

	<b>Medupi Power Station Monthly Emissions Report</b>	<b>Template Identifier</b>	240-43921804	Rev	7
		<b>Document Identifier</b>	240-88543153	Rev	2
		<b>Effective Date</b>	February 2025		
		<b>Review Date</b>	February 2027		

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Date: 2025/11/30

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Ref: H16/1/13-AEL/M1/R1 – Oct 2025

Dear Mr Koenaitse

**MEDUPI POWER STATION MONTHLY EMISSIONS REPORT FOR THE MONTH OF OCT 2025**

This document serves as the monthly emissions report required in terms of Section 7.7.1 of Medupi Power Station Provisional Atmospheric Emission License (AEL), H16/1/13-AEL/M1/R1.

This report reflects Units 1,2,3,4,5, and 6 gaseous and particulate emissions performance against the AEL limit for the month of Oct 2025 only.

## 1. Raw Materials and Products

TABLE 1: QUANTITY OF RAW MATERIALS AND PRODUCTS CONSUMPTION IN OCT 2025

Raw Materials and Products used	Raw Material Type	Unit	Maximum Permitted Consumption/ Rate (Quantity)	Consumption – Oct 2025
	Coal	Tons/month	1 875 000	1 076 985
	Fuel Oil	Tons/month	20 000	2 640
Production Rates	Product/ By-Product Name	Unit	Maximum Production Capacity Permitted (Quantity)	Production Rate in Month of Oct 2025
	Energy	GWh	3 571.2	2 135.525
	Ash Emitted	Tons/month	not specified	270.74

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Date	Daily Reportable Hours of Operation						Coal usage	Production rate (MW)					
	U1	U2	U3	U4	U5	U6		U1	U2	U3	U4	U5	U6
01-Oct	24.0	Off	24.0	24.0	24.0	24.0	32275	669.4	-	490.1	559.2	569.1	619.5
02-Oct	24.0	Off	24.0	24.0	24.0	24.0	32543	712.2	-	513.4	575.2	512.0	617.7
03-Oct	24.0	Off	24.0	24.0	24.0	24.0	35300	698.2	-	599.5	620.4	618.1	660.8
04-Oct	24.0	Off	24.0	24.0	24.0	24.0	34929	706.6	-	640.6	623.4	664.4	633.0
05-Oct	24.0	Off	24.0	24.0	24.0	24.0	36102	713.1	-	654.1	622.8	664.3	701.6
06-Oct	24.0	Off	24.0	24.0	24.0	24.0	36045	715.7	-	612.4	605.3	642.8	740.9
07-Oct	24.0	Off	24.0	24.0	1.2	24.0	32853	717.0	-	686.2	660.3	572.2	775.0
08-Oct	24.0	Off	24.0	24.0	Off	24.0	38260	721.5	-	748.9	686.1	-	747.3
09-Oct	24.0	Off	24.0	18.8	8.9	24.0	36334	713.1	-	700.0	640.5	631.1	715.8
10-Oct	24.0	Off	24.0	3.9	24.0	24.0	38408	706.2	-	756.0	700.6	745.6	746.6
11-Oct	24.0	Off	24.0	24.0	24.0	24.0	37913	722.4	-	743.5	690.4	774.8	774.5
12-Oct	24.0	Off	24.0	24.0	24.0	24.0	39242	717.5	-	772.3	640.3	713.2	760.0
13-Oct	24.0	Off	24.0	24.0	24.0	24.0	35105	710.3	-	660.4	619.7	649.5	655.0
14-Oct	24.0	Off	24.0	24.0	24.0	24.0	34569	688.7	-	673.5	589.6	628.1	581.2
15-Oct	24.0	Off	24.0	24.0	24.0	24.0	37330	715.3	-	758.7	700.0	681.1	685.5
16-Oct	24.0	Off	24.0	24.0	24.0	24.0	35750	646.1	-	629.9	630.5	640.6	665.9
17-Oct	24.0	Off	24.0	10.3	24.0	24.0	33610	726.2	-	613.6	691.3	578.5	614.3
18-Oct	24.0	Off	24.0	11.8	24.0	24.0	32431	693.4	-	588.4	532.3	597.2	524.4
19-Oct	24.0	Off	24.0	24.0	24.0	5.8	29791	705.9	-	596.4	491.3	510.6	504.3
20-Oct	10.7	Off	24.0	24.0	24.0	8.7	32834	729.9	-	598.2	575.8	591.3	580.0
21-Oct	5.3	13.9	24.0	24.0	24.0	24.0	34696	570.0	521.8	531.2	590.9	635.0	527.4
22-Oct	24.0	24.0	24.0	24.0	24.0	10.3	33275	687.0	541.5	566.0	566.0	621.0	562.8
23-Oct	24.0	1.3	24.0	24.0	24.0	Off	28492	705.9	549.5	627.2	579.9	651.0	-
24-Oct	24.0		24.0	24.0	24.0	Off	35100	714.0	-	678.1	668.2	694.7	-
25-Oct	24.0	18.0	24.0	24.0	24.0	Off	36787	694.9	719.1	644.2	604.4	626.7	-
26-Oct	24.0	24.0	24.0	24.0	24.0	Off	34757	699.8	729.5	608.6	550.2	607.8	-
27-Oct	24.0	24.0	24.0	11.8	24.0	Off	35485	711.8	619.1	712.4	651.2	711.0	-
28-Oct	24.0	24.0	24.0	7.3	24.0	Off	36646	709.9	600.5	668.1	702.8	598.9	-
29-Oct	24.0	24.0	9.6	24.0	24.0	7.1	38131	711.5	752.0	683.7	625.2	571.1	579.5
30-Oct	24.0	24.0	Off	24.0	24.0	24.0	30349	532.0	663.9	-	465.9	661.8	537.9
31-Oct	24.0	24.0	Off	23.2	24.0	24.0	31643	686.1	605.8	-	494.0	600.4	562.1

