

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

Stanley Koenaitse

Waterberg District Municipality
Private Bag X1018
Modimole
0510

skoenaite@waterberg.gov.za

Date: 2025/04/15

Enquiries: MF Dikgale

Tel: 014 762 6820

Email: DikgalMF@eskom.co.za

Ref: H16/1/13-AEL/M1/R1 – March 2025

Dear Mr Koenaitse

MEDUPI POWER STATION MONTHLY EMISSIONS REPORT FOR THE MONTH OF MARCH 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 Unit 1, 2, 3, 5 and 6 gaseous and particulate emissions performance against the AEL limit for the month of March 2025 only.

1. Raw Materials and Products

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

Raw Materials and Products used	Raw Material Type	Unit	Maximum Permitted Consumption/ Rate (Quantity)	Consumption – March 2025
	Coal	Tons/month	1 875 000	947 171
	Fuel Oil	Tons/month	20 000	3 163
Production Rates	Product/ By-Product Name	Unit	Maximum Production Capacity Permitted (Quantity)	Production Rate in Month of March 2025
	Energy	GWh	3 571.2	2 030.9
	Ash Emitted	Tons/month	not specified	310.4

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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-Mar	24.0	24.0	24.0	0.0	19.0	24.0	28966	781	745	602	OFF	209	401
02-Mar	24.0	24.0	24.0	0.0	24.0	5.4	30130	781	706	668	OFF	547	386
03-Mar	24.0	24.0	24.0	0.0	24.0	5.7	30754	794	686	686	OFF	600	198
04-Mar	24.0	17.8	24.0	0.0	24.0	18.7	29131	721	673	652	OFF	600	318
05-Mar	24.0	24.0	24.0	0.0	24.0	24.0	35023	743	709	633	OFF	581	572
06-Mar	24.0	24.0	24.0	0.0	24.0	24.0	34806	784	617	641	OFF	581	576
07-Mar	24.0	24.0	24.0	0.0	24.0	24.0	34936	761	732	644	OFF	581	580
08-Mar	24.0	24.0	24.0	0.0	24.0	24.0	34867	734	715	625	OFF	579	576
09-Mar	24.0	24.0	24.0	0.0	24.0	24.0	34195	731	707	645	OFF	550	572
10-Mar	24.0	24.0	24.0	0.0	24.0	24.0	32966	683	723	691	OFF	465	580
11-Mar	24.0	24.0	24.0	0.0	24.0	24.0	32364	642	698	694	OFF	550	580
12-Mar	24.0	10.0	24.0	0.0	24.0	24.0	27531	639	463	626	OFF	550	580
13-Mar	24.0	0.0	24.0	0.0	24.0	24.0	25972	667	OFF	637	OFF	550	542
14-Mar	24.0	0.0	24.0	0.0	24.0	24.0	25698	728	OFF	674	OFF	398	553
15-Mar	24.0	0.0	24.0	0.0	24.0	24.0	27877	750	OFF	693	OFF	548	580
16-Mar	20.8	0.0	24.0	0.0	17.2	24.0	23695	586	OFF	691	OFF	536	580
17-Mar	24.0	0.0	24.0	0.0	0.0	24.0	21918	780	OFF	685	OFF	OFF	580
18-Mar	24.0	0.0	24.0	0.0	0.0	24.0	21050	729	OFF	647	OFF	OFF	580
19-Mar	24.0	0.0	24.0	0.0	0.0	24.0	21348	718	OFF	667	OFF	OFF	577
20-Mar	24.0	17.7	24.0	0.0	0.0	24.0	24386	641	539	648	OFF	OFF	580
21-Mar	24.0	24.0	24.0	0.0	0.0	24.0	27599	692	660	649	OFF	OFF	580
22-Mar	24.0	24.0	24.0	0.0	24.0	15.9	31279	603	675	620	OFF	557	520
23-Mar	24.0	24.0	24.0	0.0	24.0	24.0	34464	657	624	618	OFF	600	582
24-Mar	24.0	24.0	24.0	0.0	24.0	7.4	29687	717	671	609	OFF	650	390
25-Mar	24.0	24.0	24.0	0.0	24.0	9.3	30581	753	703	624	OFF	684	351
26-Mar	24.0	24.0	24.0	0.0	24.0	24.0	33181	660	669	643	OFF	621	580
27-Mar	24.0	24.0	24.0	0.0	24.0	24.0	33487	718	641	651	OFF	624	580
28-Mar	24.0	24.0	24.0	0.0	24.0	23.8	31341	570	623	635	OFF	631	565
29-Mar	24.0	24.0	24.0	0.0	24.0	3.1	25386	660	637	624	OFF	557	494
30-Mar	24.0	24.0	24.0	0.0	24.0	0.0	26594	665	603	571	OFF	571	OFF
31-Mar	24.0	24.0	24.0	0.0	24.0	0.0	26957	739	583	629	OFF	565	OFF

