	Medupi Power Station Monthly Emissions Report	Template Identifier	240-43921804	Rev	6
		Document Identifier	240-88543153	Rev	2
		Effective Date	February 2022		
		Review Date	February 2024		

Stanley Koenaitse

Waterberg District Municipality
Private Bag X1018
Modimolle
0510

skoenaite@waterberg.gov.za

Date: 2022/05/30

Enquiries: MF Dikgale

Tel: 014 762 6820

Ref: H16/1/13-AEL/M1/R1 – May 2022

Dear Mr Koenaitse

MEDUPI POWER STATION MONTHLY EMISSIONS REPORT FOR THE MONTH OF MAY 2022

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 is a reflection of Unit 1, 2, 3, 5 and 6 gaseous and particulate emissions performance against the AEL limit for the month of May 2022 only.

1. Raw Materials and Products

TABLE 1: QUANTITY OF RAW MATERIALS AND PRODUCTS CONSUMPTION IN MAY 2022

Raw Materials and Products used	Raw Material Type	Unit	Maximum Permitted Consumption/ Rate (Quantity)	Consumption – May 2022
	Coal	Tons/month	1 875 000	1 034 194
	Fuel Oil	Tons/month	20 000	1 110
Production Rates	Product/ By-Product Name	Unit	Maximum Production Capacity Permitted (Quantity)	Production Rate in Month of May 2022
	Energy	GWh	3 571.2	2 327
	Ash Emitted	Tons/month	not specified	358.3

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the database.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Limited, Reg No 2002/015527/30.


	Medupi Power Station Monthly Emissions Report	Template Identifier	240-43921804	Rev	6
		Document Identifier	240-88543153	Rev	2
		Effective Date	February 2022		
		Review Date	February 2024		

TABLE 2: DAILY CONSUMPTION AND PRODUCTION RATES


Date	Reportable hours of Operation						Coal usage	Production rate (MW)					
	U1	U2	U3	U4	U5	U6		U1	U2	U3	U4	U5	U6
01-May	24.0	24.0	24.0		0.0	24.0	28067	699	696	759		OFF	607
02-May	24.0	24.0	24.0		0.0	24.0	28708	764	729	740		136	593
03-May	24.0	24.0	24.0		2.3	24.0	32243	748	737	738		608	566
04-May	24.0	24.0	24.0		24.0	24.0	34984	753	743	765		491	623
05-May	24.0	24.0	24.0		24.0	24.0	34742	741	746	760		467	606
06-May	24.0	24.0	24.0		24.0	24.0	35852	744	770	752		502	600
07-May	24.0	24.0	24.0		24.0	24.0	31215	642	615	614		508	576
08-May	24.0	24.0	15.7		24.0	24.0	30993	665	665	642		537	587
09-May	24.0	24.0	7.6		24.0	24.0	35323	744	746	734		519	619
10-May	24.0	24.0	24.0		24.0	24.0	35521	742	750	719		460	608
11-May	24.0	24.0	24.0		24.0	24.0	37032	738	723	722		615	631
12-May	24.0	24.0	24.0		24.0	24.0	37388	747	733	725		669	615
13-May	24.0	24.0	24.0		24.0	24.0	36330	751	752	750		468	595
14-May	24.0	24.0	24.0		24.0	24.0	36373	747	762	758		463	593
15-May	24.0	24.0	24.0		24.0	24.0	36822	772	793	783		468	593
16-May	24.0	24.0	24.0		24.0	24.0	35410	773	787	787		469	575
17-May	24.0	24.0	24.0		24.0	24.0	35272	756	782	782		472	564
18-May	24.0	24.0	24.0		24.0	24.0	35477	749	736	735		469	558
19-May	8.9	24.0	24.0		24.0	24.0	34382	690	756	743		549	546
20-May	0.0	24.0	24.0		24.0	24.0	34552	652	765	792		631	547
21-May	11.9	24.0	24.0		24.0	0.0	34685	673	758	744		693	557
22-May	11.8	24.0	24.0		24.0	0.0	31900	570	761	741		704	556
23-May	0.0	24.0	24.0		24.0	0.0	34791	682	765	757		658	530
24-May	21.6	24.0	24.0		24.0	21.0	33164	714	727	706		480	530
25-May	24.0	24.0	24.0		24.0	24.0	31512	693	665	660		482	552
26-May	24.0	24.0	24.0		24.0	24.0	33481	719	689	698		488	558
27-May	24.0	24.0	24.0		24.0	24.0	34780	728	760	794		513	544
28-May	24.0	8.9	5.9		24.0	24.0	26221	727	594	731		583	550
29-May	24.0	8.7	0.4		24.0	24.0	28731	571	608	563		597	530
30-May	24.0	24.0	24.0		5.5	24.0	27433	697	659	660		506	540
31-May	24.0	24.0	24.0		0.0	24.0	30810	741	754	754		509	540

