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Date  
 2021 12. 23

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Dear Mr Mahlangu

**ARNOT POWER STATION'S MONTHLY EMISSIONS REPORT FOR THE MONTH OF NOVEMBER 2021**

This serves as the monthly report required in terms of Section 6 in Arnot Power Station's Atmospheric Emission License. The emissions are for the month of 2021, Verified emissions of particulates; SO<sub>2</sub> and NO<sub>x</sub> (as NO<sub>2</sub>) are also included

**Raw Materials and Products**

Table1 Quantity of Raw Materials and Products used/produced for the Month of November 2021

| Raw Materials and Products used | Raw Material Type        | Unit       | Maximum Permitted Consumption/ Rate (Quantity)   | Consumption/ Rate in Month of November    |
|---------------------------------|--------------------------|------------|--|---|
|                                 | Coal                     | Tons/month | 1 050 330  | 505 254 14                                |
|                                 | Fuel Oil                 | Tons/month | 10 000   | 4198 40                                   |
| Production Rates                | Product/ By-Product Name | Unit       | Maximum Production Capacity Permitted (Quantity) | Production Rate in Month of November 2021 |
|                                 | Energy                   | GWh        | 1 785 600  | 895 635                                   |
|                                 | Ash                      | Tons/month | 421 000  | 24 95                                     |

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**Abatement Technology**

Table 2. Abatement Equipment Control Technology for month of November 2021

| Associated Unit/Stack | Technology Type    | Actual Utilisation (%) for the month of November 2021 |
|-----------------------|--------------------|---|
| North Stack           | Fabric Filter Bags | 99.9%   |
| South Stack           | Fabric Filter Bags | 99.9%   |

Table 2.1 Abatement Equipment Efficiency Utilisation (%) for the month of November 2021

| Associated Unit/Stack | Technology Type           | Efficiency November 2021 |
|-----------------------|---------------------------|--------------------------|
| North                 | Fabric Filter Plant (FFP) | 100%                     |
| South                 | Fabric Filter Plant (FFP) | 100%                     |

**Energy Source Characteristics**

Table 3 Energy Source Material Characteristics for the month of November 2021

| Characteristic  | Stipulated Range (Unit) | Monthly Average Content |
|-----------------|-------------------------|-------------------------|
| Sulphur Content | 0.5 to < 1 (%)          | 0.648                   |
| Ash Content     | 17 to < 40 (%)          | 24.95                   |

Table 4 Operating days in compliance to PM AEL Limit –November 2021

| Associated Unit/Stack | Normal    | Grace    | Section 30 | Contravention | Total Exceedance | Average PM (mg/Nm <sup>3</sup> ) |
|-----------------------|-----------|----------|------------|---------------|------------------|----------------------------------|
| North                 | 30        | 0        | 0          | 0             | 0                | 30.9                             |
| South                 | 30        | 0        | 0          | 0             | 0                | 42.1                             |
| <b>SUM</b>            | <b>60</b> | <b>0</b> | <b>0</b>   | <b>0</b>      | <b>0</b>         |                                  |

Table 5 Operating days in compliance to NOx AEL Limit – November 2021

| Associated Unit/Stack | Normal    | Grace    | Section 30 | Contravention | Total Exceedance | Average NOx (mg/Nm <sup>3</sup> ) |
|-----------------------|-----------|----------|------------|---------------|------------------|-----------------------------------|
| North                 | 30        | 0        | 0          | 0             | 0                | 577.8                             |
| South                 | 30        | 0        | 0          | 0             | 0                | 602.2                             |
| <b>SUM</b>            | <b>60</b> | <b>0</b> | <b>0</b>   | <b>0</b>      | <b>0</b>         |                                   |

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Table 6: Operating days in compliance to SOx AEL Limit –November 2021

| Associated Unit/Stack | Normal | Grace | Section 30 | Contravention | Total Exceedance | Average SOx (mg/Nm <sup>3</sup> ) |
|-----------------------|--------|-------|------------|---------------|------------------|-----------------------------------|
| North                 | 30     | 0     | 0          | 0             | 0                | 1443.8                            |
| South                 | 30     | 0     | 0          | 0             | 0                | 1388.8                            |
| SUM                   | 60     | 0     | 0          | 0             | 0                |                                   |