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 MARCH 2025

Associated Unit/Stack	Technology Type	Efficiency	FFP Utilization
Unit 1	Fabric Filter Plant (FFP)	99.895%	100%
Unit 2	Fabric Filter Plant (FFP)	99.918%	100%
Unit 3	Fabric Filter Plant (FFP)	99.894%	100%
Unit 4	Fabric Filter Plant (FFP)	Off	Off
Unit 5	Fabric Filter Plant (FFP)	99.872%	100%
Unit 6	Fabric Filter Plant (FFP)	99.903%	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 MARCH 2025

Characteristic	Stipulated Range (% by weight on a dry basis)	Monthly Average Content (% by weight on a dry basis)
Coal		
Sulphur Content	1.3 - 2.2	1.3
Ash Content	35 - 39	35.2

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

Characteristic	Stipulated Range (%)	Monthly Average Content (%)
Oil		
Sulphur Content	0.5 - 3.5	2.0
Ash Content	0.02 - 0.1	0.02

4. Emissions Reporting

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

The emission limits are as follows:

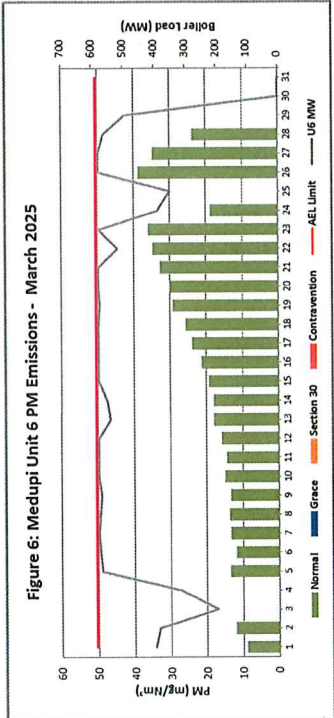
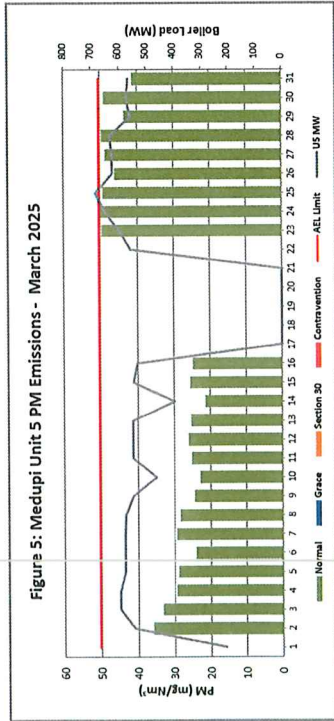
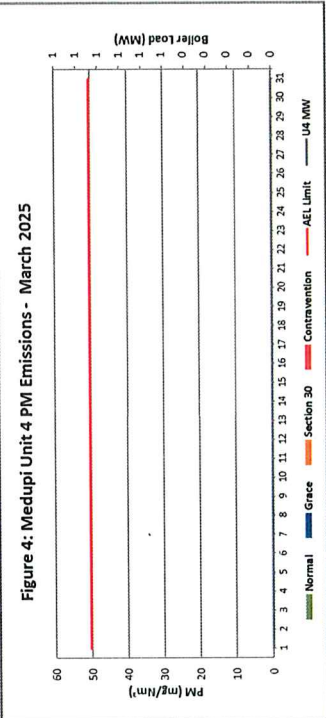
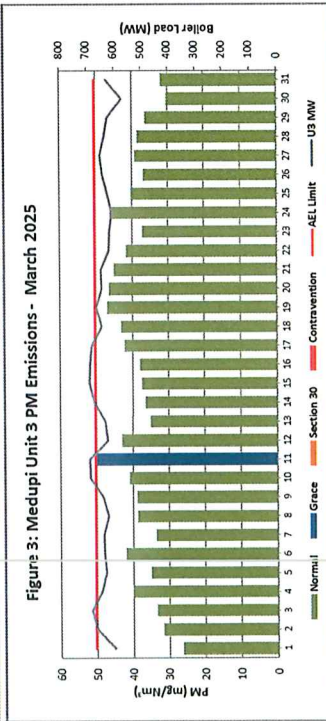
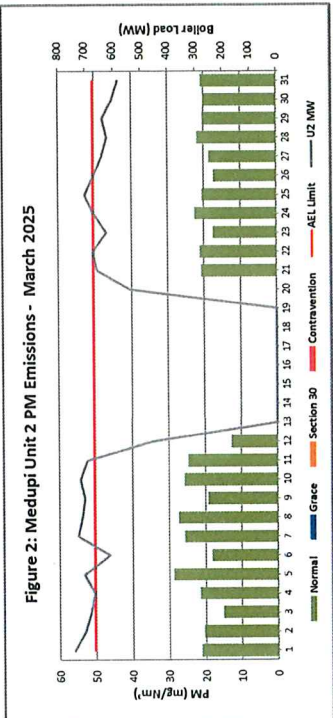
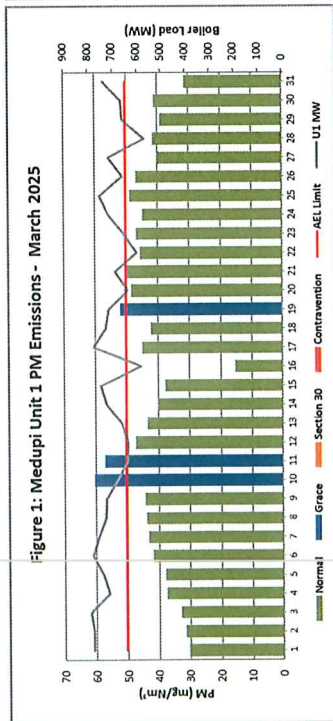
SO₂ Monthly = 3500 mg/Nm³