NB: reportable hours less than 24 highlighted in pink

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the database.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Limited, Reg No 2002/015527/30.

	Medupi Power Station Monthly Emissions Report	Template Identifier	240-43921804	Rev	6
		Document Identifier	240-88543153	Rev	2
		Effective Date	February 2022		
		Review Date	February 2024		

2. Abatement Technology

Table 3: Abatement Equipment Control Technology efficiency for month of May 2022

Associated Unit/Stack	Technology Type	Efficiency	FFP Utilization
Unit 1	Fabric Filter Plant (FFP)	99.950%	100%
Unit 2	Fabric Filter Plant (FFP)	99.917%	100%
Unit 3	Fabric Filter Plant (FFP)	99.903%	100%
Unit 4	Fabric Filter Plant (FFP)		
Unit 5	Fabric Filter Plant (FFP)	99.755%	100%
Unit 6	Fabric Filter Plant (FFP)	99.852%	100%

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

3. Energy Source Characteristics

TABLE 4: ENERGY SOURCE MATERIAL CHARACTERISTICS FOR THE MONTH OF MAY 2022

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	1.27
Ash Content	35 - 39	33.85

TABLE 5: ENERGY SOURCE MATERIAL CHARACTERISTICS FOR THE MONTH OF MAY 2022

Characteristic	Stipulated Range (%)	Monthly Average Content (%)
Oil		
Sulphur Content	0.5 - 3.5	2.1
Ash Content	0.02 - 0.1	0.010

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

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the database.