**Emissions Reporting**

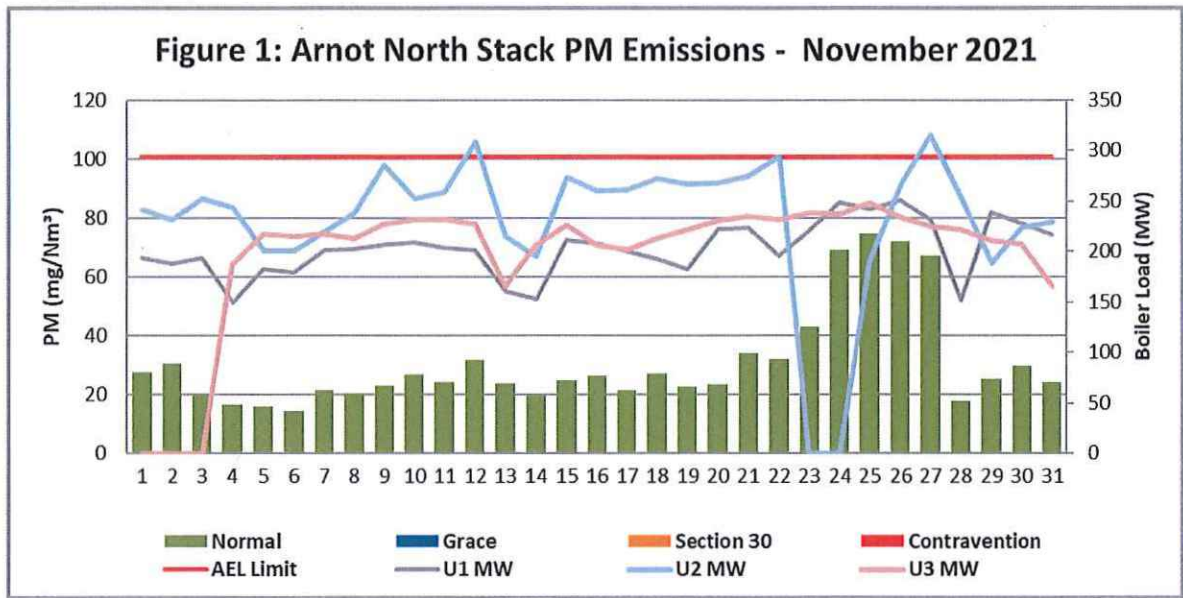


Figure 1: PM emissions (daily averages) for the month of November 2021 against emission limit for the North Stack

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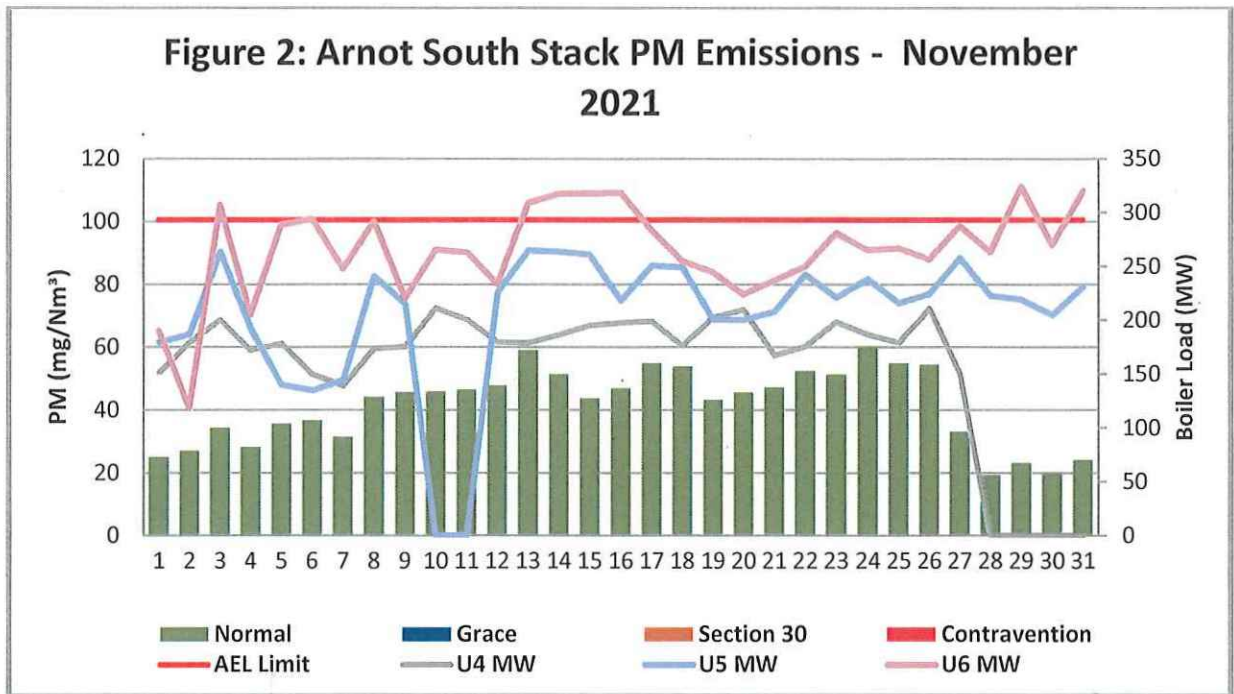


