



Medupi Power Station Monthly Emissions Report

Identifier	240-43921804	Rev	6
Document Identifier	240-88543153	Rev	1
Effective Date	January 2018		
Review Date	January 2021		

Phumudzo Thivhafuni

Date: 2018/09/20

Limpopo Dept. of Economic Development, Environment and Tourism

Enquiries:

Private Bag 9484
POLOKWANE
0700

Ref: 12/4/12L-W2/A3 – Aug 2018

Dear Phumudzo

MEDUPI POWER STATION MONTHLY EMISSIONS REPORT FOR THE MONTH OF AUGUST 2018

This document serves as the monthly report required in terms of Section 7.7.1 of Medupi Power Station Provisional Atmospheric Emission License (AEL), 12/4/12L-W2/A3.

This report is a reflection of Unit 4, 5 and 6 gaseous and particulate emissions performance against the AEL limit for the month of August 2018 only. Calculated CO₂ emissions is presented in this report, this is due to challenges regarding CO₂ monitoring in power station.

1. Raw Materials and Products

Table 1: Quantity of raw materials and products used/produced for Unit 4, 5 and 6 in August 2018

Raw Materials and Products used	Raw Material Type	Unit	Maximum Permitted Consumption/ Rate (Quantity)	Unit 4, 5 and 6 consumption August 2018
	Coal	Tons/month	1 875 000	508 409
	Fuel Oil	Tons/month	40 000	2711
Production Rates	Product/ By-Product Name	Unit	Maximum Production Capacity Permitted (Quantity)	Unit 4, 5 and 6 Production Rate in Month of August 2018
	Energy	MW	4800	1669.3
	Ash Emitted	Tons/month	not specified	132.0

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

Identifier	240-43921804	Rev	6
Document Identifier	240-88543153	Rev	1
Effective Date	January 2018		
Review Date	January 2021		


Table 2: Daily consumption and production rates

Date	Reportable hours of Operation			Fuel Consumption (tons)				Production rate (MW)		
	Unit 4	Unit 5	Unit 6	Oil			Coal	U4	U5	U6
				Aux Boiler	Unit 4, 5 & 6	Total	Unit 4, 5 & 6)			
01-Aug -18	24.0	5.4	9.7	0.00	99	99	17933	609	715	444
02-Aug -18	24.0	24.0	6.6	0.00	137	137	19278	606	707	487
03-Aug -18	24.0	24.0	14.3	0.00	0	0	16772	608	659	473
04-Aug -18	24.0	24.0	0.0	0.00	270	270	17974	622	679	484
05-Aug -18	24.0	24.0	2.7	0.00	39	39	16950	622	673	409
06-Aug -18	24.0	24.0	13.8	0.00	40	40	16920	609	638	330
07-Aug -18	24.0	24.0	24.0	0.00	13	13	16716	602	646	245
08-June -18	24.0	24.0	14.3	0.00	41	41	16573	609	670	413
09-Aug -18	24.0	24.0	0.0	0.00	23	23	17923	620	674	473
10-Aug -18	24.0	24.0	19.1	0.00	84	84	18364	621	618	467
11-Aug -18	24.0	24.0	24.0	0.00	45	45	19130	630	569	570
12-Aug -18	24.0	24.0	24.0	0.00	34	34	17597	580	503	555
13-Aug -18	24.0	24.0	24.0	0.00	46	46	18600	630	585	536
14-Aug -18	24.0	24.0	24.0	0.00	22	22	18080	620	523	532
15-Aug -18	24.0	24.0	24.0	0.00	0	0	18476	621	582	523
16-Aug -18	24.0	24.0	24.0	0.00	17	17	18926	600	608	610
17-Aug -18	24.0	24.0	24.0	0.00	10	10	18829	597	632	605
18-Aug -18	24.0	24.0	24.0	0.00	21	21	18447	603	621	571
19-Aug -18	24.0	24.0	24.0	0.00	13	13	19080	607	591	588
20-Aug -18	24.0	11.4	24.0	0.00	5	5	17551	623	481	597
21-Aug -18	24.0	7.2	2.7	0.00	123	123	14455	617	668	379
22-Aug -18	18.9	24.0	0.0	0.00	50	50	13929	643	688	353
23-Aug -18	0.0	24.0	8.7	0.00	390	390	16225	507	639	558
24-Aug -18	4.9	24.0	24.0	0.00	159	159	18901	613	644	557
25-Aug -18	0.0	24.0	24.0	0.00	22	22	12206	0	638	494
26-Aug -18	0.0	2.9	24.0	0.00	19	19	9133	0	423	463
27-Aug -18	0.0	15.1	24.0	0.00	170	170	11751	268	551	377
28-Aug -18	6.6	24.0	24.0	0.00	247	247	17014	571	568	371
29-Aug -18	24.0	0.8	3.6	0.00	92	92	10233	553	354	467
30-Aug -18	24.0	0.0	0.0	0.00	92	92	11097	611	362	412
31-Aug -18	24.0	13.1	0.0	2.75	385	388	13349	598	613	0

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	Identifier	240-43921804	Rev	6
		Document Identifier	240-88543153	Rev	1
		Effective Date	January 2018		
		Review Date	January 2021		

2. Abatement Technology

Table 3: Abatement Equipment Control Technology utilisation for month of August 2018

Associated Unit/Stack	Technology Type	Actual Utilisation (%) for the month of August 2018
Unit 4,5 and 6	Low NO _x Burners	100
	Pulse Jet Fabric Filter Plant	100

3. Energy Source Characteristics

Table 4: Energy Source Material Characteristics for the month of August 2018

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	1.46
Ash Content	35 - 39	35.67

Table 5: Energy Source Material Characteristics for the month of August 2018

Characteristic	Stipulated Range (%)	Monthly Average Content (%)
Oil		
Sulphur Content	0.5 - 3.5	2.4
Ash Content	0.02 - 0.1	0.021

4. Emissions Reporting

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

The daily emission limits are as follows:

SO₂= 3500 mg/Nm³

Dust= 50 mg/Nm³

NO₂= 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.