NB: Operating hours less than 24 highlighted in pink.

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## 2. Abatement Technology

TABLE 2: ABATEMENT EQUIPMENT CONTROL TECHNOLOGY EFFICIENCY FOR MONTH OF OCT 2025

Associated Unit/Stack	Technology Type	Efficiency	FFP Utilization
Unit 1	Fabric Filter Plant (FFP)	99.910%	100%
Unit 2	Fabric Filter Plant (FFP)	99.967%	100%
Unit 3	Fabric Filter Plant (FFP)	99.958%	100%
Unit 4	Fabric Filter Plant (FFP)	99.860%	100%
Unit 5	Fabric Filter Plant (FFP)	99.888%	100%
Unit 6	Fabric Filter Plant (FFP)	99.922%	100%

Note: FFP does not have bypass mode operation, hence plant 100% Utilised.

## 3. Energy Source Characteristics

TABLE 3: ENERGY SOURCE MATERIAL CHARACTERISTICS FOR THE MONTH OF OCT 2025

Characteristic	Stipulated Range (% by weight on a dry basis)	Monthly Average Content (% by weight on a dry basis)
	<b>Coal</b>	
<b>Sulphur Content</b>	1.3 - 2.2	1.31
<b>Ash Content</b>	35 - 39	35.46

TABLE 4: ENERGY SOURCE MATERIAL CHARACTERISTICS FOR THE MONTH OF OCT 2025

Characteristic	Stipulated Range (%)	Monthly Average Content (%)
	<b>Oil</b>	
<b>Sulphur Content</b>	0.5 - 3.5	2.1
<b>Ash Content</b>	0.02 - 0.1	0.050

## 4. Emissions Reporting

Medupi Power Station uses Continuous Emission Monitoring System which uses the extractive method for analysis.