Figure 2: PM emissions (daily averages) for the month of November 2021 against emission limit for the South Stack

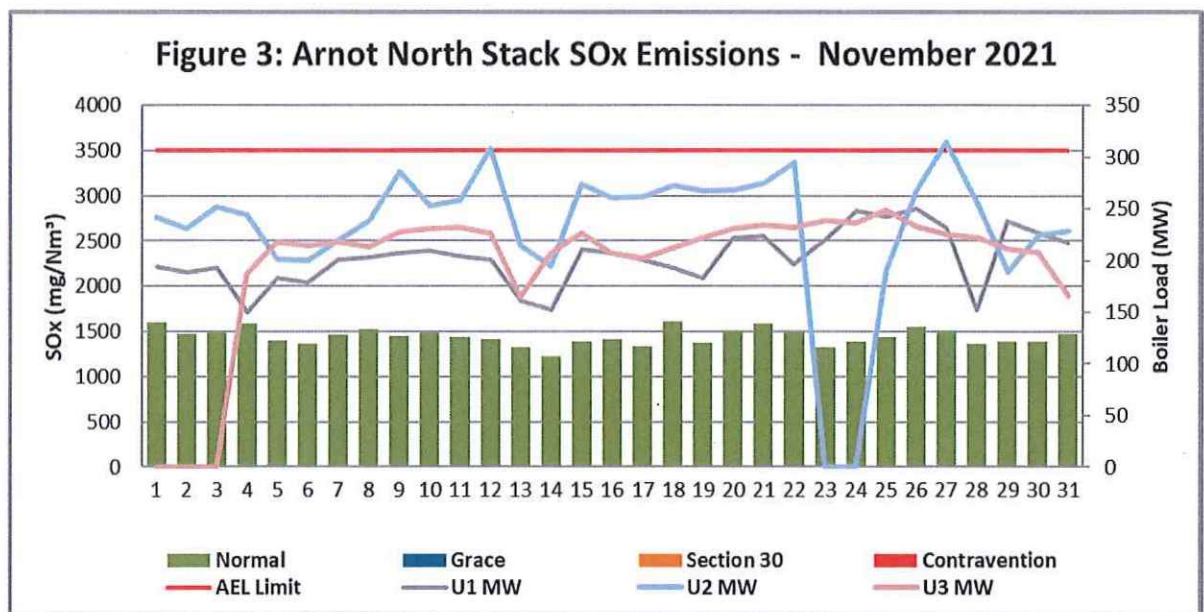


Figure 3: SO<sub>2</sub> emissions (daily averages) for the month of November 2021 against emission limit for the North Stack