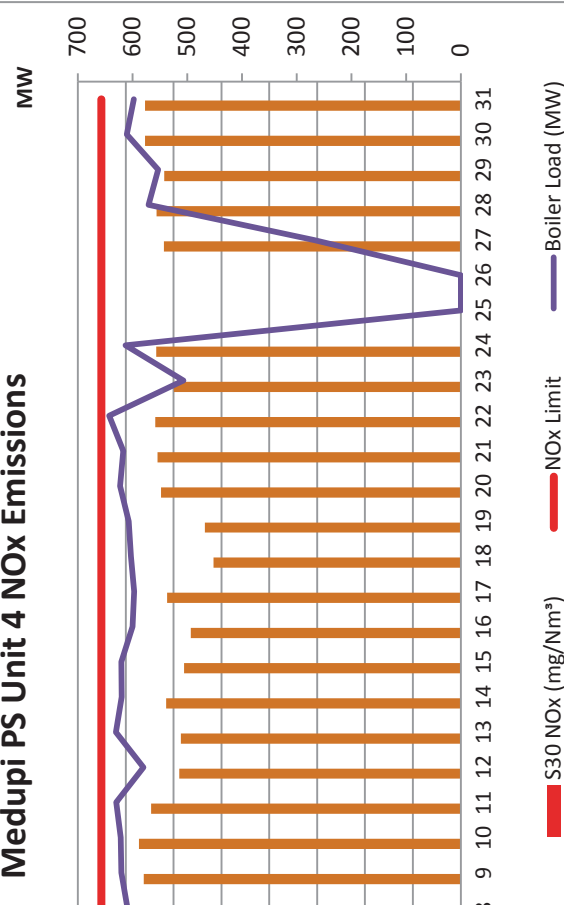
Averages emissions for the month of August 2018

PM (mg/Nm ³)	SO ₂ (mg/Nm ³)			NO ₂ (mg/Nm ³)			CO (mg/Nm ³)			Temp (°C)			Press (kPa)			Velocity (m/s)			O ₂ (%)			CO ₂ (mg/Nm ³)		
	5	6	4	5	6	4	5	6	4	5	6	4	5	6	4	5	6	4	5	6	4	5	6	4
27.42	33.97	2897.1	2700.0	2575.4	724.1	452.8	639.6	5	6	136.5	130.9	89.7	89.6	89.7	18.9	14.5	8.4	6.7	9.2	170.858				
26.25	53.20	2895.3	2778.3	2552.5	658.0	448.6	460.0	5	6	137.3	137.6	89.8	89.7	89.8	18.7	14.8	8.4	6.7	8.6	172.421				
24.31	33.52	3029.3	2889.9	2784.4	589.8	397.9	408.9	6	3	132.4	126.9	90.0	89.9	90.0	18.2	14.6	8.1	7.0	8.5	170.113				
27.81		2899.4	2755.6	2809.7	601.5	417.0	387.1	7	5	132.3	124.2	90.0	89.9	90.0	18.3	14.3	7.9	6.9	8.4	160.575				
31.54	34.29	2663.2	2494.6	2716.2	489.6	358.7	446.0	7	4	131.9	120.9	89.8	89.7	89.8	18.4	13.7	7.8	7.0	9.4	162.195				
26.35	26.30	2775.2	2673.9	2950.1	535.1	360.7	456.1	7	4	129.9	115.3	89.7	89.6	89.7	17.7	12.0	8.3	7.2	9.9	161.272				
27.18	30.18	2736.3	2556.4	2681.1	526.0	374.2	492.5	7	14	133.0	112.2	89.8	89.7	89.9	18.0	11.6	8.2	7.1	9.6	160.714				
45.71	29.22	2559.3	2264.6	2538.4	605.4	342.3	507.8	7	7	132.4	126.5	89.9	89.8	89.9	18.4	11.4	8.4	6.9	8.8	202.220				
49.01		2607.0	2356.0	2522.3	662.2	354.3	462.3	6	6	129.3	126.9	90.0	89.9	90.0	17.1	13.5	8.2	7.0	8.3	195.835				
37.40	22.55	2666.1	2579.4	2789.4	672.2	342.8	467.7	6	5	129.3	119.3	89.8	89.8	89.8	17.6	12.5	8.3	7.4	8.6	200.439				
30.43	30.21	2676.2	2637.3	2535.3	646.9	360.5	422.7	7	5	125.9	119.3	90.2	90.1	89.8	16.7	12.5	8.2	7.8	7.3	204.811				
20.87	27.40	2635.8	2476.8	2915.3	588.2	360.9	460.8	7	5	120.9	124.9	90.2	90.2	90.2	15.3	15.2	8.5	8.3	7.8	200.016				
25.37	29.03	2576.0	2480.5	2698.8	584.7	383.0	420.4	7	5	126.9	125.4	90.2	90.1	90.2	16.9	14.3	7.9	7.7	7.9	173.265				
21.67	25.27	2712.6	2536.5	2550.8	615.7	388.8	400.4	8	5	127.9	123.8	90.1	90.1	90.2	15.7	15.2	7.8	8.1	7.8	171.447				
25.14	29.37	2758.7	2539.1	2536.3	578.3	399.4	382.1	9	6	131.4	125.6	90.2	90.0	90.2	17.0	15.0	7.7	7.8	7.8	192.262				
22.72	35.45	2772.3	2526.9	2490.2	563.8	388.4	344.1	9	5	131.5	125.6	90.1	89.9	90.1	17.4	13.9	7.7	7.5	7.1	192.782				
25.63	37.52	2773.3	2496.0	2703.5	613.7	377.6	397.7	15	5	132.5	132.6	89.8	89.7	90.0	17.9	16.1	7.7	7.4	7.2	191.426				
26.59	37.75	2691.7	2385.8	2675.6	516.8	383.6	384.6	14	4	126.1	132.1	90.1	90.0	89.8	17.5	15.8	7.6	7.5	7.2	191.220				
19.30	33.62	2808.6	2502.5	2557.6	534.6	394.9	361.7	10	4	125.5	123.8	90.1	90.1	90.2	16.8	15.0	7.8	7.7	7.6	191.079				
11.78	31.07	3024.7	2689.9	2618.9	626.4	426.9	391.8	6	8	122.0	127.7	89.9	89.9	90.1	14.8	15.2	7.8	8.4	7.3	172.156				
20.85	37.60	3150.7	2983.2	2701.2	633.2	443.7	446.8	7	5	137.5	129.3	89.8	89.7	90.0	18.4	15.8	7.9	7.0	7.2	168.363				
21.91		3235.4	2862.0	2684.3	638.0	435.7	438.8	11	4	136.2	107.1	89.8	89.6	89.8	18.6	6.0	7.6	7.0	8.3	133.485				
23.98	20.99	2648.4	2461.5	2236.8	599.2	370.1	393.3	14	4	129.1	117.5	89.9	89.7	89.8	17.9	9.9	9.0	7.4	9.1	190.194				
22.84	20.09	2954.3	2824.0	2685.6	636.3	395.7	417.9	7	4	129.4	124.9	90.0	89.9	89.8	18.0	15.4	8.0	7.4	7.8	170.212				
19.75	19.52		3262.5	2857.1		408.6	415.5	4	0	129.0	122.9		89.9	90.0	18.1	15.5		7.4	7.9					
6.42	17.39		2676.5	3198.4		384.3	438.8	6	18	117.8	121.2		89.7	90.0	14.3	14.6		8.9	8.2					
20.73	21.44	2459.0	2948.3	3073.5	620.3	381.6	442.1	12	14	126.3	125.1	90.0	89.9	89.7	17.0	14.2	11.7	7.6	8.4	254.836				
26.19	18.53	3132.8	2649.8	2894.6	635.8	464.7	488.7	9	12	128.1	120.5	90.3	90.2	90.0	16.8	12.9	9.0	7.7	9.3	176.845				
12.09	18.21	2831.2	2408.0	2506.7	619.7	504.3	508.6	6	5	118.1	121.6	90.4	90.3	90.3	13.5	12.7	8.8	10.5	9.1	177.786				
		2796.3	2457.8	2488.4	659.3	516.4	478.7	6	9	124.9	124.1	90.1	90.0	90.3	13.3	13.2	8.4	9.9	8.4	162.182				
19.56		2796.3	2457.8	2488.4	659.3	516.4	478.7	6	4	136.2		90.0	89.9		17.5		8.3	7.1		101.636				