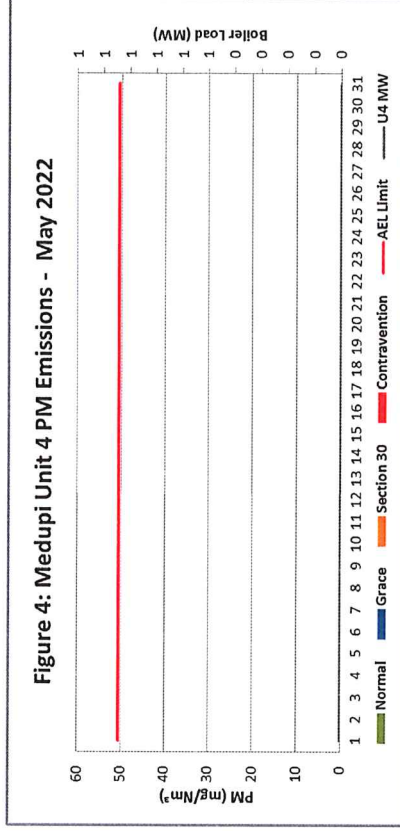
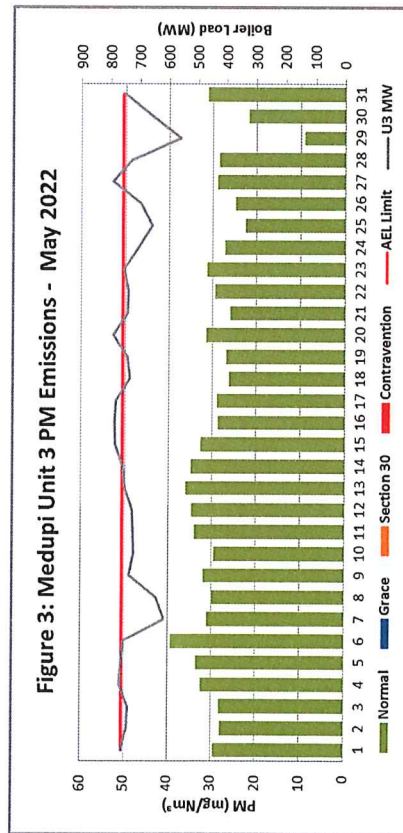
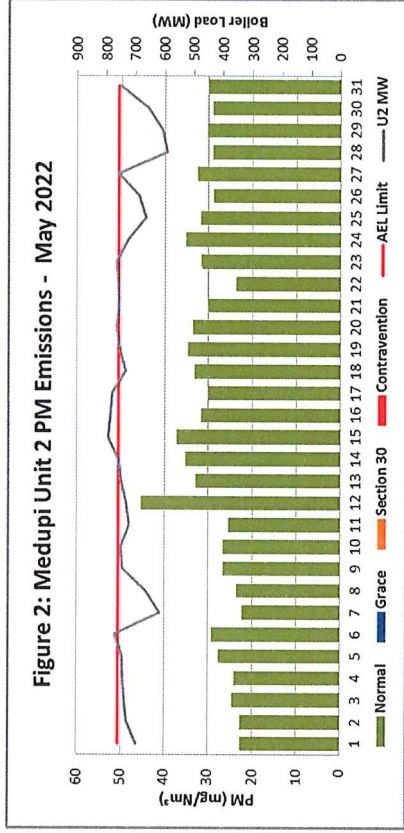
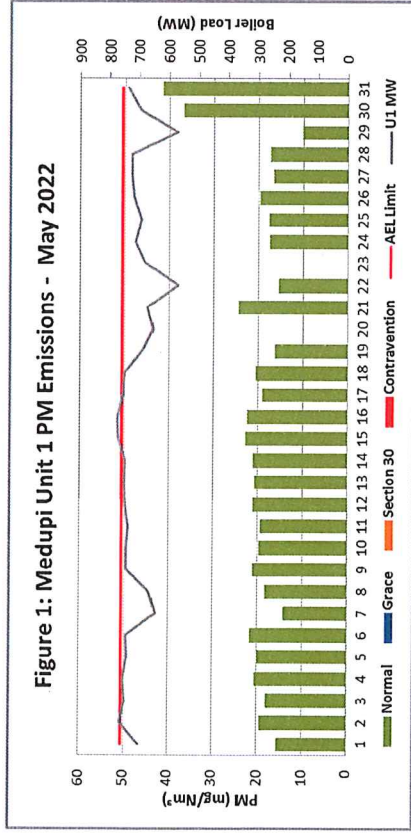
No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Limited, Reg No 2002/015527/30.



Medupi Power Station Monthly Emissions Report

Template Identifier	240-43921804	Rev	6
Document Identifier	240-88543153	Rev	2
Effective Date	February 2022		
Review Date	February 2024		

PM Daily Averages



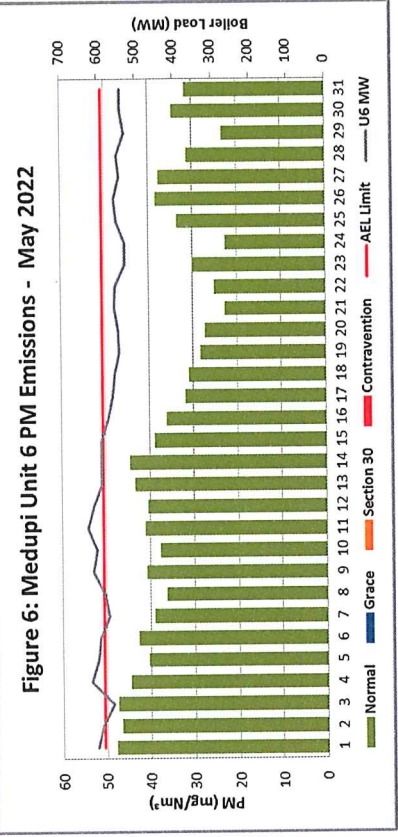
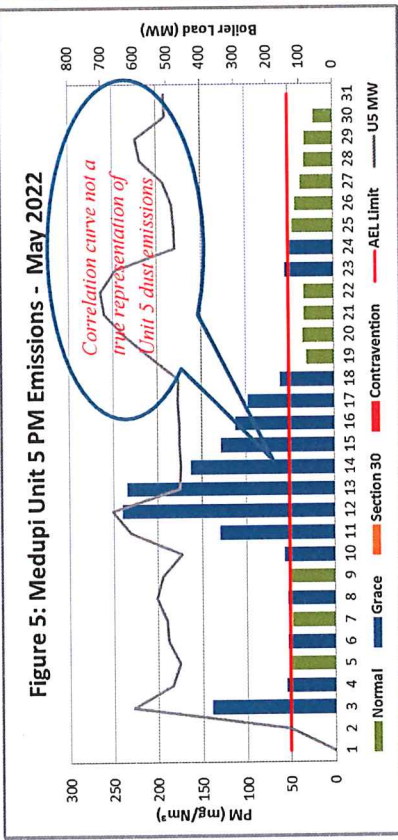
CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the database. No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Limited, Reg No 2002/015527/30.