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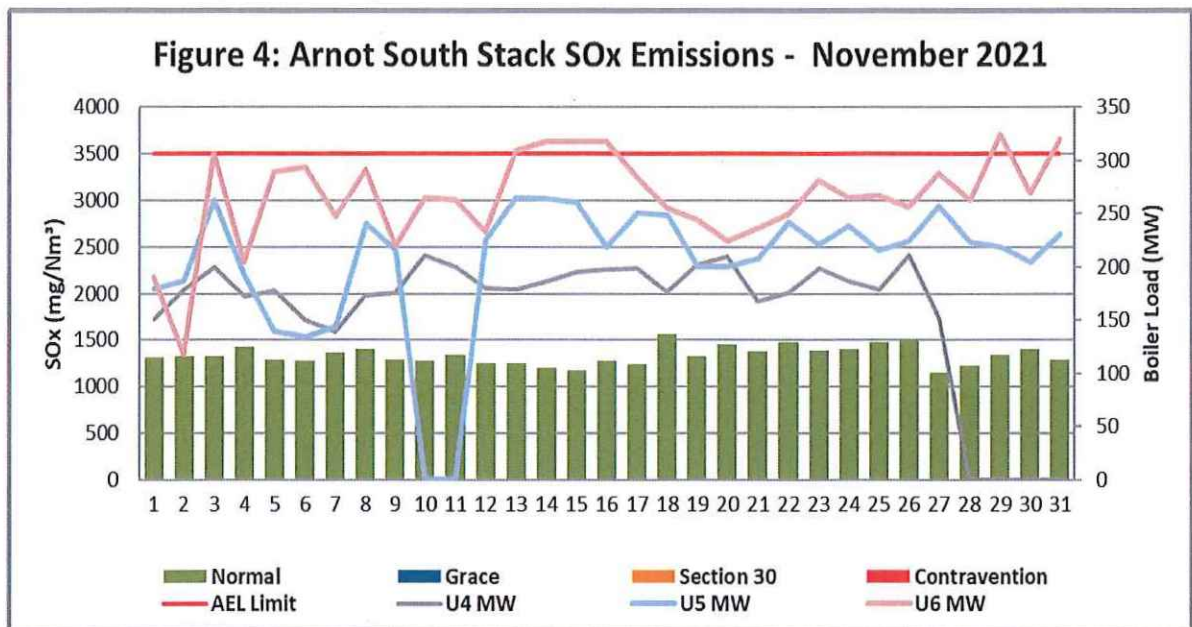


Figure 4: SO<sub>2</sub> emissions (daily averages) for the month of November -2021 against emission limit for the South Stack

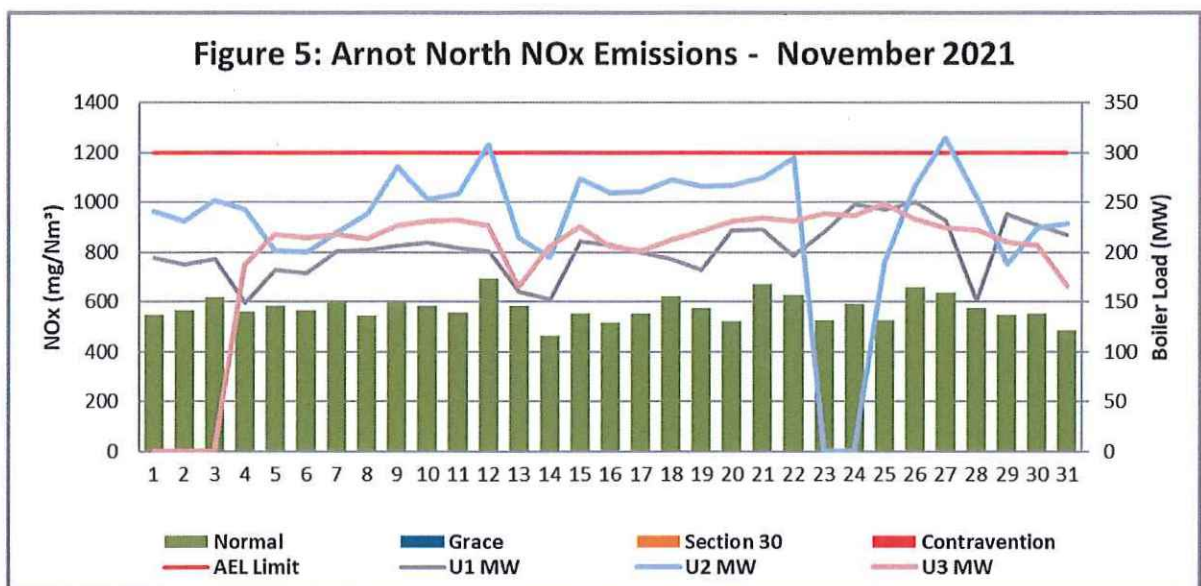


Figure 5: NO<sub>2</sub> emissions (daily averages) for the month of November -2021 against emission limit for the North Stack