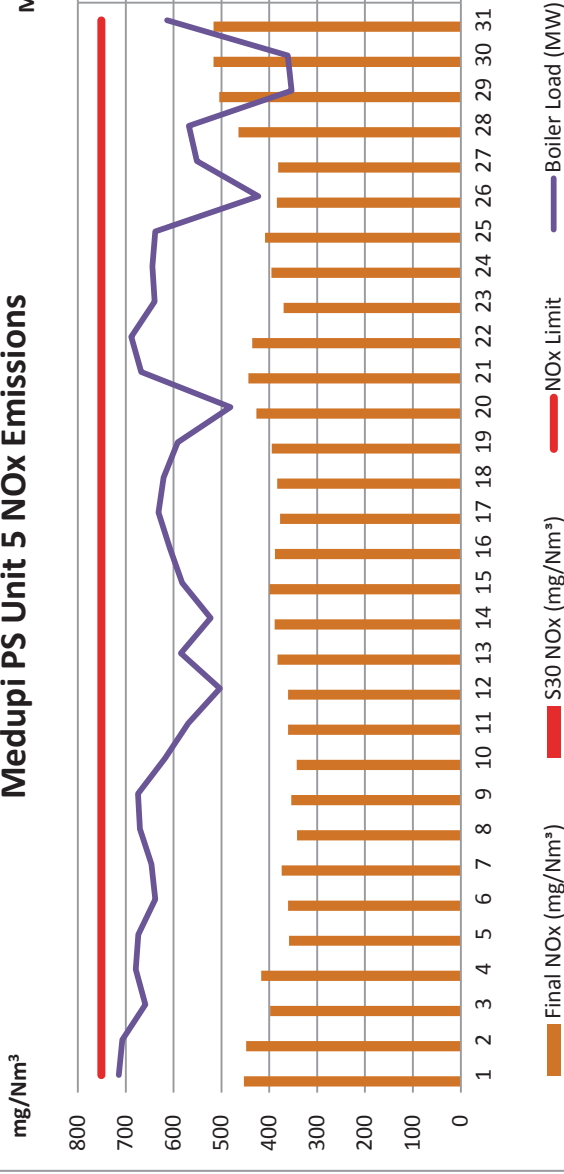
Temperature and velocity meters are faulty. A notification has been loaded for the maintenance team to fix the instrument. There is no reportable data on areas shaded black.

