	<b>Medupi Power Station Annual Emissions Report</b>	Template Identifier	240-43921804	Rev	6
		Document Identifier	240-122798356	Rev	2
		Effective Date	May 2021		
		Review Date	May 2024		

Stanley Koenaitse

Waterberg District Municipality

Private Bag X1018  
Modimole  
0510

skoenaite@waterberg.gov.za

Ref: H16/1/13-AEL/M1/R1 Annual 2021/2022

Dear Mr Koenaitse

Date: 2022/03/31

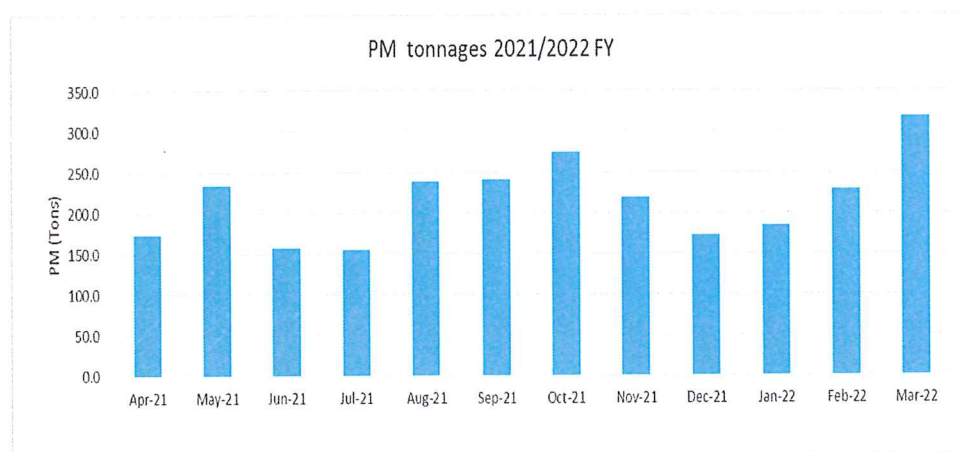
Enquiries: MF.Dikgale

Tel: 014 762 6820

## MEDUPI POWER STATION ANNUAL EMISSIONS REPORT

This serves as the Annual report required in terms of Section 7.7.3 of Medupi Power Station Provisional Atmospheric Emission License (AEL). Emissions for particulates (PM<sub>10</sub>), SO<sub>2</sub>, and NO<sub>x</sub> (as NO<sub>2</sub>) gases are presented in this report from April 2021 to March 2022.

### 1. The emissions in the graphs below are from April 2021 to March 2022.




**Figure 1: Unit 1-6 PM Tonnages**

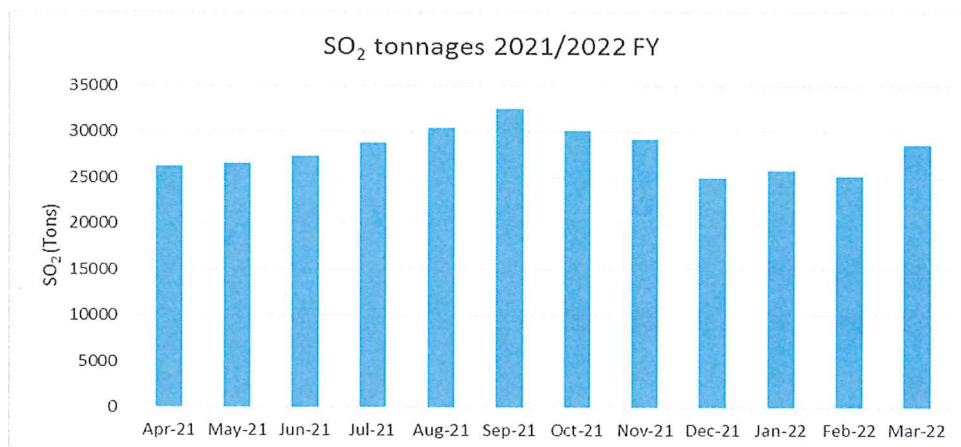
Note: Unit 1 tonnages included from August 2021 – March 2022 when the Unit went on commercial operation.

## 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 authorised version on the system.

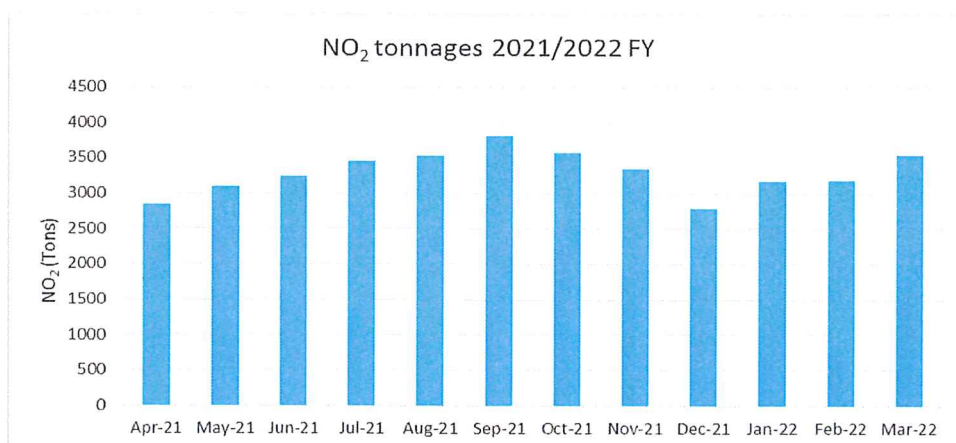
No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Limited, Reg No 2002/015527/30.