Dust Daily= 50 mg/Nm³

NO₂ Daily= 750 mg/Nm³

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4.1 PM Daily Averages

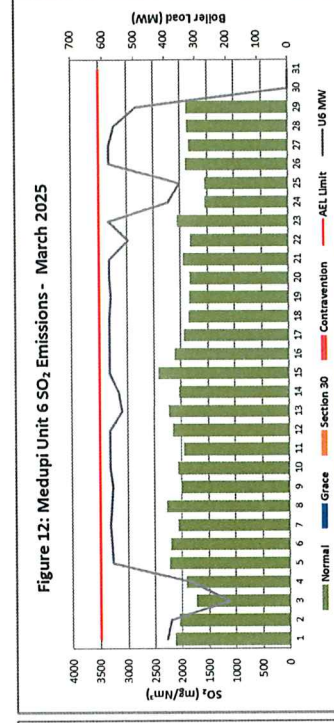
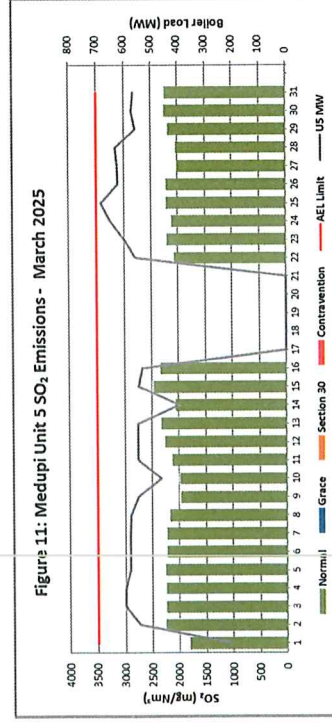
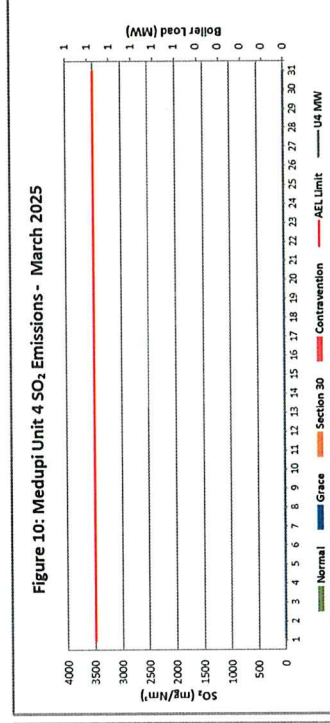
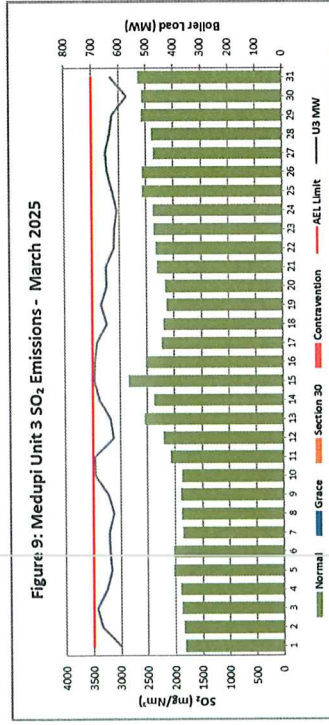
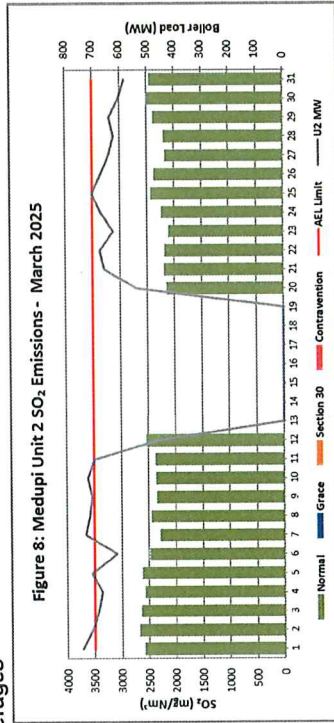
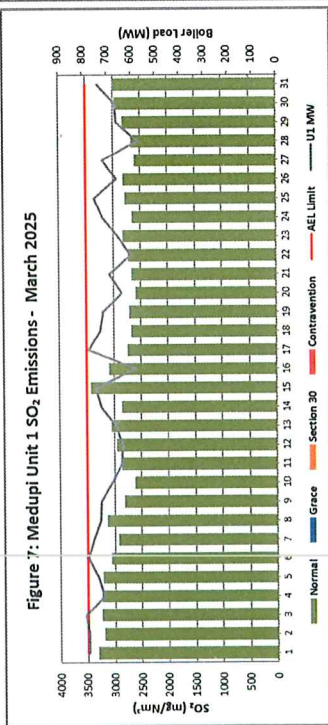