Graphical representation of the daily average emissions

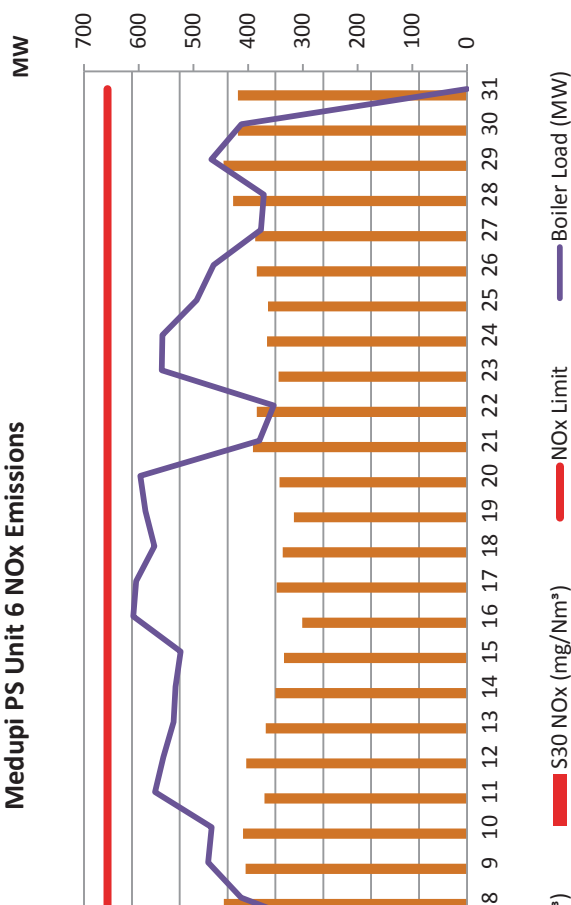
Medupi PS Unit 4 NOx Emissions



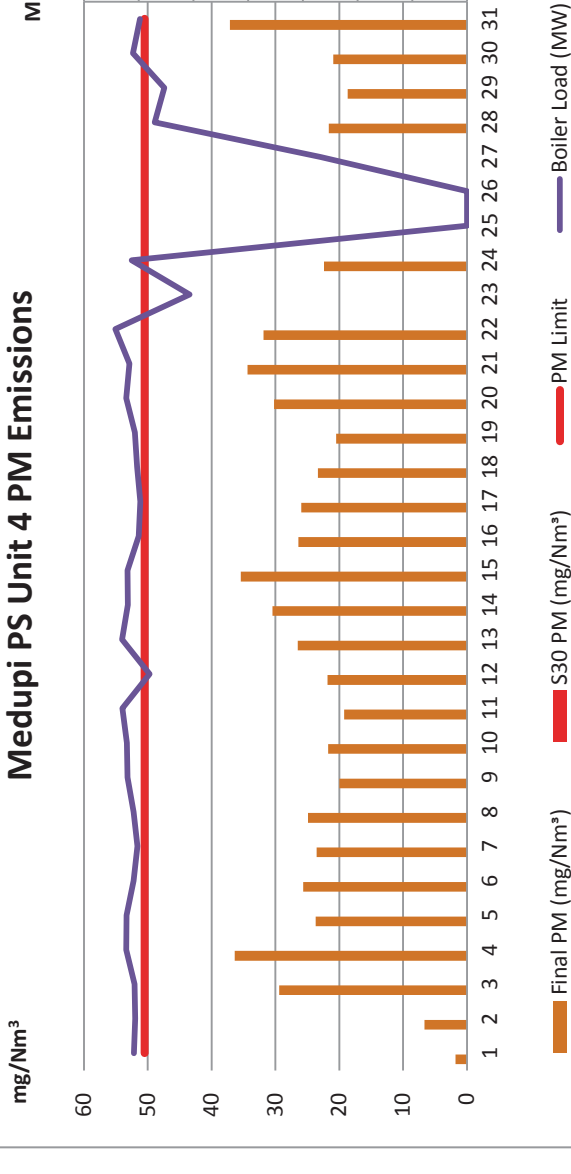
Medupi PS Unit 5 NOx Emissions



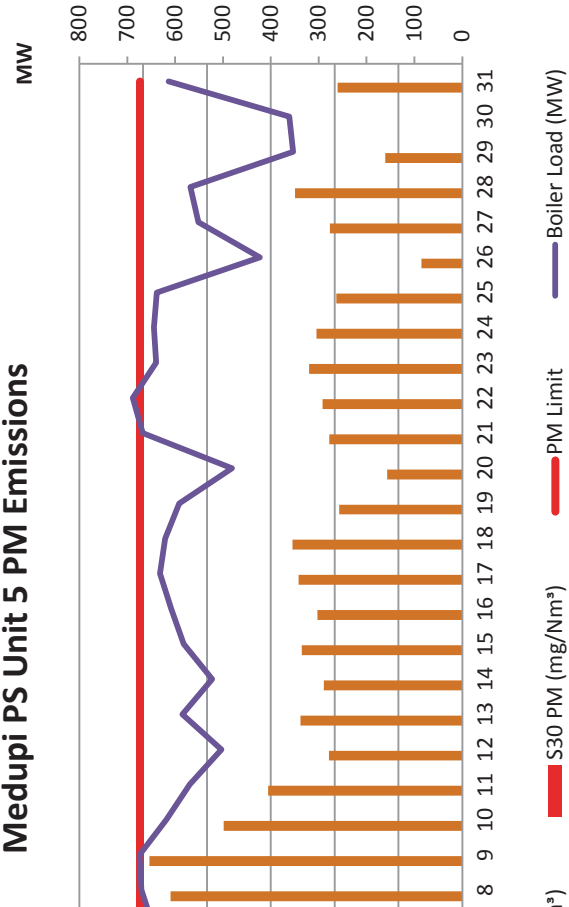
Medupi PS Unit 6 NOx Emissions



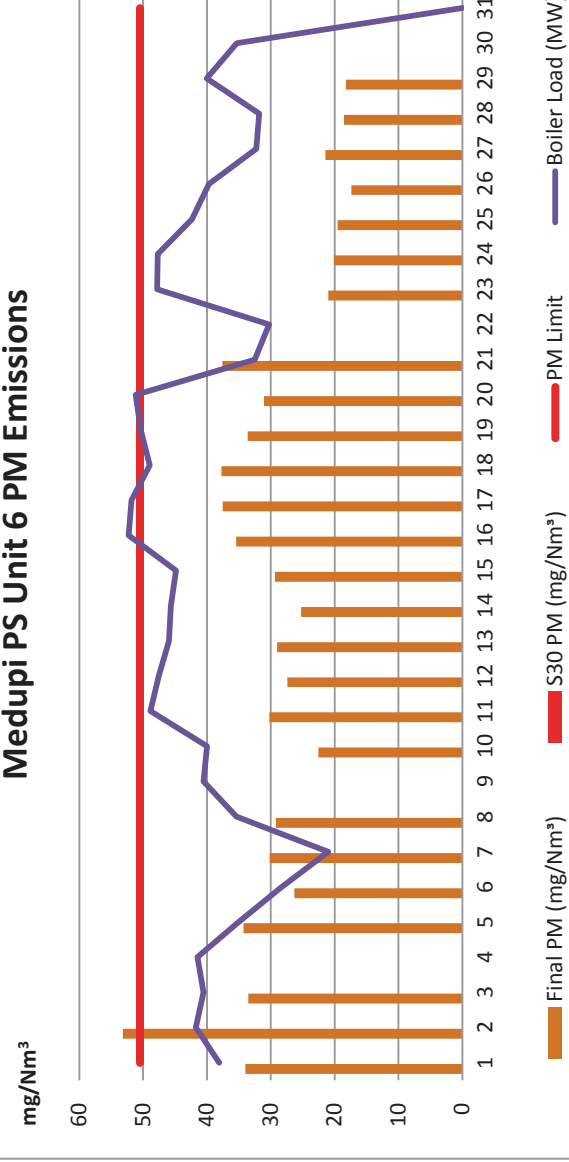
Medupi PS Unit 4 PM Emissions



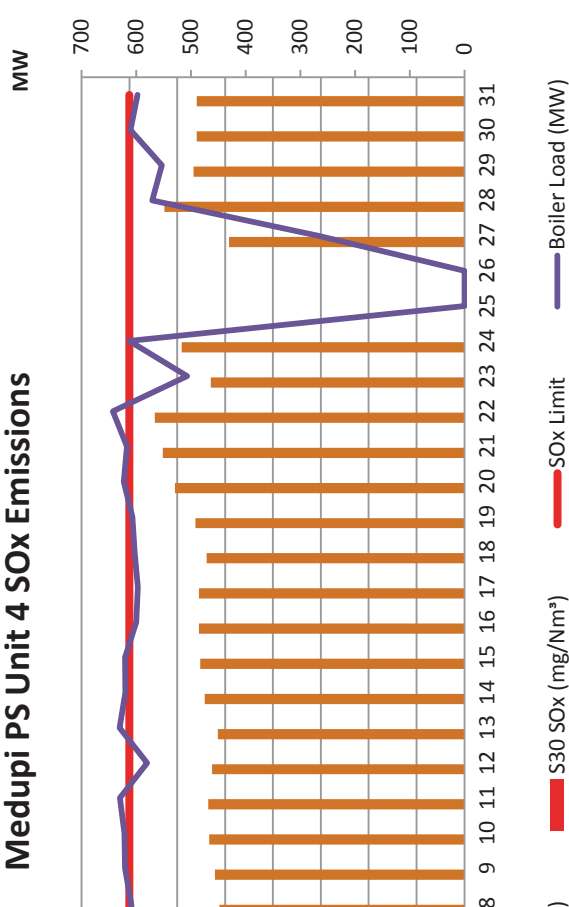