	<b>Medupi Power Station Annual Emissions Report</b>	Template Identifier	240-43921804	Rev	6
		Document Identifier	240-122798356	Rev	2
		Effective Date	May 2021		
		Review Date	May 2024		



**Figure 2: Unit 1-6 SO<sub>2</sub> Tonnages**

Note: Unit 1 tonnages included from August 2021 – March 2022 when the Unit went on commercial operation.




**Figure 3: Unit 1-6 NO<sub>2</sub> Tonnages**

Note: Unit 1 tonnages included from August 2021 – March 2022 when the Unit went on commercial operation.

### 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 authorised version on the system.

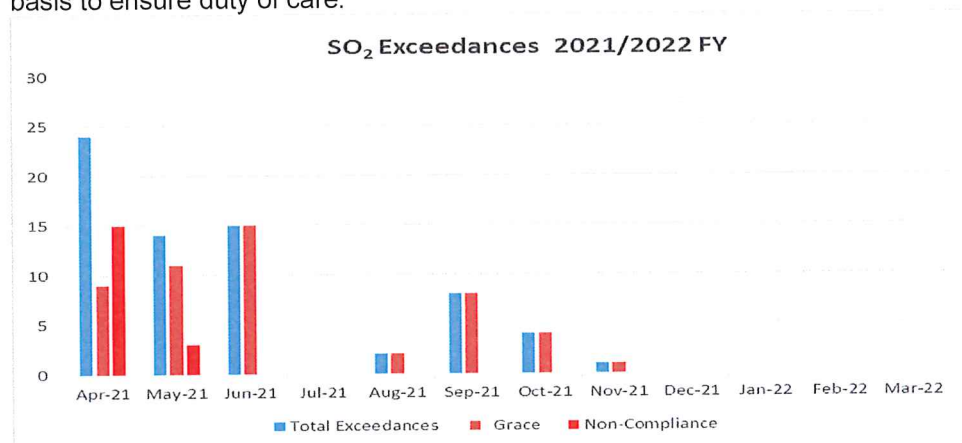
No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Limited, Reg No 2002/015527/30.

	<b>Medupi Power Station Annual Emissions Report</b>	Template Identifier	240-43921804	Rev	6
		Document Identifier	240-122798356	Rev	2
		Effective Date	May 2021		
		Review Date	May 2024		

## 2. The emissions Exceedances

### 2.1 SO<sub>2</sub> Emissions

A monthly average SO<sub>2</sub> limit of 3500 mg/Nm<sup>3</sup> was granted and is in effect from July 2019 as reflected on the Medupi Power Station AEL. SO<sub>2</sub> emissions are monitored and managed on a daily basis to ensure duty of care.



**Figure 4: SO<sub>2</sub> daily emissions exceedances**


Although there were intermittent exceedances recorded for the daily SO<sub>2</sub> emissions during this reporting period. Only two cumulative monthly average exceedances of the 3500mg/Nm<sup>3</sup> monthly limit were recorded for the months of April 2021 (3600mg/Nm<sup>3</sup> Unit 3) and May 2021 (3522.5 mg/Nm<sup>3</sup> Unit 3). Measures such as changing from direct feed from the mine to feeding from the stockpiles and vice versa were implemented on-site to reduce SO<sub>2</sub> emissions.

As a continuous mitigation, Medupi Power Station uses a reclaimer to blend coal at the coal stockyard in order to mix the high and low sulphur content coal. In future, Medupi Power Station will retrofit each Unit with Flue Gas Desulphurization (FGD) Plants in order to reduce SO<sub>2</sub> emissions. Additionally, the online coal analyser is installed on the Overland Conveyor 1 (OV1) to assist with determining the sulphur content of coal before stacking.