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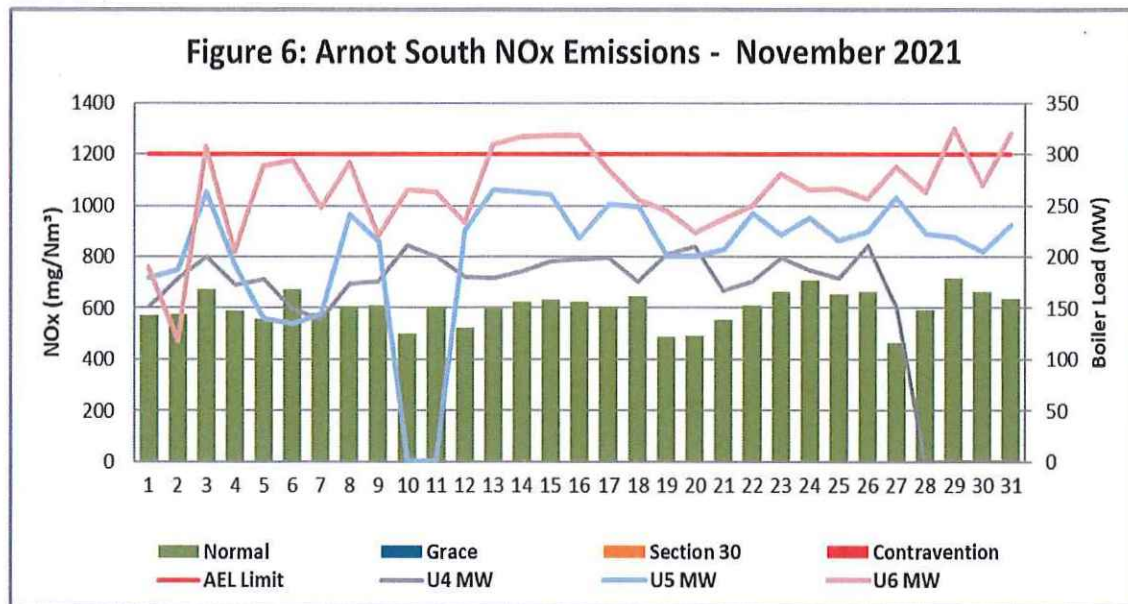


Figure 6: NO<sub>2</sub> emissions (daily averages) for the month of November -2021 against emission limit for the South Stack

Table 4: Monthly tonnages for the month of November 2021

| Unit                             | PM (tons) | SO <sub>2</sub> (tons) | NO <sub>2</sub> (tons) |
|----------------------------------|-----------|------------------------|------------------------|
| Total Tons (North & South Stack) | 131.4     | 5356.6                 | 2251.0                 |

Table 5: Monitor Availability

| Unit        | PM (%) | SO <sub>2</sub> (%) | NO <sub>2</sub> (%) |
|-------------|--------|---------------------|---------------------|
| North Stack | 100    | 98.9                | 99.0                |
| South Stack | 100    | 96.7                | 96.7                |

Table 6: Each unit and respective days operating under normal operation, days in grace period, and section 30 days respectively

| Unit | Days operating under normal operation | Days operating in grace period | Days operating under S 30 |
|------|---------------------------------------|--------------------------------|---------------------------|
| 1    | 30                                    | 0                              | 0                         |
| 2    | 30                                    | 0                              | 0                         |
| 3    | 30                                    | 0                              | 0                         |
| 4    | 30                                    | 0                              | 0                         |
| 5    | 30                                    | 0                              | 0                         |
| 6    | 30                                    | 0                              | 0                         |

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**Light up information**

Continuous reporting is being done even during start-ups, emissions were not affected

**Complaints Register**

Table 7 Complaints for the month of November 2021

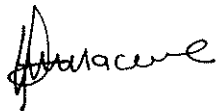
| Source Code/ Name | Root Cause Analysis | Calculation of Impacts/ emissions associated with the incident | Dispersion modeling of pollutants where applicable | Measures implemented to prevent reoccurrence | Date by which measure will be implemented |
|-------------------|---------------------|--|--|--|---|
| None              |                     |  |  |  |   |

**General**

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

Hoping the above will meet your satisfaction

Compiled by



Lawrence Machebe

**ENVIRONMENTAL OFFICER: ARNOT**

Verified by


p.p 

Nomathemba Mpulo

**SENIOR TECHNOLOGIST: ARNOT**

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Supported by



Rofhiwa Tshikovha

**SENIOR ENVIRONMENTAL ADVISOR: ARNOT**

Yours sincerely



Tsoro Samuel Mashao

**ACTING GENERAL MANAGER: ARNOT**