Medupi PS Unit 5 PM Emissions



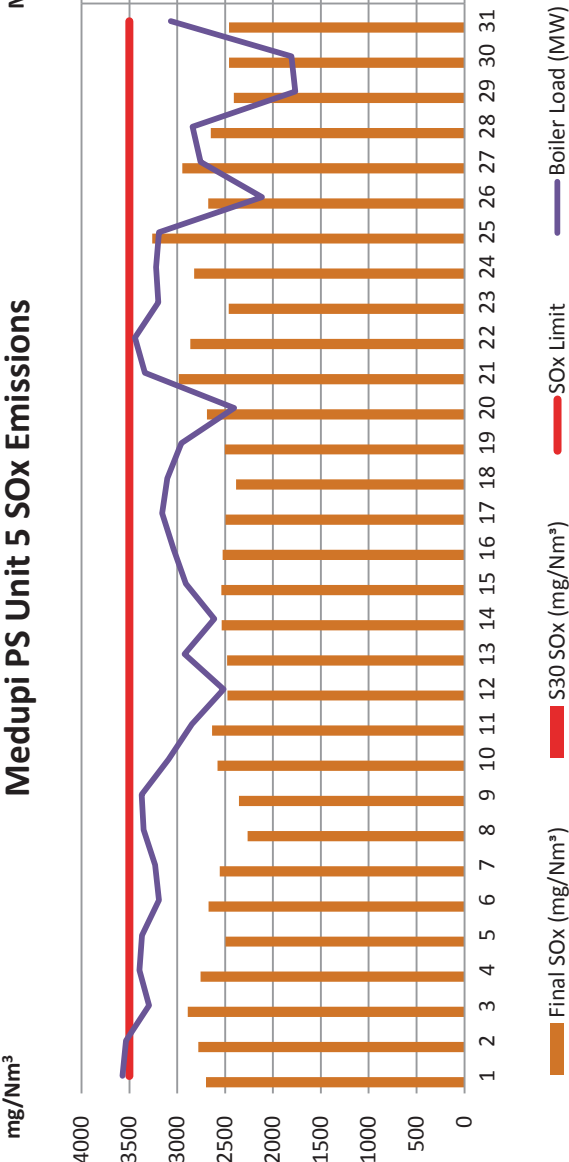
Medupi PS Unit 6 PM Emissions



Medupi PS Unit 4 SOx Emissions



Medupi PS Unit 5 SOx Emissions





Medupi Power Station Monthly Emissions Report

Template Identifier	240-43921804	Rev	6
Document Identifier	240-88543153	Rev	1
Effective Date	January 2018		
Review Date	January 2021		