The emission limits are as follows:

SO<sub>2</sub> Monthly = 3500 mg/Nm<sup>3</sup>

Dust Daily= 50 mg/Nm<sup>3</sup>

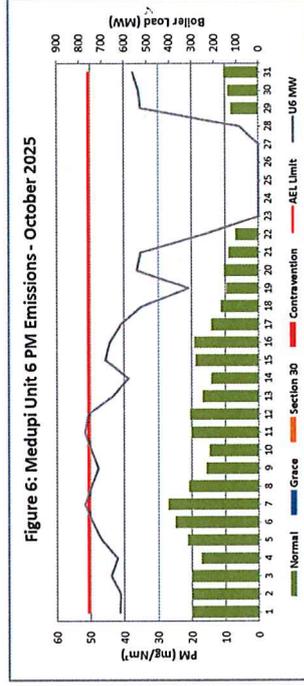
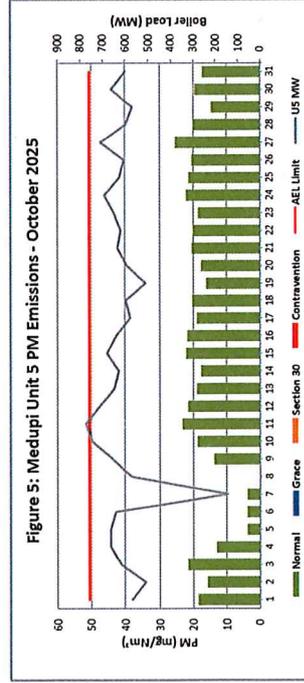
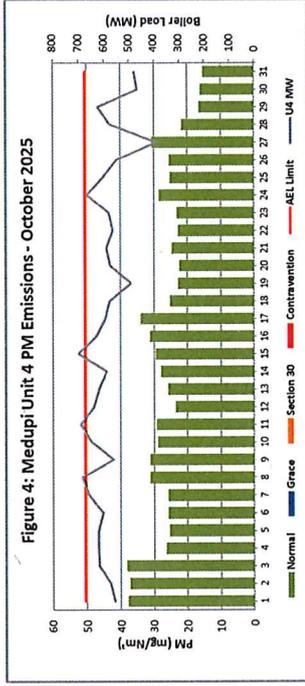
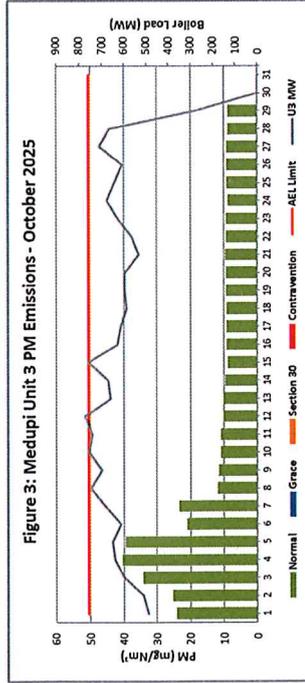
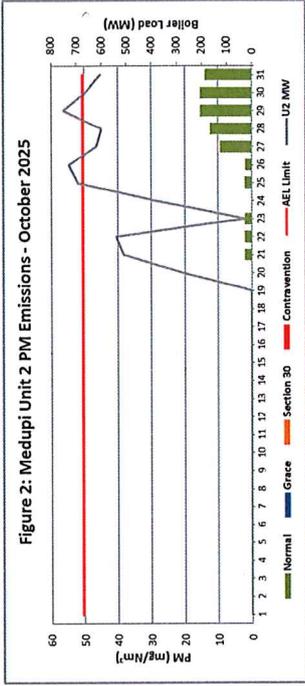
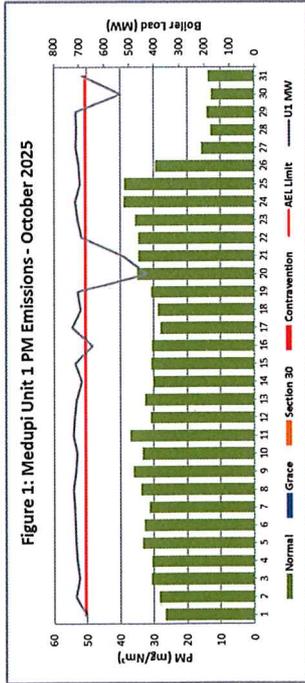
NO<sub>2</sub> Daily= 750 mg/Nm<sup>3</sup>