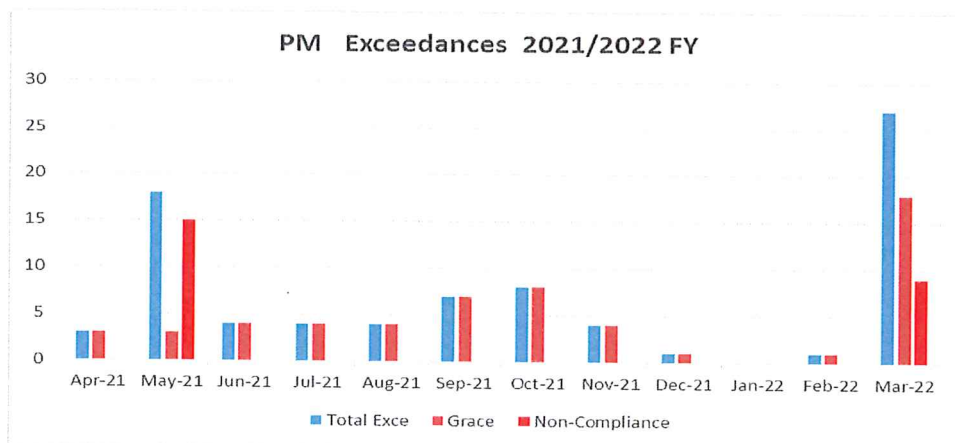
## CONTROLLED DISCLOSURE

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 authorised version on the system.

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.

	<b>Medupi Power Station Annual Emissions Report</b>	Template Identifier	240-43921804	Rev	6
		Document Identifier	240-122798356	Rev	2
		Effective Date	May 2021		
		Review Date	May 2024		

## 2.2 Particulates Emissions



**Figure 5: Particulates emissions**

Medupi Power Station makes use of the Pulse Jet Fabric Filter Plant (PJFF) to reduce particulate emissions from the stack. There were a number exceedances of the particulate matter that were recorded throughout the financial year 2021/2022. PJFF plant experienced technical difficulties during this reporting period and exceeded the limit on a number of occasions as a result of PJFF and faulty analyzers. No s30 incidents were reported for this reporting period. The majority of the exceedances recorded were however as a result of shut downs, start-ups or upset conditions. Exceedances picked up upon back-fitting the data to the reporting tool and plant failures were reported as legal contraventions on the monthly emissions reports and also notifications were submitted to DFFE.


## 2.3 NO<sub>2</sub> Emissions

There was no exceedance of the 750mg/Nm<sup>3</sup> limit during the reporting period.

## 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 authorised version on the system.

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.

	<b>Medupi Power Station Annual Emissions Report</b>	Template Identifier	240-43921804	Rev	6
		Document Identifier	240-122798356	Rev	2
		Effective Date	May 2021		
		Review Date	May 2024		

## 2.4 CEMS reliability (%)

Table 1- CEMS Reliability 2021/22 FY

April 2021

Associated Unit/Stack	PM	SO <sub>2</sub>	NO <sub>2</sub>	O <sub>2</sub>
Unit 1	-	-	-	-
Unit 2	99,8	100,0	100,0	99,7
Unit 3	97,0	100,0	100,0	99,2
Unit 4	99,5	99,6	99,4	97,3
Unit 5	0	0	0	0
Unit 6	99,6	90,0	87,6	89,9

Note: Unit 5 was on outage

May 2021

Associated Unit/Stack	PM	SO <sub>2</sub>	NO <sub>2</sub>	O <sub>2</sub>
Unit 1	-	-	-	-
Unit 2	100,0	100,0	100,0	100,0
Unit 3	100,0	100,0	100,0	90,6
Unit 4	100,0	100,0	100,0	99,8
Unit 5	0	0	0	0
Unit 6	99,7	84,5	84,5	84,5


June 2021

Associated Unit/Stack	PM	SO <sub>2</sub>	NO <sub>2</sub>	O <sub>2</sub>
Unit 1	-	-	-	-
Unit 2	100,0	98,2	98,2	98,2
Unit 3	100,0	100,0	100,0	99,7
Unit 4	100,0	99,9	99,9	99,9
Unit 5	100,0	98,5	98,5	98,5
Unit 6	100,0	99,6	99,6	95,5

## 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 authorised version on the system.

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.

	<b>Medupi Power Station Annual Emissions Report</b>	Template Identifier	240-43921804	Rev	6
		Document Identifier	240-122798356	Rev	2
		Effective Date	May 2021		
		Review Date	May 2024		

July 2021

Associated Unit/Stack	PM	SO <sub>2</sub>	NO <sub>2</sub>	O <sub>2</sub>
Unit 1	-	-	-	-
Unit 2	100,0	96,8	96,8	100,0
Unit 3	100,0	99,7	100,0	100,0
Unit 4	100,0	96,7	96,5	93,8
Unit 5	100,0	100,0	100,0	99,6
Unit 6	100,0	100,0	100,0	99,7

August 2021

Associated Unit/Stack	PM	SO <sub>2</sub>	NO <sub>2</sub>	O <sub>2</sub>
Unit 1	99,6	99,6	99,6	99,6
Unit 2	99,6	99,6	99,6	99,6
Unit 3	99,5	99,6	95,5	93,3
Unit 4	100,0	100,0	100,0	99,9
Unit 5	100,0	100,0	100,0	100,0
Unit 6	99,2	100,0	100,0	100,0

September 2021

Associated Unit/Stack	PM	SO <sub>2</sub>	NO <sub>2</sub>	O <sub>2</sub>
Unit 1	99,5	91,0	91,0	91,0
Unit 2	100,0	100,0	100,0	100,0
Unit 3	99,9	100,0	100,0	99,5
Unit 4				
Unit 5	100,0	99,5	100,0	99,7
Unit 6	100,0	99,7	99,7	98,7


Note: Unit 4 off due to the turbine explosion incident that occurred in August 2021

October 2021

### 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 authorised version on the system.

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.