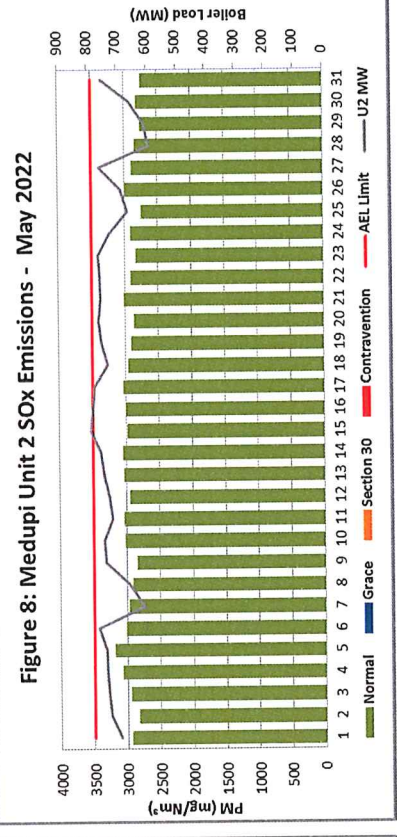
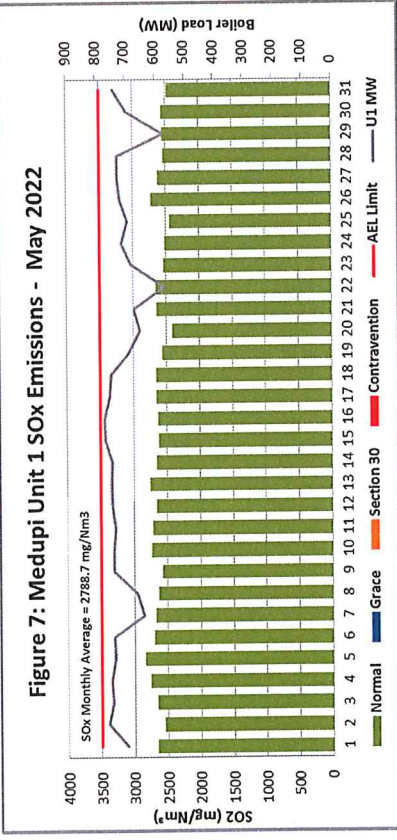


Medupi Power Station Monthly Emissions Report

Template Identifier	240-43921804	Rev	6
Document Identifier	240-88543153	Rev	2
Effective Date	February 2022		
Review Date	February 2024		



SOx Daily Averages



CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the database. No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Limited, Reg No 2002/015527/30.