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4.1 PM Daily Averages

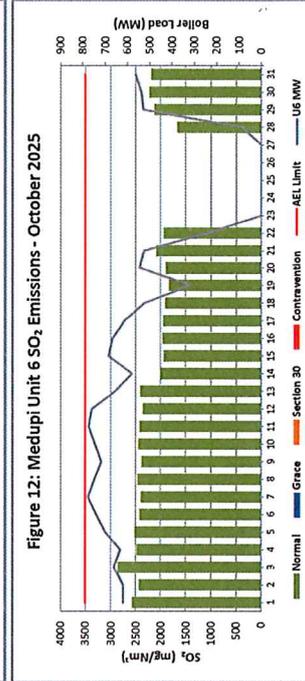
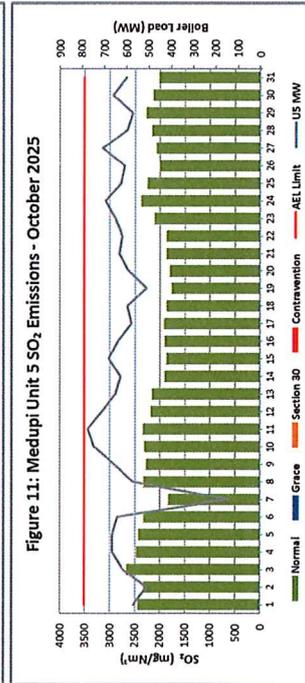
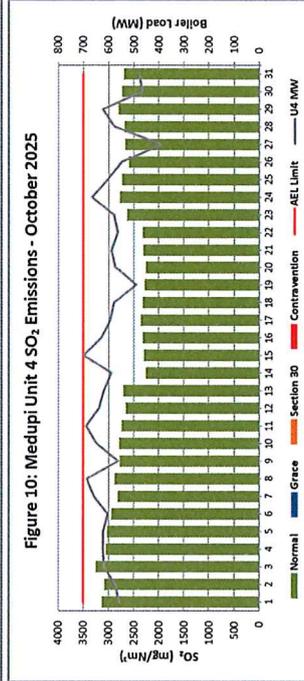
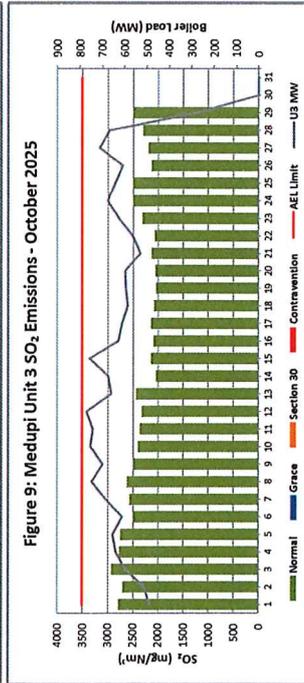
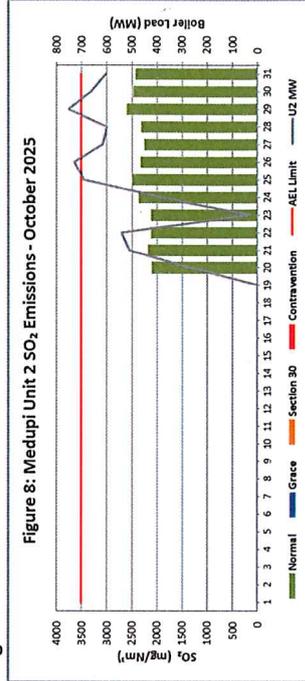
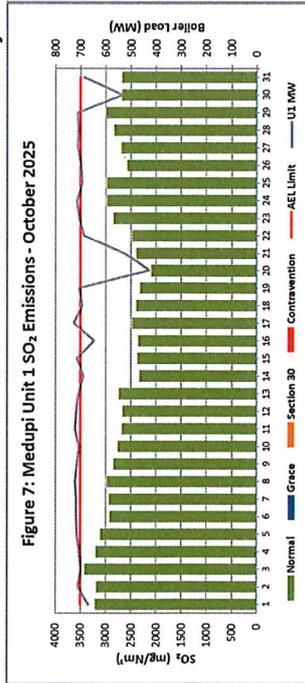