	<b>Medupi Power Station Annual Emissions Report</b>	Template Identifier	240-43921804	Rev	6
		Document Identifier	240-122798356	Rev	2
		Effective Date	May 2021		
		Review Date	May 2024		

Associated Unit/Stack	PM	SO <sub>2</sub>	NO <sub>2</sub>	O <sub>2</sub>
Unit 1	100,0	100,0	100,0	99,9
Unit 2	100,0	100,0	100,0	99,9
Unit 3	100,0	100,0	100,0	100,0
Unit 4				
Unit 5	100,0	99,9	99,9	98,8
Unit 6	96,8	99,3	97,8	99,3

November 2021

Associated Unit/Stack	PM	SO <sub>2</sub>	NO <sub>2</sub>	O <sub>2</sub>
Unit 1	100,0	100,0	100,0	99,9
Unit 2	100,0	100,0	100,0	100,0
Unit 3	100,0	89,2	100,0	88,0
Unit 4				
Unit 5	100,0	100,0	100,0	100,0
Unit 6	97,0	100,0	96,3	99,8

December 2021

Associated Unit/Stack	PM	SO <sub>2</sub>	NO <sub>2</sub>	O <sub>2</sub>
Unit 1	0	0	0	0
Unit 2	100,0	100,0	94,1	95,4
Unit 3	100,0	98,1	90,9	90,2
Unit 4				
Unit 5	99,8	97,3	83,8	97,3
Unit 6	96,7	100,0	96,8	100,0


Note: Unit 1 was on outage

January 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 authorised version on the system.

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.

	<b>Medupi Power Station Annual Emissions Report</b>	Template Identifier	240-43921804	Rev	6
		Document Identifier	240-122798356	Rev	2
		Effective Date	May 2021		
		Review Date	May 2024		

Associated Unit/Stack	PM	SO <sub>2</sub>	NO <sub>2</sub>	O <sub>2</sub>
Unit 1	100,0	99,8	99,2	99,2
Unit 2	100,0	99,9	99,9	99,9
Unit 3	100,0	99,9	99,9	99,9
Unit 4				
Unit 5	98,7	100,0	100,0	100,0
Unit 6	100,0	100,0	99,9	99,6

February 2022

Associated Unit/Stack	PM	SO <sub>2</sub>	NO <sub>2</sub>	O <sub>2</sub>
Unit 1	100,0	99,9	99,9	99,9
Unit 2	100,0	99,9	99,9	99,9
Unit 3	100,0	99,1	96,6	96,4
Unit 4				
Unit 5	98,8	96,1	95,7	99,3
Unit 6	100,0	99,7	86,7	88,9


March 2022

Associated Unit/Stack	PM	SO <sub>2</sub>	NO <sub>2</sub>	O <sub>2</sub>
Unit 1	100,0	100,0	99,9	99,9
Unit 2	100,0	99,8	99,5	99,0
Unit 3	100,0	99,7	99,4	99,6
Unit 4				
Unit 5	100,0	98,9	98,9	96,8
Unit 6	95,7	100,0	100,0	100,0

### 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 authorised version on the system.

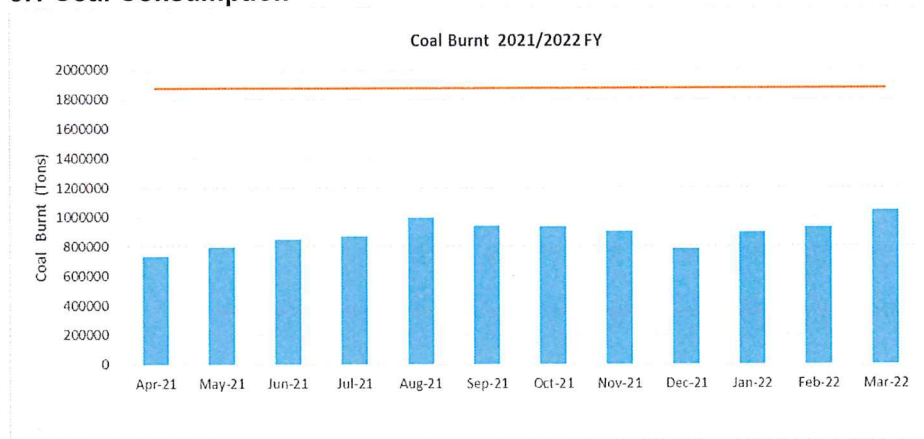
No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Limited, Reg No 2002/015527/30.

