above the ELV during grace period                      |
| Section 30    | Orange | Emissions above ELV during a NEMA S30 incident                   |
| Contravention | Red    | Emissions above ELV but outside grace or S30 incident conditions |



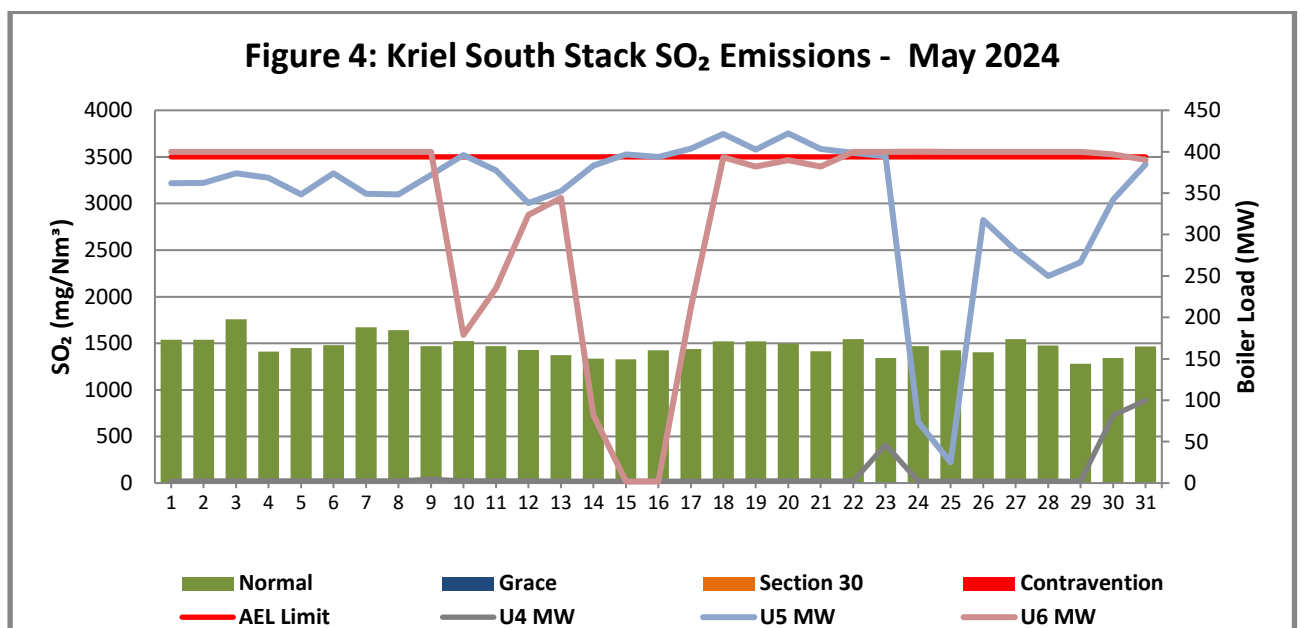
**Figure 1: PM emissions for the month of May 2024 against monthly emission limit (125  $\text{mg/Nm}^3$ ) for the North Stack.**



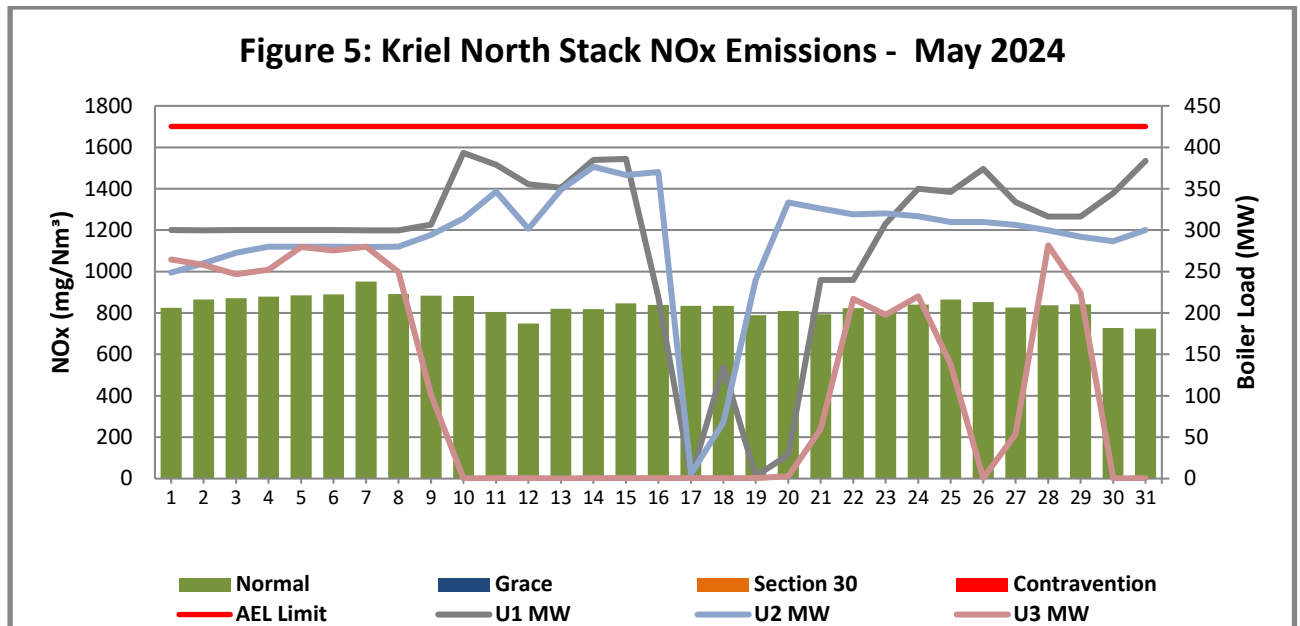
**Figure 2: PM emissions for the month of May 2024 against monthly emission limit (125  $\text{mg/Nm}^3$ ) for the South Stack.**