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4.2 SO<sub>2</sub> Daily Averages

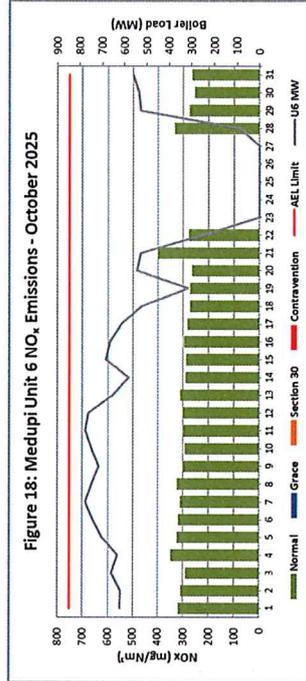
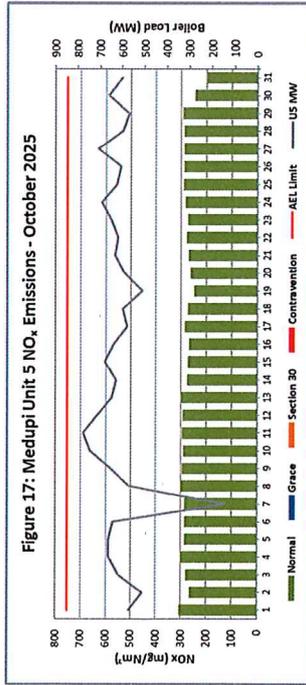
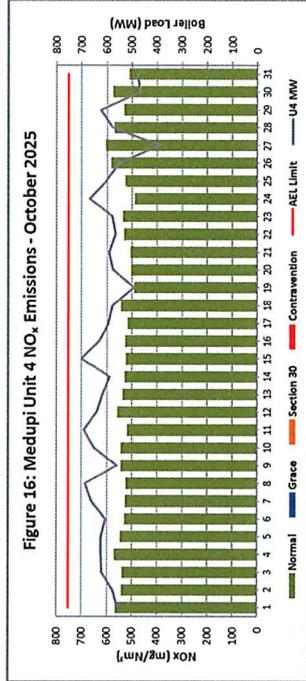
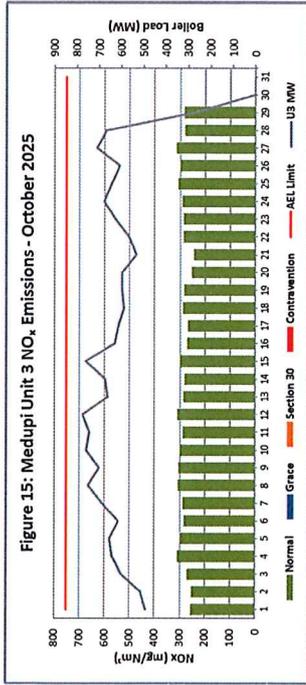
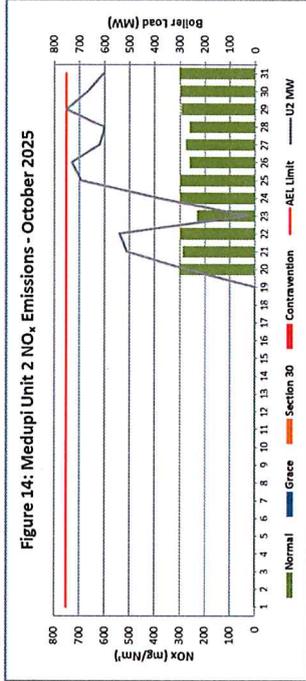
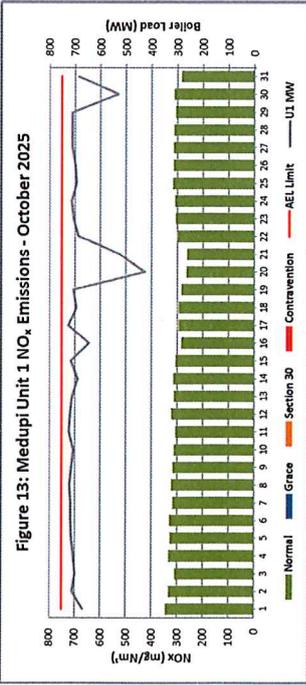