	<b>Medupi Power Station Annual Emissions Report</b>	Template Identifier	240-43921804	Rev	6
		Document Identifier	240-122798356	Rev	2
		Effective Date	May 2021		
		Review Date	May 2024		

### 3. Consumption Rate and Production Rate

Medupi Power Station AEL No. H16/1/13-AEL/M1/R1 prescribes limits for raw materials consumption such as coal and fuel oil. The maximum allowable consumption rate for fuel oil and coal is 20 000 and 1 875 000 tons per month respectively.

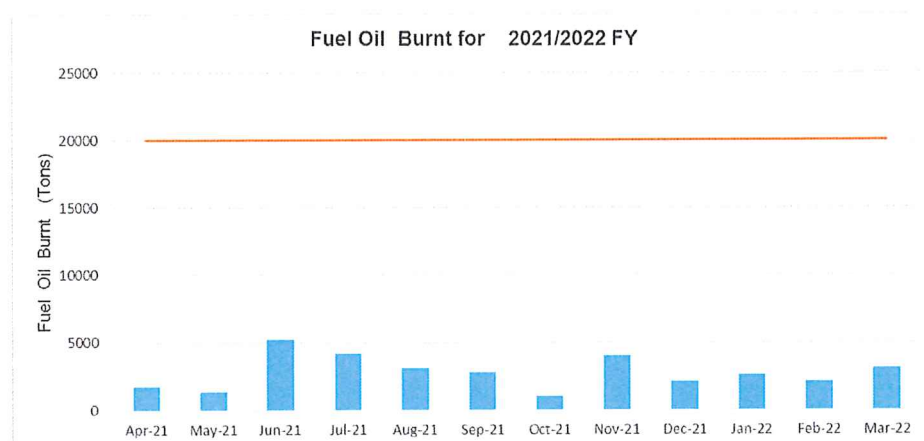
#### 3.1 Coal Consumption



**Figure 6: Medupi Power Station monthly coal consumption rate**

Medupi Power Station coal consumption rate was well within the limit 1 875 000 tons/month as prescribed by the provisional AEL.


#### 3.2 Fuel Oil consumption



### 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 authorised version on the system.

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.

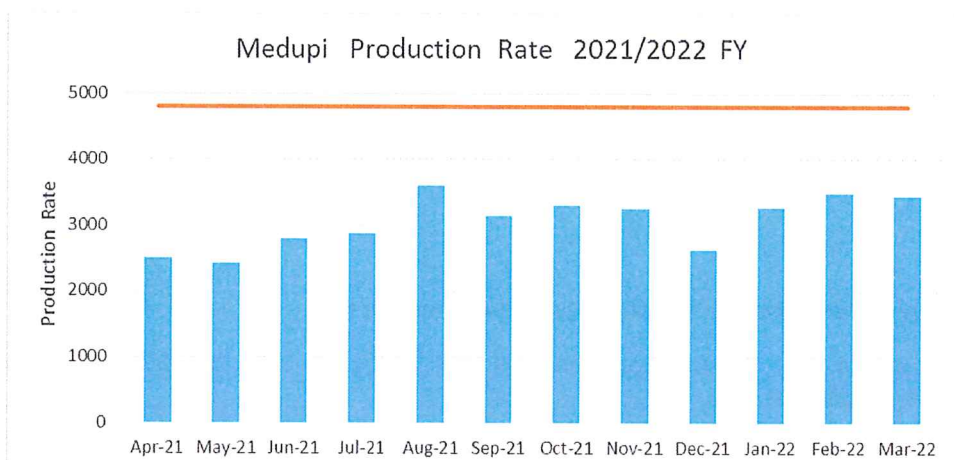
	<b>Medupi Power Station Annual Emissions Report</b>	Template Identifier	240-43921804	Rev	6
		Document Identifier	240-122798356	Rev	2
		Effective Date	May 2021		
		Review Date	May 2024		

**Figure 7: Medupi Power Station Fuel Oil Consumption**

Medupi Power Station uses fuel oil during Unit light up, the maximum allowable tons of fuel oil to be used by Medupi Power Station is 20 000 tons/month. The Power Station monitors the monthly usage and report to Waterberg District Municipality (WDM) on a monthly basis, figure 9 indicates that the Power Station is in compliance to the requirements of the provisional AEL limit of 20 000 tons per month.

### 3.3 Production rates

The maximum licensed production capacity is limited to 4 800 MW. The power station remained within prescribed limit for the period between April 2021 and March 2022. For most of the month, the Units operated with load losses in order to reduce particulate emissions.



**Figure 8: Average monthly production rate**

## 4. Ambient Air Quality


Eskom commissioned an ambient air quality monitoring site at Kroonmdraai farm to assess background conditions of ambient air quality prior to the commissioning of Medupi Power Station and the impacts on the environment thereof. The Medupi site is equipped for continuous monitoring of ambient concentrations of sulphur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), fine particulate matter of sizes <10µm and <2.5 in diameter (PM<sub>10</sub> and PM<sub>2.5</sub>).

**Table 2: Number of exceedances of the National Ambient Air Quality Limits for reporting period**

### 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 authorised version on the system.

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.