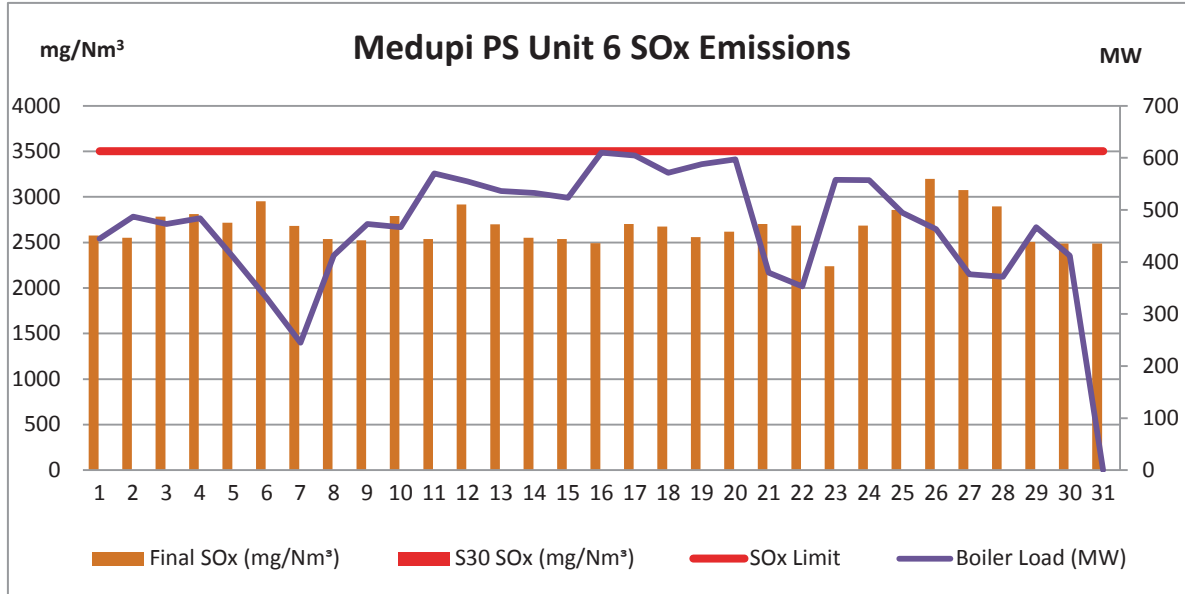


Table 7: Monthly tonnages for the month of August 2018


Unit	PM (tons)	SO ₂ (tons)	NO ₂ (tons)	CO (tons)	CO ₂ (tons)
1	0.0	0	0	0	0
2	0.0	0	0	0	0
3	0.0	0	0	0	0
4	39.3	4 208	910	11	288 312
5	48.3	4 753	711	10	
6	44.4	4 223	659	19	254 607
SUM	132.0	13 185	2 280	41	542 919

CO₂ Monthly tonnages unit 5 could not be calculated due to challenges relating to availability of Unit 5 monitor.

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	1
		Effective Date	January 2018		
		Review Date	January 2021		

5. Shutdown/start-up information

Table 8: Days operating under normal operation, days in grace period and section 30 days respectively

Unit	Operating Days (DD:HH:MM)			
	Normal operation	In grace period	Under S 30	Unit off load
1	00:00:00	00:00:00	00:00:00	31:00:00
2	00:00:00	00:00:00	00:00:00	31:00:00
3	00:00:00	00:00:00	00:00:00	31:00:00
4	27:16:30	00:00:00	00:00:00	03:07:30
5	29:02:30	00:00:00	00:00:00	01:21:30
6	24:15:40	01:07:15	00:00:00	05:01:05


Table 9: Days declared Emergency level one

Hours Declared EL1	
Date	EL1 Start
1 August 2018	(05:51) EL1 and MCR in force.
2 August 2018	(05:19) EL1 and MCR in force
3 August 2018	(05:33) EL1 and MCR in force.
4 August 2018	(08:05) EL1 and MCR in force.
5 August 2018	17:26 EL1 and MCR in force
6 August 2018	17:50 EL1 and MCR in force
7 August 2018	17:36 EL1 and MCR in force
8 August 2018	17:50 EL1 and MCR in force
9 August 2018	19:37 EL1 and MCR cancelled
10 August 2018	09h12 EL1 and MCR in force.
11 August 2018	09h12 EL1 and MCR in force.
12 August 2018	19:23 EL1 & MCR in force.
13 August 2018	16:21 EL1 and MCR in force.

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	1
		Effective Date	January 2018		
		Review Date	January 2021		

Hours Declared EL1	
Date	EL1 Start
20 August 2018	17:09 EL1 and MCR in force.
21 August 2018	17:17 EL1 and MCR in force. 20:30 EL1 cleared.
24 August 2018	14:18 EL1 and MCR in force.
25 August 2018	18:21 EL1 and MCR in force.
27 August 2018	17:26 EL1 and MCR in force.
29 August 2018	17:28 EL1 and MCR in force
30 August 2018	(17:56) EL1 and MCR in force

6. Comments on the performance and availability of each unit

Medupi power station operating units performed well within the ambit of the Atmospheric emissions licence except during start up.

7. Light up information

Table 10: PM Start-up information for the month of August

Event No.	Event 1		Event 2	
Unit 4	Unit		Unit 4	
Fires in	2018/08/22	2018/08/22	01:20 PM	2018/08/27
Synchronisation with Grid	05:45 PM	2018/08/23	05:20 PM	2018/08/27
Emissions below limit from Sync (Date and Time)	did not go above limit	did not go above limit	did not go above limit	did not go above limit
Fires in to synchronization	00:22:50	Hrs (dd:hh:mm)	00:04:00	Hrs (dd:hh:mm)
Synchronization to < limit (Duration)	did not go above limit	Hrs (dd:hh:mm)	did not go above limit	Hrs (dd:hh:mm)

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	1
Effective Date	January 2018		
Review Date	January 2021		

Event No.	Event 1		Event 2		Event 3	
Unit	Unit 5		Unit 5		Unit 5	
Fires in	12:10 PM	2018/08/20	02:55 AM	2018/08/26	12:00 AM	2018/08/30
Synchronisation with Grid	04:45 PM	2018/08/20	08:50 AM	2018/08/26	10:50 AM	2018/08/30
Emissions below limit from Sync (Date and Time)	did not go above limit	did not go above limit	did not go above limit	did not go above limit	did not go above limit	did not go above limit
Fires in to synchronization	00:04:35	Hrs (dd:hh:mm)	00:05:55	Hrs (dd:hh:mm)	00:10:50	Hrs (dd:hh:mm)
Synchronization to < limit (Duration)	did not go above limit	Hrs (dd:hh:mm)	did not go above limit	Hrs (dd:hh:mm)	did not go above limit	Hrs (dd:hh:mm)