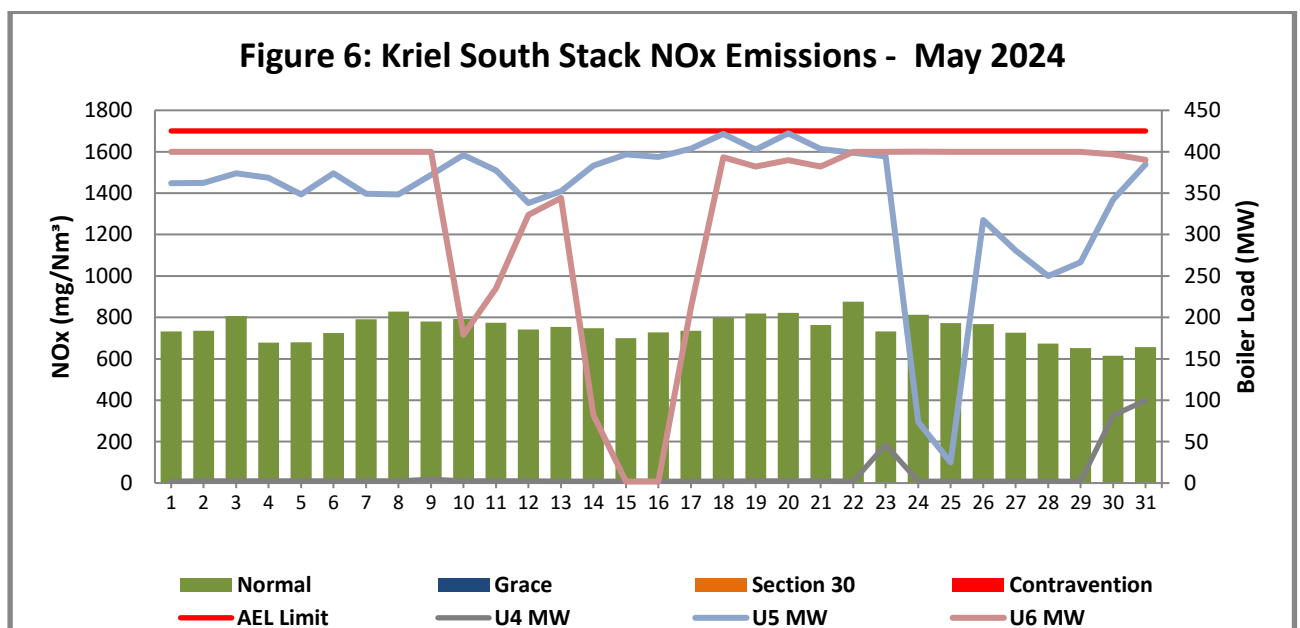
**Figure 3. SO<sub>2</sub> emissions for the month of May 2024 against monthly emission limit (3500 mg/Nm<sup>3</sup>) for the North Stack.**



**Figure 4. SO<sub>2</sub> emissions for the month of May 2024 against monthly emission limit (3500mg/Nm<sup>3</sup>) for the South Stack.**



**Figure 5. NO<sub>2</sub> emissions for the month of May 2024 against monthly emission limit (1700) for the North Stack.**