Medupi Power Station Monthly Emissions Report

Template Identifier	240-43921804	Rev	6
Document Identifier	240-88543153	Rev	2
Effective Date	February 2022		
Review Date	February 2024		

Figure 9: Medupi Unit 3 SOx Emissions - May 2022

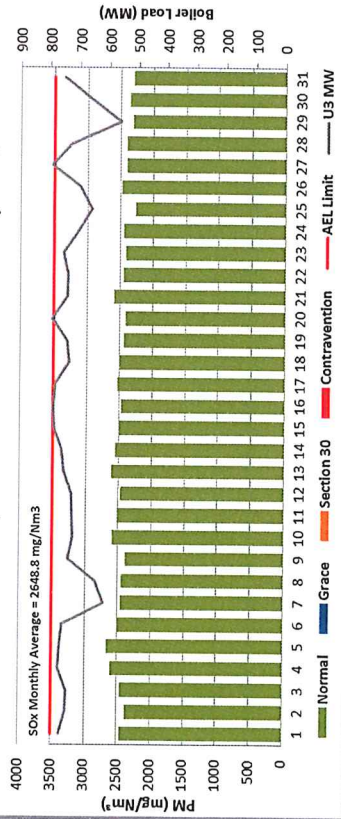


Figure 10: Medupi Unit 4 SOx Emissions - May 2022

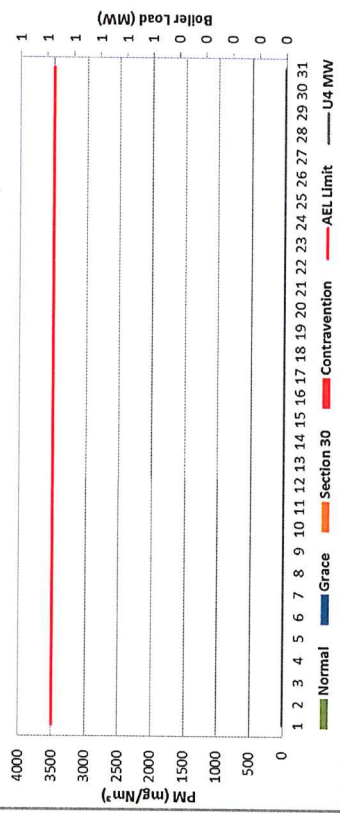


Figure 11: Medupi Unit 5 SOx Emissions - May 2022

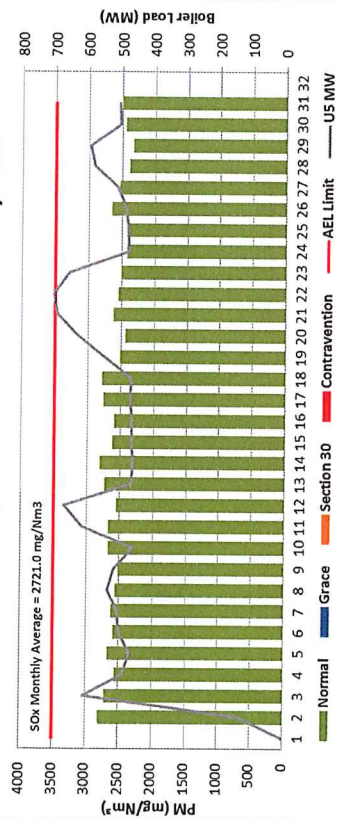
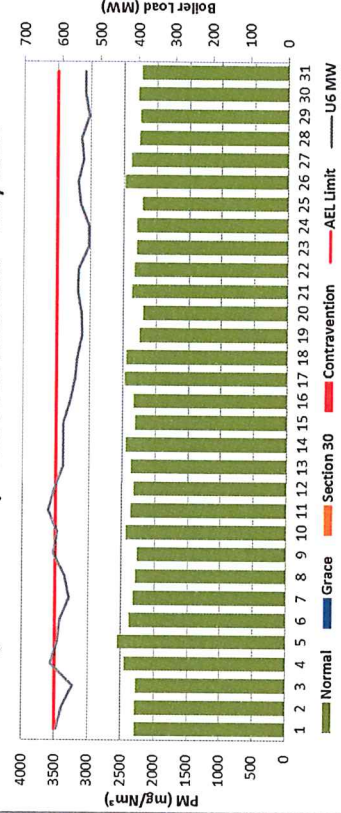