Event No.	Event 1		Event 2		Event 3		Event 4		Event 5	
Unit 6	Unit 6		Unit 6		Unit		Unit 6		Unit 6	
Fires in	10:35 AM	2018/08/01	07:00 PM	2018/08/03	07:35 AM	2018/08/05	01:10 AM	2018/08/09	05:30 AM	2018/08/22
Synchronisation with Grid	05:20 PM	2018/08/01	04:50 AM	2018/08/04	10:10 AM	2018/08/05	04:50 AM	2018/08/09	03:15 PM	2018/08/22
Emissions below limit from Sync (Date and Time)	did not go above limit	did not go above limit	did not go above limit	did not go above limit	did not go above limit	did not go above limit	did not go above limit	did not go above limit	did not go above limit	did not go above limit
Fires in to synchronization	00:06:45	Hrs (dd:hh:m m)	00:09:50	Hrs (dd:hh:m m)	00:02:35	Hrs (dd:hh:m m)	00:03:40	Hrs (dd:hh:m m)	00:09:45	Hrs (dd:hh:m m)
Synchronization to < limit (Duration)	did not go above limit	Hrs (dd:hh:m m)	did not go above limit	Hrs (dd:hh:m m)	did not go above limit	Hrs (dd:hh:m m)	did not go above limit	Hrs (dd:hh:m m)	did not go above limit	Hrs (dd:hh:m m)

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	1
		Effective Date	January 2018		
		Review Date	January 2021		

Table 11: Emission Average from Fires-in to Synchronisation

South Stack Emission Average from Fires-in to Synchronisation (Date and Time)							
Unit	Fires-In		Synchronisation		PM	SO ₂	NO _x
Unit 4	2018/08/22	06:55 PM	2018/08/23	05:45 PM	23.7	2649.5	616.1
Unit 4	2018/08/27	01:20 PM	2018/08/27	05:20 PM	25.5	1247.1	344.5
Unit 5	2018/08/20	12:10 PM	2018/08/20	04:45 PM	3.6	2098.8	555.0
Unit 5	2018/08/26	02:55 AM	2018/08/26	08:50 AM	4.3	2543.6	447.5
Unit 5	2018/08/30	12:00 AM	2018/08/30	10:50 AM	3.4	2167.4	598.9
Unit 6	2018/08/01	10:35 AM	2018/08/01	05:20 PM	96.8	2014.2	732.1
Unit 6	2018/08/03	07:00 PM	2018/08/04	04:50 AM	41.1	2339.5	455.3
Unit 6	2018/08/05	07:35 AM	2018/08/05	10:10 AM	29.0	2474.5	451.1
Unit 6	2018/08/09	01:10 AM	2018/08/09	04:50 AM	65.1	2337.9	558.0
Unit 6	2018/08/22	05:30 AM	2018/08/22	03:15 PM	8.3	4.9	5.2

Table 12: Point Source emissions released during Shut-down

South Stack Emission Average Breaker Open (BO) to Draft Group Shut Down (SD) (Date & Time)							
Unit	Breaker Open		DG SD		PM	SO ₂	NO _x
Unit 4	2018/08/24	10:45 PM	2018/08/25	01:40 PM	10.7	3365.3	733.4
Unit 5	2018/08/20	11:25 AM	2018/08/20	11:25 AM	18.8	2463.0	561.9
Unit 6	2018/08/01	09:40 AM	2018/08/01	09:55 AM	28.2	2700.7	639.3
Unit 6	2018/08/03	02:15 PM	2018/08/03	05:45 PM	32.8	2914.0	436.9
Unit 6	2018/08/08	02:20 PM	2018/08/08	04:55 PM	34.9	2477.2	631.5
Unit 6	2018/08/21	02:40 AM	2018/08/21	03:20 AM	26.2	2696.3	476.4

8. Continuous Emission Monitoring Systems (CEMS)

Unit 4, 5 and 6 Continuous Emission Monitoring Systems were in operation at all times when the unit was on load. CEMS CO₂ monitor verification test not yet conducted, the Licencing Authority will be notified prior to conducting the test.

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	1
		Effective Date	January 2018		
		Review Date	January 2021		

Table 13: Periods during which CEMS was inoperative

Date	Time	Duration	Nature of Repair/Adjustment
N/A	N/A	N/A	N/A

Continuous emissions monitoring systems was operational through the month of August 2018.

Table 14: CEMS Monitor Reliability

Variable	Unit 4	Unit 5	Unit 6
Dust	99.7	100	100
SO ₂	99.8	99.8	97.0
NO _x	99.7	99.7	96.1
CO	98.8	99.7	99.7
O ₂	99.4	99.7	98.1
Temperature	0	99.7	94.3
Pressure	89.9	88.7	85.0
Velocity	0	100	100
CO ₂	0	0	0

9. CEMS Calibration certificates and equipment used for calibration

See attached Appendix A

10. 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.

11. Visual inspection of the exterior walls of the fuel oil tanks, fuel oil inventory data 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 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	1	
		Effective Date	January 2018			
		Review Date	January 2021			


Table 15: Total Volatile Organic Compound (TVOC) for August 2018

		
CALCULATION OF EMISSIONS OF TOTAL VOLATILE COMPOUNDS FROM FUEL OIL STORAGE TANKS*		
Date:	30 August 2018	
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 <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		
MONTH:	August	
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:	1761.109	tons/month
Molecular weight of the fuel oil:	166.00	Lb/lb-mole
METEROLOGICAL DATA FOR THE MONTH	Data	Unit
Daily average ambient temperature	20.60	°C
Daily maximum ambient temperature	27.37	°C
Daily minimum ambient temperature	13.11	°C
Daily ambient temperature range	10.46	°C
Daily total insolation factor	3.84	kWh/m ² /day
Tank paint colour	Aluminum/Specular	NA
Tank paint solar absorbance	0.39	NA
FINAL OUTPUT:	Result	Unit
Breathing losses:	0.61 kg/month	
Working losses:	0.05 kg/month	
TOTAL LOSSES (Total TVOC Emissions for the month):	0.66 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 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	1
		Effective Date	January 2018		
		Review Date	January 2021		

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

There were no activities relating to community awareness campaign during the month of August 2018.