**Figure 6. NO<sub>2</sub> emissions for the month of May 2024 against monthly emission limit (1700mg/Nm<sup>3</sup>) for the South Stack.**

**Table 4:** Monthly tonnages for the month May 2024

| Unit | PM (tons) | SO <sub>2</sub> (tons) | NO <sub>2</sub> (tons) |
|------|-----------|------------------------|------------------------|
| SUM  | 4 624.6   | 7 098.5                | 3 873.0                |

**Table 5:** Each unit and respective days operating under normal operation and section 30 days respectively.

Table 5.1: Operating days in non-compliance to PM AEL Limit – May 2024

| Associated Unit/Stack | Normal | Grace | Section 30 | Contravention | Monthly Limit Exceedance | Average PM (mg/Nm <sup>3</sup> ) |
|-----------------------|--------|-------|------------|---------------|--------------------------|----------------------------------|
| North                 | 3      | 8     | 0          | 20            | 28                       | 245.0                            |
| South                 | 0      | 8     | 0          | 23            | 31                       | 1 681.5                          |

Table 5.2: Operating days in compliance to SO<sub>x</sub> AEL Limit - May 2024

| Associated Unit/Stack | Normal | Grace | Section 30 | Contravention | Total Exceedance | Average SO <sub>x</sub> (mg/Nm <sup>3</sup> ) |
|-----------------------|--------|-------|------------|---------------|------------------|-----------------------------------------------|
| North                 | 31     | 0     | 0          | 0             | 0                | 1 421.1                                       |
| South                 | 31     | 0     | 0          | 0             | 0                | 1 468.4                                       |

Table 5.3: Operating days in compliance to NO<sub>x</sub> AEL Limit – May 2024

| Associated Unit/Stack | Normal | Grace | Section 30 | Contravention | Total Exceedance | Average NO <sub>x</sub> (mg/Nm <sup>3</sup> ) |
|-----------------------|--------|-------|------------|---------------|------------------|-----------------------------------------------|
| North                 | 31     | 0     | 0          | 0             | 0                | 835.5                                         |
| South                 | 31     | 0     | 0          | 0             | 0                | 748.9                                         |

## Light up information

**Table 6:** PM Start-up information for the month of May 2024

| North Stack                              | Event 1  |            | Event 2 |          | Event 3     |             | Event 4 |          |
|------------------------------------------|----------|------------|---------|----------|-------------|-------------|---------|----------|
| Unit No.                                 | Unit 1   |            | Unit 2  |          | Unit 2      |             | Unit 3  |          |
| Breaker Open (BO)                        | 2:50 pm  | 2024/05/16 |         |          | 12:15 am    | 2024/05/17  |         |          |
| Draught Group (DG) Shut Down (SD)        | 4:05 am  | 2024/05/19 |         |          | 1:10 am     | 2024/05/17  |         |          |
| BO to DG SD (duration)                   | 02:13:15 | DD:HH:MM   |         | DD:HH:MM | 00:00:55    | DD:HH:MM    |         | DD:HH:MM |
| Fires in time                            | 3:50 pm  | 2024/05/20 |         |          | 1:15 pm     | 2024/05/18  |         |          |
| Synch. to Grid (or BC)                   | 8:40 pm  | 2024/05/20 |         |          | 4:25 pm     | 2024/05/18  |         |          |
| Fires in to BC (duration)                | 00:04:50 | DD:HH:MM   |         | DD:HH:MM | 00:03:10    | DD:HH:MM    |         | DD:HH:MM |
| Emissions below limit from BC (end date) | 12:00 am | 2024/05/22 |         |          | not > limit | not > limit |         |          |

|                                          |          |          |  |          |     |          |  |          |
|------------------------------------------|----------|----------|--|----------|-----|----------|--|----------|
| Emissions below limit from BC (duration) | 01:03:20 | DD:HH:MM |  | DD:HH:MM | n/a | DD:HH:MM |  | DD:HH:MM |
|------------------------------------------|----------|----------|--|----------|-----|----------|--|----------|