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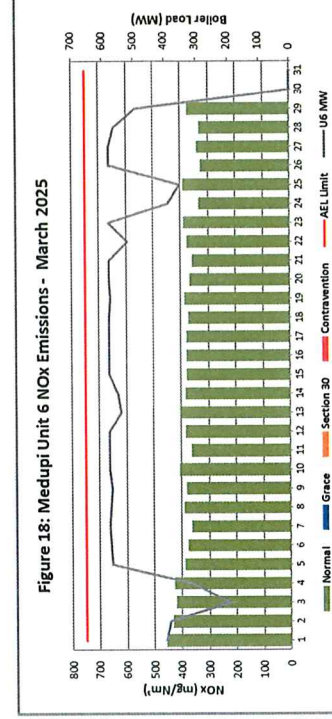
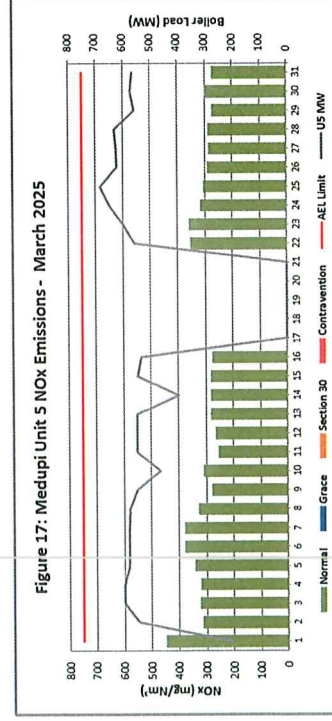
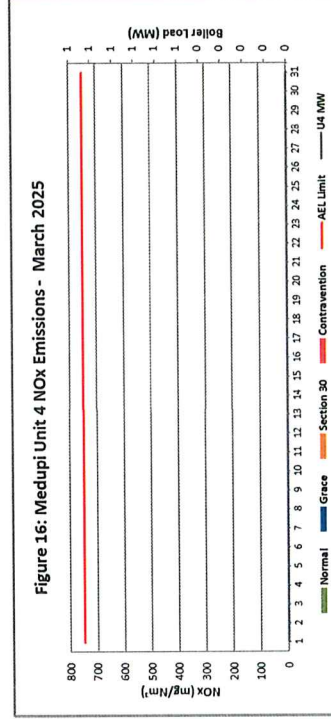
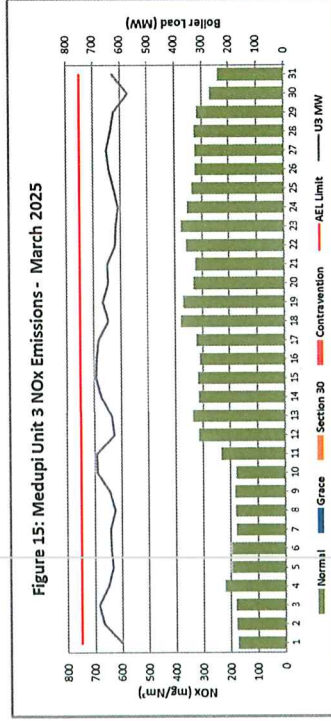
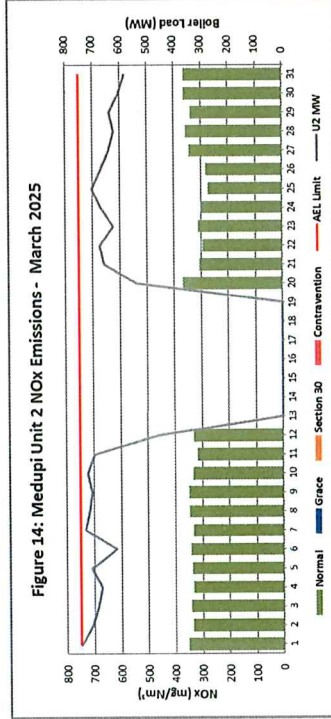
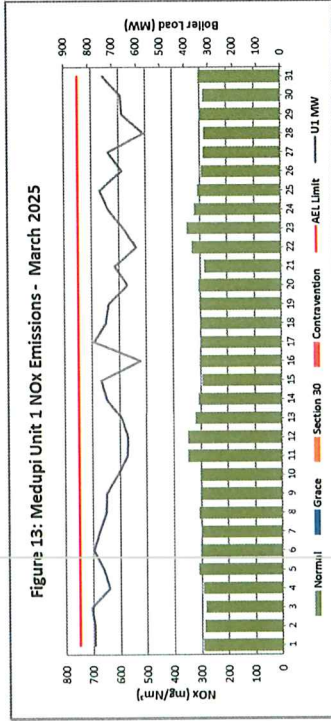
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4.2 SO₂ Daily Averages