Figure 12: Medupi Unit 6 SOx Emissions - May 2022



CONTROLLED DISCLOSURE

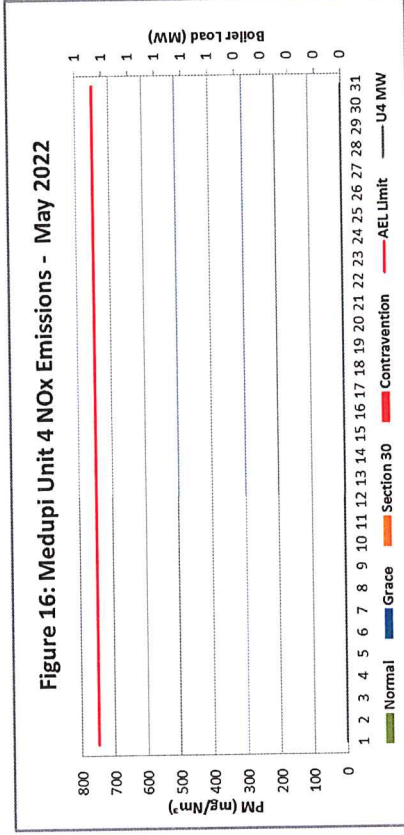
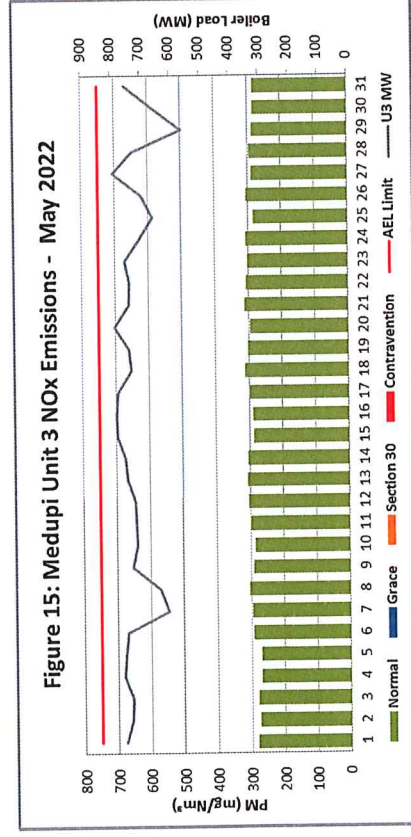
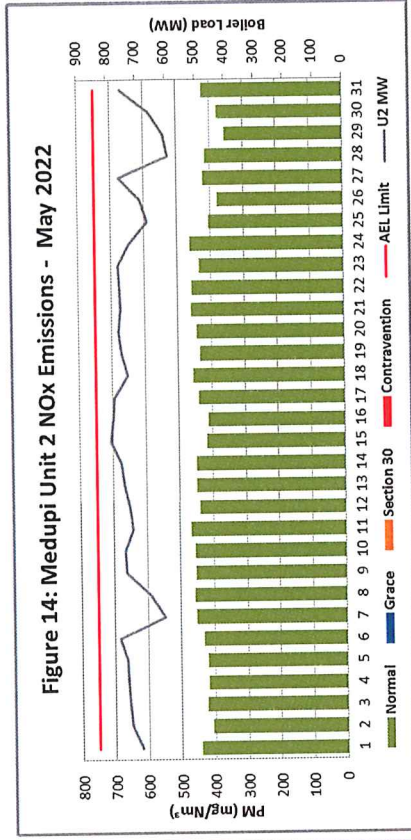
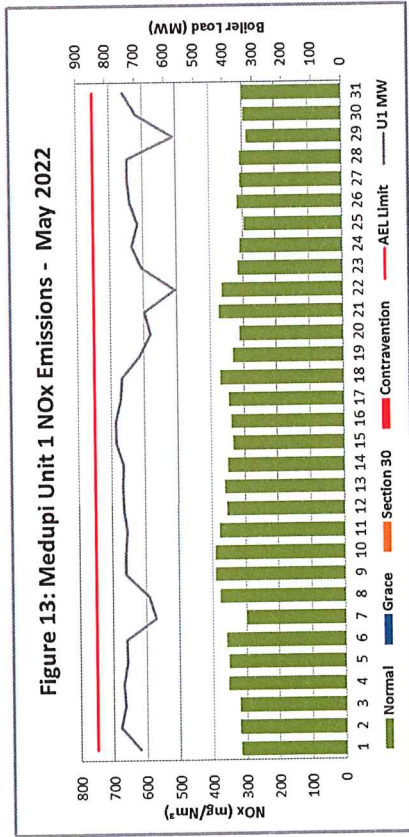
When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the database. No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Limited, Reg No 2002/015527/30.