|                                          |          |            |             |             |          |            |          |          |
|------------------------------------------|----------|------------|-------------|-------------|----------|------------|----------|----------|
| North Stack ...Cont.                     | Event 1  |            | Event 2     |             | Event 3  |            | Event 4  |          |
| Unit No.                                 | Unit 3   |            | Unit 3      |             | Unit 3   |            | no event |          |
| Breaker Open (BO)                        | 9:30 am  | 2024/05/09 | 11:50 am    | 2024/05/25  | 7:25 pm  | 2024/05/29 |          |          |
| Draught Group (DG) Shut Down (SD)        | 8:40 pm  | 2024/05/10 | 11:15 am    | 2024/05/26  | 7:40 pm  | 2024/05/29 |          |          |
| BO to DG SD (duration)                   | 01:11:10 | DD:HH:MM   | 00:23:25    | DD:HH:MM    | 00:00:15 | DD:HH:MM   |          | DD:HH:MM |
| Fires in time                            | 8:35 pm  | 2024/05/19 | 9:05 am     | 2024/05/27  |          |            |          |          |
| Synch. to Grid (or BC)                   | 8:30 pm  | 2024/05/21 | 4:55 pm     | 2024/05/27  |          |            |          |          |
| Fires in to BC (duration)                | 01:23:55 | DD:HH:MM   | 00:07:50    | DD:HH:MM    |          | DD:HH:MM   |          | DD:HH:MM |
| Emissions below limit from BC (end date) | 12:00 am | 2024/05/22 | not > limit | not > limit |          |            |          |          |
| Emissions below limit from BC (duration) | 00:03:30 | 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.                                 | Unit 5  |          | Unit 5      |             | Unit 6        |               | Unit 6  |          |
| Breaker Open (BO)                        |         |          | 5:25 am     | 2024/05/24  | BO previously | BO previously |         |          |
| Draught Group (DG) Shut Down (SD)        |         |          | 9:00 am     | 2024/05/24  | n/a           | n/a           |         |          |
| BO to DG SD (duration)                   |         | DD:HH:MM | 00:03:35    | DD:HH:MM    | n/a           | DD:HH:MM      |         | DD:HH:MM |
| Fires in time                            |         |          | 2:40 am     | 2024/05/25  |               |               |         |          |
| Synch. to Grid (or BC)                   |         |          | 1:55 am     | 2024/05/26  |               |               |         |          |
| Fires in to BC (duration)                |         | DD:HH:MM | 00:23:15    | 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) |         | DD:HH:MM | n/a         | DD:HH:MM    |               | DD:HH:MM      |         | DD:HH:MM |

|                                                   |             |            |             |            |          |          |          |          |
|---------------------------------------------------|-------------|------------|-------------|------------|----------|----------|----------|----------|
| South Stack<br>...Cont.                           | Event 1     |            | Event 2     |            | Event 3  |          | Event 4  |          |
| Unit No.                                          | Unit 6      |            | Unit 6      |            | no event |          | no event |          |
| Breaker Open<br>(BO)                              | 10:45<br>am | 2024/05/10 | 5:20 am     | 2024/05/14 |          |          |          |          |
| Draught<br>Group (DG)<br>Shut Down<br>(SD)        | 11:25<br>am | 2024/05/10 | 8:05 pm     | 2024/05/14 |          |          |          |          |
| BO to DG SD<br>(duration)                         | 00:00:40    | DD:HH:MM   | 00:14:45    | DD:HH:MM   |          | DD:HH:MM |          | DD:HH:MM |
| Fires in time                                     | 11:30<br>pm | 2024/05/10 | 12:55<br>am | 2024/05/17 |          |          |          |          |
| Synch. to Grid<br>(or BC)                         | 8:00 am     | 2024/05/11 | 8:30 am     | 2024/05/17 |          |          |          |          |
| Fires in to BC<br>(duration)                      | 00:08:30    | DD:HH:MM   | 00:07:35    | DD:HH:MM   |          | DD:HH:MM |          | DD:HH:MM |
| Emissions<br>below limit<br>from BC (end<br>date) | 12:00<br>am | 2024/05/21 | 12:00<br>am | 2024/05/21 |          |          |          |          |
| Emissions<br>below limit<br>from BC<br>(duration) | 09:16:00    | DD:HH:MM   | 03:15:30    | DD:HH:MM   |          | DD:HH:MM |          | DD:HH:MM |

## Complaints Register

Table 8: Complaint for the month of May 2024

| Source<br>Code/<br>Name                                                              | Root Cause<br>Analysis | Calculation of<br>Impacts/<br>emissions<br>associated with<br>the incident | Dispersion<br>modeling of<br>pollutants<br>where<br>applicable | Measures<br>implemented<br>to prevent<br>reoccurrence | Date by which<br>measure will be<br>implemented |
|--------------------------------------------------------------------------------------|------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------|
| There was no complaint related to air quality received during the month of May 2024. |                        |                                                                            |                                                                |                                                       |                                                 |

## General

NB: The rest of the information demonstrating compliance with the emissions license conditions is supplied in the annual emission reports sent to your office.