13. Complaints Register


Table 16: Complaints for the month of August 2018

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 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	1
		Effective Date	January 2018		
		Review Date	January 2021		

Compiled by:

Senior Environmental Advisor

Reviewed by:

Boiler System Engineer

Supported by:

Boiler Engineering Manager

Supported by:

Environmental Manager

Supported by:

Engineering Group Manager (Acting)

I Rudi van der Wal, declares that the information provided in this report is accurate and correct.

Yours sincerely

GENERAL MANAGER: MEDUPI POWER STATION

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	1
Effective Date	January 2018		
Review Date	January 2021		

APPENDIX 1

CEMS Calibration certificates



12 Angellier Street, Bardene,
Boksburg, SA, 1459
PO Box 328, Isando, SA, 1600
VAT REG #: 421 021 2249
www.e-analytics.co.za

Tel: 0861 000 032
Intl. Tel: +27 11 918 6994
Fax: +27 11 894 1037
CO REG #: 2004/007607/07
info@e-analytics.co.za

E-TEST Level 4 Company

CALIBRATION CERTIFICATE

CUSTOMER:		Medupi Power Station	CERTIFICATE NO: 2706	
CONTACT NAME:		Christo Vorster	JOB NO:	SC943
MODEL:		Foedisch MGA 23	PHONE:	014 762 2255
AUXILIARY EQUIPMENT:		Unit 4	SERIAL NO:	

CHAN		PRIOR	FINAL	TEST GAS	TEST GAS VALUE	GAS CERTIFICATE NUMBER
1	ZERO	0.1 ppm	0 ppm	Air	21 %	Air
	SPAN	822 ppm	804 ppm	CO	803.9 ppm	80A
2	ZERO	2.6 ppm	0 ppm	Air	21 %	Air
	SPAN	832 ppm	834 ppm	NO	833.9 ppm	3207
3	ZERO	1.9 ppm	0 ppm	Air	21 %	Air
	SPAN	2267 ppm	2090 ppm	SO2	2090.4 ppm	12633
4	ZERO	0.12 %	0.0 %	N2	99.99 %	3207
	SPAN	21.34 %	20.95	O2	20.95 %	Air

REPORT: Inspect sample lines and sample system, check diagnostics. Calibrate analysers with zero and span gas, calibration was done according to cylinder standards, analysers were responding to all test gas.

Date: 24 July 2018

Calibration Due Date: Oct 2018

Technician:



Document Number: TH-PFC-002-F1 Rev 1

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	1
Effective Date	January 2018		
Review Date	January 2021		



12 Angelier Street, Bardene,
Boksburg, SA, 1459
PO Box 328, Isando, SA, 1600
VAT REG #: 421 021 2249
www.e-analytics.co.za

Tel: 0861 000 032
Int'l. Tel: +27 11 918 6994
Fax: +27 11 994 1037
CO REG #: 2004/007607/07
info@e-analytics.co.za

CALIBRATION CERTIFICATE

CERTIFICATE NO: 2797

CUSTOMER:	Medupi Power Station	JOB NO.:	SC043
CONTACT NAME:	Christo Vorster	PHONE:	014 762 2255
MODEL:	Foedisch MGA 23	SERIAL NO.:	
AUXILIARY EQUIPMENT:	Unit 5		

CHAN		PRIOR	FINAL	TEST GAS	TEST GAS VALUE	GAS CERTIFICATE NUMBER
1	ZERO	0.3 ppm	0 ppm	Air	21 %	Air
	SPAN	835 ppm	804 ppm	CO	803.9 ppm	804
2	ZERO	1.8 ppm	0 ppm	Air	21 %	Air
	SPAN	833 ppm	834 ppm	NO	833.9 ppm	3207
3	ZERO	3.1 ppm	0 ppm	Air	21 %	Air
	SPAN	2248 ppm	2090 ppm	O2	2090.4 ppm	12633
4	ZERO	0.03 %	0.0 %	N2	99.99 %	3207
	SPAN	21.01 %	20.95 %	O2	20.95 %	Air

REPORT: Inspect sample lines and sample system, check diagnostics. The peristaltic pump on cooler 1 for unit 5 must be replaced. Calibrate analysers with zero and span gas, calibration was done according to cylinder standards, analysers were responding to all test gas.

Date: 24 July 2018

Calibration Due Date: Oct 2018

Technician:



Document Number: TR-PFC-002-F1 Rev 1

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	1
Effective Date	January 2018		
Review Date	January 2021		



12 Angeller Street, Bardene,
Boksburg, SA, 1459
PO Box 328, Isando, SA, 1600
VAT REG #: 421 021 2249
www.e-analytics.co.za

Tel: 0861 000 032
Intl. Tel: +27 11 918 6994
Fax: +27 11 894 1037
CO REG #: 2004/007607/07
info@e-analytics.co.za

CALIBRATION CERTIFICATE

		CERTIFICATE NO: 2708	
CUSTOMER:	Medupi Power Station	JOB NO:	SC943
CONTACT NAME:	Christo Vorster	PHONE:	014 762 2255
MODEL:	Foedisch MGA 23	SERIAL NO:	
AUXILIARY EQUIPMENT:	Unit 6		

CHAN		PRIOR	FINAL	TEST GAS	TEST GAS VALUE	GAS CERTIFICATE NUMBER
1	ZERO	-3.0 ppm	0 ppm	Air	21 %	Air
	SPAN	829 ppm	804 ppm	CO	803.9 ppm	80A
2	ZERO	-5.1 ppm	0 ppm	Air	21 %	Air
	SPAN	837 ppm	834 ppm	NO	833.9 ppm	3207
3	ZERO	-1.7 ppm	0 ppm	Air	21 %	Air
	SPAN	2173 ppm	2090 ppm	SO2	2090.4 ppm	12633
4	ZERO	0.09 %	0.0 %	N2	99.99 %	3207
	SPAN	21.17 %	20.95	O2	20.95 %	Air

REPORT: Inspect sample lines and sample system, check diagnostics. Calibrate analysers with zero and span gas, calibration was done according to cylinder standards, analysers were responding to all test gas.

Date: 24 July 2018

Calibration Due Date: Oct 2018

Technician:

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.