Medupi Power Station Monthly Emissions Report

Template Identifier	240-43921804	Rev	6
Document Identifier	240-88543153	Rev	2
Effective Date	February 2022		
Review Date	February 2024		

4.2 NOx Daily Averages



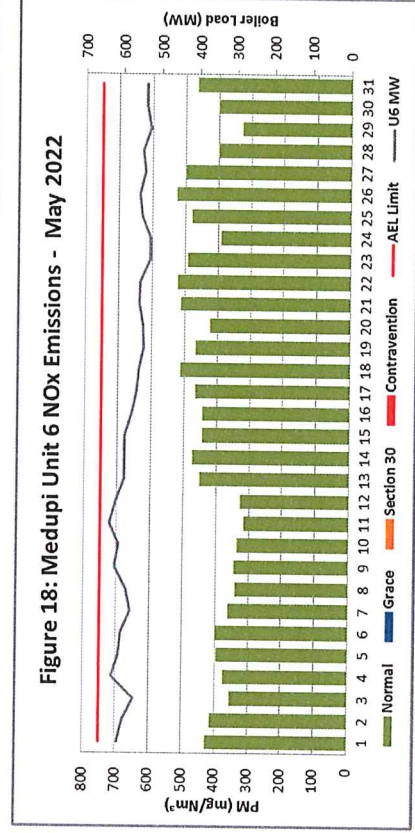
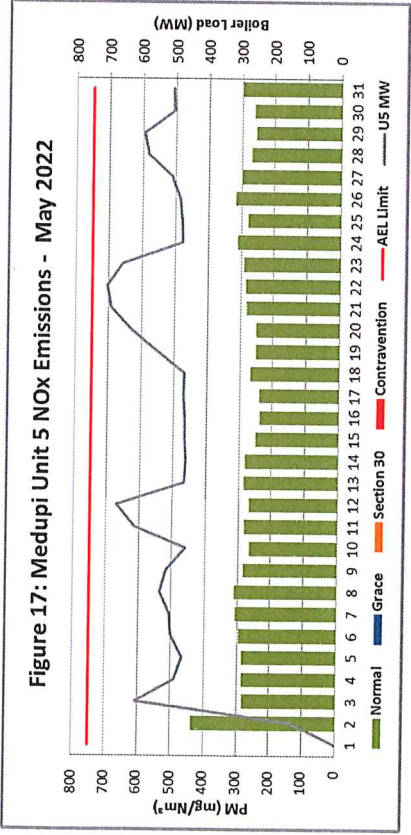
CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the database.
 No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Limited, Reg No 2002/015527/30.



Medupi Power Station Monthly Emissions Report

Template Identifier	240-43921804	Rev	6
Document Identifier	240-88543153	Rev	2
Effective Date	February 2022		
Review Date	February 2024		



Medupi Power Station graphical representation of the daily average emissions

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the database. No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Limited, Reg No 2002/015527/30.


	Medupi Power Station Monthly Emissions Report	Template Identifier	240-43921804	Rev	6
		Document Identifier	240-88543153	Rev	2
		Effective Date	February 2022		
		Review Date	February 2024		

TABLE 7: MONTHLY TONNAGES FOR THE MONTH OF MAY 2022

Associated Unit/Stack	PM	SO ₂	NO ₂
Unit 1	35.8	5 032.4	644.9
Unit 2	60.2	6 129.9	901.5
Unit 3	68.1	5 944.1	706.2
Unit 4	0.0	0.0	0.0
Unit 5	113.9	4 184.4	452.6
Unit 6	80.3	5 446.9	980.8
SUM	358.3	26 737.7	3 686.0

5. Continuous Emission Monitoring Systems (CEMS)

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

TABLE 6: PERIODS DURING WHICH CEMS WAS INOPERATIVE

Date	Time	CEMS status	Comments
N/A	N/A	N/A	N/A


TABLE 7: CEMS MONITOR RELIABILITY

Associated Unit/Stack	PM	SO ₂	NO	O ₂
Unit 1	100.0	99.9	99.9	99.8
Unit 2	100.0	99.9	99.9	99.9
Unit 3	100.0	99.9	99.9	99.9
Unit 4				
Unit 5	99.9	99.6	99.1	99.0
Unit 6	100.0	99.7	99.7	99.7

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the database.