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4.3 NOx Daily Averages



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**TABLE 5: MONTHLY TONNAGES FOR THE MONTH OF OCT 2025**

Associated Unit/Stack	PM	SO <sub>2</sub>	NO <sub>2</sub>
Unit 1	60.7	5 832	659
Unit 2	6.8	2 119	258
Unit 3	24.6	3 938	477
Unit 4	78.4	8 610	1 711
Unit 5	64.4	7 918	1 029
Unit 6	35.8	4 917	647
<b>SUM (Tons)</b>	<b>270.74</b>	<b>33 334</b>	<b>4 782</b>

**TABLE 6: MONTHLY AVERAGES FOR THE MONTH OF OCT 2025**

Associated Unit/Stack	Average PM (mg/Nm <sup>3</sup> )	Average SO <sub>2</sub> (mg/Nm <sup>3</sup> )	Average NO <sub>x</sub> (mg/Nm <sup>3</sup> )
Unit 1	29.5	2 746.2	310.7
Unit 2	7.8	2 317.5	284.9
Unit 3	14.6	2 381.6	286.7
Unit 4	26.8	2 680.3	537.4
Unit 5	17.7	2 140.5	279.8
Unit 6	16.1	2 232.9	301.1

## 5. Continuous Emission Monitoring Systems (CEMS)

Unit 1, 2, 3, 4, 5 and 6 Continuous Emission Monitoring Systems were always in operation when the units were on load.

**TABLE 7: PERIODS DURING WHICH CEMS WAS INOPERATIVE/MALFUNCTIONING**

Date	CEMS status	Comments
1-7 October 2025	Unit 3	Faulty PM monitor restored on 08 Oct 2025

**TABLE 8: CEMS MONITOR RELIABILITY PERCENTAGE (%)**

Associated Unit/Stack	PM	SO <sub>2</sub>	NO <sub>2</sub>	O <sub>2</sub>
Unit 1	99.9	98.4	100.0	100.0
Unit 2	88.8	98.4	98.4	98.4
Unit 3	100.0	100.0	100.0	99.7
Unit 4	100.0	99.9	99.9	99.7
Unit 5	100.0	99.9	99.7	99.7
Unit 6	100.0	100.0	98.4	97.1

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## 6. CEMS Calibration certificates and equipment used for calibration.

A service provider was appointed to calibrate CEMS equipment at Medupi Power Station, calibration certificates are in place and are made available upon request. Verification of the CEMS after calibration is conducted internally by Eskom.

## 7. Ambient Air Quality Monitoring Report

The Ambient Air Quality Monitoring report and Dust Fallout report for the month of Oct 2025 were submitted in Nov 2025.

## 8. Visual inspection of the exterior walls of the fuel oil tanks and TVOC Estimation

Visual inspection was conducted and there were no leaks observed on the exterior walls of the fuel oil tanks.