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4.3 NOx Daily Averages



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TABLE 5: MONTHLY TONNAGES FOR THE MONTH OF MARCH 2025

Associated Unit/Stack	PM	SO ₂	NO ₂
Unit 1	82.1	5 817.3	607.2
Unit 2	44.8	5 786.0	799.6
Unit 3	75.6	4 370.2	545.4
Unit 4	Off	Off	Off
Unit 5	62.6	4 092.1	581.1
Unit 6	45.4	5 138.0	960.5
SUM (Tons)	310.4	25 203.7	3 493.7

TABLE 6: MONTHLY AVERAGES FOR THE MONTH OF MARCH 2025

Associated Unit/Stack	Average PM (mg/Nm ³)	Average SO ₂ (mg/Nm ³)	Average NO _x (mg/Nm ³)
Unit 1	42.3	2 910.9	305.1
Unit 2	21.0	2 387.5	331.2
Unit 3	38.8	2 241.4	279.1
Unit 4	Off	Off	Off
Unit 5	34.7	2 173.7	312.5
Unit 6	21.5	1 982.5	381.3

5. Continuous Emission Monitoring Systems (CEMS)

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

TABLE 7: PERIODS DURING WHICH CEMS WAS INOPERATIVE/MALFUNCTIONING

Date	CEMS status	Comments
		No issues on the PM, SO ₂ , and NO _x monitors

TABLE 8: CEMS MONITOR RELIABILITY PERCENTAGE (%)

Associated Unit/Stack	PM	SO ₂	NO ₂	O ₂
Unit 1	99.2	99.5	98.2	99.0
Unit 2	100.0	99.8	99.7	99.4
Unit 3	100.0	99.9	99.6	98.1
Unit 4	Off	Off	Off	Off
Unit 5	100.0	100.0	100.0	99.0
Unit 6	100.0	100.0	100.0	88.8

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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 may be 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 March 2025 were submitted in April 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 MARCH 2025

		
CALCULATION OF EMISSIONS OF TOTAL VOLATILE COMPOUNDS FROM FUEL OIL STORAGE TANKS*		
Date:	Monday, 31 March 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	
MONTHLY INPUT DATA FOR THE STATION Please only insert relevant monthly data inputs into the blue cells below Choose from a dropdown menu in the green cells The total VOC emissions for the month are in the red cells IMPORTANT: Do not change any other cells without consulting the AQ CoE		
MONTH:	March	
GENERAL INFORMATION:	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:	3 163	tons/month
Molecular weight of the fuel oil:	166.00	Lb/lb-mole
METEROLOGICAL DATA FOR THE MONTH	Data	Unit
Daily average ambient temperature	23.67	°C
Daily maximum ambient temperature	30.21	°C
Daily minimum ambient temperature	17.89	°C
Daily ambient temperature range	12.31	°C
Daily total insolation factor	5.08	kWh/m²/day
Tank paint colour	Aluminum/Specular	NA
Tank paint solar absorbance	0.39	NA
FINAL OUTPUT:	Result	Unit
Breathing losses:	0.68 kg/month	
Working losses:	0.09 kg/month	
TOTAL LOSSES (Total TVOC Emissions for the month):	0.77 kg/month	
*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, Tritech 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.		

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

No awareness campaign was conducted for March 2025.

10. Complaints Register

TABLE 10: COMPLAINTS FOR THE MONTH OF MARCH 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: 2025/04/14

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

 Date: 2025/04/15

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

 Date: 2025/04/16

Supported by: **Mokgadi Dikgale**
Environmental Manager

 Date: 2025/04/2025

Supported by: **Sithokozile Hlongwa**
Engineering Group Manager
 (Acting)
 
 Date: 2025.04.16

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

Yours sincerely


 Thozama Gangi
GENERAL MANAGER (Acting): MEDUPI POWER STATION

Date: 2025-04-17