No part of this document February be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Limited, Reg No 2002/015527/30.

	Medupi Power Station Monthly Emissions Report	Template Identifier	240-43921804	Rev	6
		Document Identifier	240-88543153	Rev	2
		Effective Date	February 2022		
		Review Date	February 2024		

6. CEMS Calibration certificates and equipment used for calibration

A service provider was appointed to calibrate CEMS equipment at Medupi Power Station, calibration certificates to be made available upon request.

7. Ambient Air Quality Monitoring Report

The Ambient Air Quality Monitoring and Dust fall-out report are emailed to the Licensing authority on a monthly basis.

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.

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the database.

No part of this document February be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Limited, Reg No 2002/015527/30.



	Medupi Power Station Monthly Emissions Report	Template Identifier	240-43921804	Rev	6
		Document Identifier	240-88543153	Rev	2
		Effective Date	February 2022		
		Review Date	February 2024		


TABLE 8: TOTAL VOLATILE ORGANIC COMPOUND (TVOC) FOR MAY 2022

		
CALCULATION OF EMISSIONS OF TOTAL VOLATILE COMPOUNDS FROM FUEL OIL STORAGE TANKS*		
Date:	31 May 2022	
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	
<p align="center"> MONTHLY INPUT DATA FOR THE STATION Please only insert relevant monthly data inputs into the <i>blue cells</i> below Choose from a dropdown menu in the <i>green cells</i> The total VOC emissions for the month are in the <i>red cells</i> IMPORTANT: Do not change <i>any</i> other cells without consulting the AQ CoE </p>		
MONTH:	May	
GENERAL INFORMATION:		
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:	1110	tons/month
Molecular weight of the fuel oil:	166.00	Lb/lb-mole
METEROLOGICAL DATA FOR THE MONTH		
Daily average ambient temperature	19.51	°C
Daily maximum ambient temperature	28.42	°C
Daily minimum ambient temperature	12.06	°C
Daily ambient temperature range	15.04	°C
Daily total insolation factor	3.91	kWh/m ² /day
Tank paint colour	Aluminum/Specular	NA
Tank paint solar absorbance	0.39	NA
FINAL OUTPUT:		
Breathing losses:	0.70 kg/month	
Working losses:	0.03 kg/month	
TOTAL LOSSES (Total TVOC Emissions for the month):	0.73 kg/month	
<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, 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. </small>		

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the database.

No part of this document February be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Limited, Reg No 2002/015527/30.

	Medupi Power Station Monthly Emissions Report	Template Identifier	240-43921804	Rev	6	
		Document Identifier	240-88543153	Rev	2	
		Effective Date	February 2022			
		Review Date	February 2024			

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

No awareness campaign.

10. Complaints Register


TABLE 9: COMPLAINTS FOR THE MONTH OF MAY 2022

Source Code/ Name	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
N/A	No complaints received	N/A	N/A	N/A	N/A

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the database.

No part of this document February be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Limited, Reg No 2002/015527/30.

	Medupi Power Station Monthly Emissions Report	Template Identifier	240-43921804	Rev	6
		Document Identifier	240-88543153	Rev	2
		Effective Date	February 2022		
		Review Date	February 2024		

Compiled by: Thabo Khoza 
 Senior Environmental Advisor

Verified by: Malose Langa 
 System Engineer Boiler

Supported by: Mokgadi Dikgale 
 Environmental Manager

Supported by: Jabulani Mkhathswa 
 Engineering Group Manager

I Zweli Witbooi, declares that the information provided in this report is accurate and correct.

Yours sincerely


 Zweli Witbooi
GENERAL MANAGER: MEDUPI POWER STATION (Acting)

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the database.

No part of this document February be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Limited, Reg No 2002/015527/30.