	<b>Medupi Power Station Annual Emissions Report</b>	Template Identifier	240-43921804	Rev	6
		Document Identifier	240-122798356	Rev	2
		Effective Date	May 2021		
		Review Date	May 2024		

Month	SO <sub>2</sub> Hourly	SO <sub>2</sub> daily	SO <sub>2</sub> 10min	PM <sub>10</sub> daily	PM <sub>2.5</sub> Daily	O <sub>3</sub> 8 Hourly	NO <sub>2</sub> Hourly
Jan	0	0	2	0	0	19	0
Feb	0	0	0	0	1	77	0
Mar	0	0	1	0	0	2	0
Apr	11	1	20	0	0	32	0
May	2	0	7	0	0	0	0
Jun	0	0	0	0	0	0	0
Jul	0	0	0	0	0	0	0
Aug	0	0	0	2	1	0	0
Sep	0	0	1	3	3	54	0
Oct	1	0	1	2	0	101	0
Nov	1	0	2	0	0	147	0
Dec	0	0	0	4	3	45	0
<b>Total</b>	15	1	34	11	8	477	0
<b>Allowed</b>	88	4	526	4	4	11	0

Number of exceedances for PM<sub>10</sub> daily, PM<sub>2.5</sub> daily and O<sub>3</sub> 8-hour moving average is above the allowed number of exceedances per year and therefore in non-compliance with the national ambient air quality standard. Though there were exceedances recorded from January to December 2021 for the other parameters monitored at Medupi monitoring site, their total number of exceedances are well below the allowed annual exceedances. There were no exceedances of the NO<sub>2</sub> hourly limit recorded from January to December 2021. Monitoring report for ambient air quality is submitted to the local authorities on a monthly basis.

**Note:** Annual exceedance allowable is measured in a calendar year and as such this report shall contain the results for January to December 2021.

Table 3: Ambient Air Quality Data


Parameter measured	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Annual
PM <sub>2.5</sub> (µg/m <sup>3</sup> )	7.1	11	11.4	13.8	16.5	10.6	14.4	21.1	22.1	15.3	15.3	26.3	15.4
PM <sub>10</sub> (µg/m <sup>3</sup> )	16.1	21.4	22.4	22.7	23.9	16.6	22	38.3	41	42.8	25.2	51.8	28.6
CO (ppm)	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.3
NO <sub>2</sub> (ppb)	4.6	2.2	2.7	2.6	3.5	2.3	2.5	3.2	2.8	3.7	3.9	4.5	3.2
O <sub>3</sub> (ppb)	28.9	34.9	24.5	23.3	21.5	23.2	32.1	39.1	43.1	43.7	48.2	34.5	33.1
SO <sub>2</sub> (ppb)	5.2	2.9	4.9	10.5	8.6	4.6	4.5	8.2	8.3	6.6	5.4	3.5	6.1

Annual concentrations for PM<sub>2.5</sub>, PM<sub>10</sub>, NO<sub>2</sub> and SO<sub>2</sub> monitored during the 2021 monitoring period were calculated below their respective annual ambient concentration limits.

## 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 authorised version on the system.

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.

	<b>Medupi Power Station Annual Emissions Report</b>	Template Identifier	240-43921804	Rev	6
		Document Identifier	240-122798356	Rev	2
		Effective Date	May 2021		
		Review Date	May 2024		

### Dust Fall-out Monitoring

Medupi Power Station dust monitoring network consists of 20 buckets which are collected and analysed within 30 +/- 3 days. The results for the reporting period April 2021 to March 2022 is depicted in figure 11 and it is evident that the dust management practice within the Power Station is a huge challenge. Exceedances of Non-residential National Dust-fallout Regulation Limit (1200 mg/m<sup>2</sup>/days) were measured throughout the financial year and the following points exceeded the limit and falls under very Nuisance category.

Monitoring Point	Number of Exceedances	Months and Dust fallout (mg/m <sup>2</sup> /days)
D04	4	1590 mg/m <sup>2</sup> /d in July 2021, 7374 mg/m <sup>2</sup> /d Aug 2021, 1635 mg/m <sup>2</sup> /d in Oct 2021 and 3202 mg/m <sup>2</sup> /d in Nov 2021)
D11	4	1459 mg/m <sup>2</sup> /d in Aug 2021, 1464 mg/m <sup>2</sup> /d for Oct 2021, 2866 mg/m <sup>2</sup> /d in Nov 2021 and 2478 mg/m <sup>2</sup> /d Feb 2022)
D15	12	785 mg/m <sup>2</sup> /d for March 2021, 1404 mg/m <sup>2</sup> /d for April 2021, 2575 mg/m <sup>2</sup> /d for May 2021, 1386 mg/m <sup>2</sup> /d for June 2021, 1977 mg/m <sup>2</sup> /d for July 2021, 5552 mg/m <sup>2</sup> /d for Aug 2021, 3299 mg/m <sup>2</sup> /d for Sept 2021, 4981 mg/m <sup>2</sup> /d for Oct 2021, 1483 mg/m <sup>2</sup> /d for Dec 2021, 1229 mg/m <sup>2</sup> /d in Jan 2022, 1940 mg/m <sup>2</sup> /d in Feb 2022 and 1760 for Mar 2022).
D16	7	1800 mg/m <sup>2</sup> /d for Aug 2021, 1753 mg/m <sup>2</sup> /d for Sept 2021, 1727 mg/m <sup>2</sup> /d for Oct 2021, 2398 mg/m <sup>2</sup> /d in Nov 2021, 2263 mg/m <sup>2</sup> /d for Dec 2021, 1949 mg/m <sup>2</sup> /d for Jan 2022 and 1202 mg/m <sup>2</sup> /d for Mar 2022)