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**TABLE 9: TOTAL VOLATILE ORGANIC COMPOUND (TVOC) FOR OCT 2025**

		
<b>CALCULATION OF EMISSIONS OF TOTAL VOLATILE COMPOUNDS FROM FUEL OIL STORAGE TANKS*</b>		
Date:	Thursday, 30 October 2025	
Station:	Medupi Power Station	
Province:	Limpopo Province	
Tank no.:	1-2	
Description:	Outdoor fuel oil storage tank	
Tank Type:	Vertical fixed roof (vented to atmosphere)	
Material stored:	Fuel Oil 150	
<b>MONTHLY INPUT DATA FOR THE STATION</b> Please only insert relevant monthly data inputs into the <b>blue cells</b> below Choose from a dropdown menu in the <b>green cells</b> The total VOC emissions for the month are in the <b>red cells</b> <b>IMPORTANT: Do not change <u>any</u> other cells without consulting the AQ CoE</b>		
MONTH:	October	
<b>GENERAL INFORMATION:</b>		
	Data	Unit
Total number of fuel oil tanks:	2	NA
Height of tank:*	14.2	m
Diameter of tank:	12	m
Net fuel oil throughput for the month:	2 640	tons/month
Molecular weight of the fuel oil:	166.00	Lb/lb-mole
<b>METEROLOGICAL DATA FOR THE MONTH</b>		
	Data	Unit
Daily average ambient temperature	26.19	°C
Daily maximum ambient temperature	33.65	°C
Daily minimum ambient temperature	19.11	°C
Daily ambient temperature range	14.54	°C
Daily total insolation factor	5.81	kWh/m <sup>2</sup> /day
Tank paint colour	Aluminum/Specular	NA
Tank paint solar absorbance	0.39	NA
<b>FINAL OUTPUT:</b>		
	Result	Unit
Breathing losses:	0.74 kg/month	
Working losses:	0.08 kg/month	
<b>TOTAL LOSSES (Total TVOC Emissions for the month):</b>	<b>0.81 kg/month</b>	
<small>*Calculations performed on this spreadsheet are taken from the USEPA AP-42- Section 7.1 Organic Liquid Storage Tanks - January 1996. This spreadsheet is derived from materials provided by Jimmy Peress, PE, Trittech Consulting Engineers, 85-93 Chevy Chase Street, Jamaica, NY 11432 USA, Tel - 718-454-3920, Fax - 718-454-6330, e-mail - PeressJ@nyc.rr.com.</small>		

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### 9. Air quality improvements initiatives and public education and awareness campaigns

No awareness campaign was conducted for Oct 2025.

### 10. Complaints Register

TABLE 10: COMPLAINTS FOR THE MONTH OF OCT 2025

Name/ Source Code	Air pollution complaints received	Calculation of Impacts/ emissions associated with the incident	Date of complaint and date of response by the license holder	Results of investigation	Action taken to resolve the complaint
NA	NA	NA	NA	NA	NA

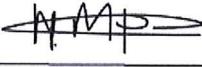
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Compiled By: **Thabo Khoza**  
**Senior Advisor**  
**Environmental Management**

 Date: 25/11/2025

Verified by: **Malose Langa**  
**System Engineer Boiler**

 Date: 2025/11/26

Verified by: **Shu Mpangase**  
**System Engineer C&I**

 Date: 2025/11/27

Supported by: **Mokgadi Dikgale**  
**Environmental Manager**

 Date: 2025/12/03

Supported by: **Sithokozile Hlongwa**  
**Engineering Group Manager**
 PP 
 Date: 2025/12/09

I Thozama Gangi, declares that the information provided in this report is accurate and correct.

Yours sincerely

  
 \_\_\_\_\_  
 Thozama Gangi  
**GENERAL MANAGER: MEDUPI POWER STATION**

Date: 2025/12/23