Note: Medupi Power Station developed a dust management plan and the measures are being implemented and monitored regularly to determine their effectiveness.

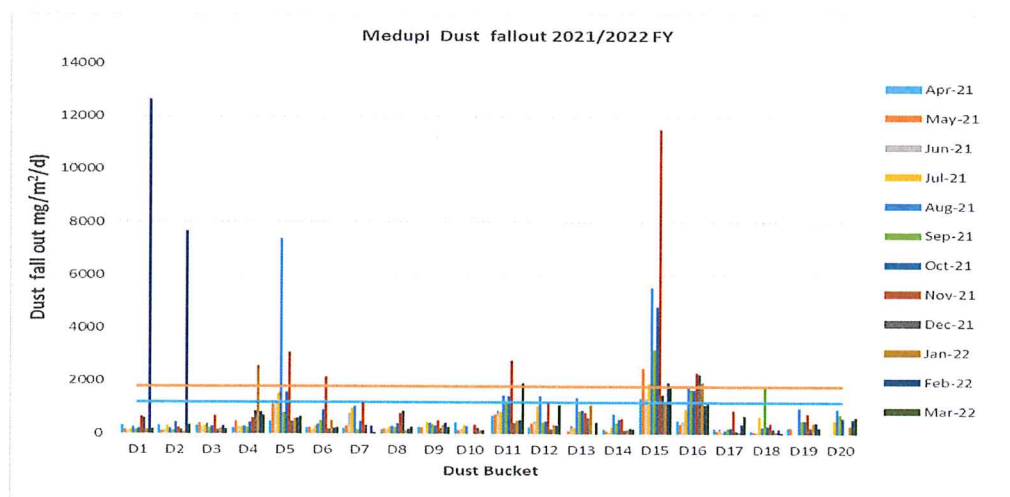



Figure 9: Dust fall-out monitoring April 2021-March 2022

**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 authorised version on the system.

	<b>Medupi Power Station Annual Emissions Report</b>	Template Identifier	240-43921804	Rev	6
		Document Identifier	240-122798356	Rev	2
		Effective Date	May 2021		
		Review Date	May 2024		

## 5. Compliance Audit Report


Medupi Power Station monitors compliance to the provisional AEL conditions on a daily basis and if a possible non-compliance is identified, relevant personnel within the Power Station are informed to address and/or prevent the non-compliance. The Authorities are notified of such non-compliances and action plan is then drafted, submitted and implemented as required by the Medupi AEL. The station complies with 60 out of 73 conditions reviewed resulting into a score of 82%.

The main findings from the last internal review are listed below;

- **AEL 1.** Details of the responsible officer/ person have changed, Wikus Janse Van Rensburg left Medupi in November 2021. However, no notification was sent to the authorities regarding the acting GM (Zweli Witbooi).
- **AEL 4.8.** The current AEL is a renewal dated December 2020, with no evidence that notifications were sent to I&APs on receipt of this AEL. There was also no evidence of notification sent to I&APs on receipt of the July 2019 renewal AEL. The only notification sent (dated March 2020) was just a notification to I&APs about the station's intent to renew the July 2019 AEL that was expiring in April 2020.
- **AEL 7.1.** A sample of reports was reviewed, and the station was found not to be reporting on FFP utilisation and efficiency and utilisation for Low NOx Burners.
- **AEL 7.1.5.** No FGD was installed at the station more than six years after its commissioning.
- **AEL 7.4.** Dust reports for the sampled months (Oct – Dec 2021) indicated exceedances from buckets D5, D11, D15 and D16 more than twice a year per monitoring point. No evidence of a management plan sent to authorities due to these exceedances as required by dust management Regulations. The station has developed a fugitive emissions management plan which is currently on Rev 4 (240-82071896) dated 19 November 2020 (AEL dated 12 Nov 2020). However, this document does not cover fuel oil tanks and their specific measures (i.e. monthly visual inspections, inventory and annual leak detection tests) but covers lots more area sources such as unpaved roads, conveyors, silos, construction activities etc. There was no evidence of an annual leak detection tests report, and inventory reconciliation provided.
- **AEL 7.4.2.** The fuel oil tanks management procedure was not provided, and therefore their handling and construction specifications could not be verified per the requirements of this condition. No LDAR, and the tanks did not form part of the FEMP.
- **AEL 7.4.3.** No evidence of periodic evaluation was conducted as required to identify the success of control measures implemented in line with the FEMP.
- **AEL 7.7.2.** The biannual report (April to Sept 2021) submitted 17 Nov 2021, which is more than 30 days after the reporting period (was supposed to be submitted by end of October 2021).
- **AEL 7.7.3.** The 2021 annual report was submitted on 22 June 2021 and included all requirements listed in this condition as a minimum. However, the report was submitted

## 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 authorised version on the system.

	<b>Medupi Power Station Annual Emissions Report</b>	Template Identifier	240-43921804	Rev	6
		Document Identifier	240-122798356	Rev	2
		Effective Date	May 2021		
		Review Date	May 2024		

outside the required 30 days after the reporting period requirement (submitted end of April 2021). This is non-compliance to this condition.

- **AEL 7.9.** No revised public awareness plan. The previous one was submitted to authorities on 03 February 2017 and acknowledged 28 February 2017. However, in the mail to authorities, it was indicated that the revision of this plan was scheduled for 20 February 2017, but there is no evidence of that revised plan. Ambient Air Quality Management Plan 240-82071896-2 was resubmitted on 21 July 2016 upon request by authorities. Eight months from the date of issue of renewed AEL, and next review date for the plan was October 2018. No proof of the next revised plan from October 2018.

An action plan has been developed to address all the findings above.

## 6. Major upgrades project

- There were no major upgrade on the plant for the reporting period

## 7. Deviation from license conditions and actions to resolve the problem

Medupi Power Station performed well within the ambit of the AEL most of the months in the reporting period. Sporadic exceedances were observed for particulate matter and SO<sub>2</sub> emissions in the months during the reporting period as indicated in figure 6 & 7 above. Action plans to address the issues were developed and are being implemented.

## 8. Spot/verification/correlation/parallel test results

The following tests were conducted during the reporting period:


**Table 4: Emissions pot/verification/correlation/parallel test results**

Unit	Type of test	Date
1	Particulate Matter Monitor Correlation Measurements	July 2021
	Gaseous parallel Measurements	January 2022
	Particulate Matter Monitor Spot Check Measurements	None
2	Particulate Matter Monitor Correlation Measurements	March 2022
	Particulate Matter Monitor Spot Check Measurements	March 2021
	Gaseous parallel Measurements	December 2021
3	Particulate Matter Monitor Correlation Measurements	February 2022
	Gaseous parallel Measurements	November 2021
	Particulate Matter Monitor Spot Check Measurements	None
4	Particulate Matter Monitor Correlation Measurements	None
	Gaseous parallel Measurements	None
	Particulate Matter Monitor Spot Check Measurements	None

## 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 authorised version on the system.

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.


	<b>Medupi Power Station Annual Emissions Report</b>	Template Identifier	240-43921804	Rev	6
		Document Identifier	240-122798356	Rev	2
		Effective Date	May 2021		
		Review Date	May 2024		

5	Particulate Matter Monitor Correlation Measurements	March 2022
	Gaseous parallel Measurements	June 2021
	Particulate Matter Monitor Spot Check Measurements	None
6	Particulate Matter Monitor Correlation Measurements	January 2021
	Gaseous parallel Measurements	December 2021
	Particulate Matter Monitor Spot Check Measurements	March 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 authorised version on the system.

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 Annual Emissions Report	Template Identifier	240-43921804	Rev	6
		Document Identifier	240-122798356	Rev	2
		Effective Date	May 2021		
		Review Date	May 2024		

**Table 5 : Medupi Power Station Philosophy outage and Opportunity outages 2021/2022**

Unit	Planned Start Time	Planned End Time	Outage Description	Actual Start Time	Actual End Time	Revised End Time	Actual Duration
5	2021/02/18 00:00:00	2021/04/28 23:59:00	Interim Repair	2021/02/18 00:26:00	2021/06/04 09:54:00	2021/04/29 00:25:00	106,39
3	2021/04/01 22:00:00	2021/04/05 21:59:00	Turbine valves repairs	2021/04/02 01:45:00	2021/04/05 17:29:00	2021/04/06 01:44:00	3,66
4	2021/04/15 22:00:00	2021/04/18 21:59:00	Mill 30 and 40 hot air damper internal repairs	2021/04/16 01:15:00	2021/04/19 08:29:00	2021/04/19 01:14:00	3,3
4	2021/04/30 22:00:00	2021/05/03 05:55:00	SSC repairs	2021/04/30 22:28:00	2021/05/03 01:44:00	2021/05/03 06:23:00	2,14
6	2021/06/24 00:00:00	2021/07/02 23:59:00	Boiler tube leak	2021/06/24 00:27:00	2021/07/02 16:35:00	2021/07/03 00:26:00	8,67
3	2021/07/25 22:00:00	2021/08/03 21:59:00	Spray water line to header steam leak repairs 80m lvl rear wall	2021/07/27 00:16:00	2021/08/02 18:31:00	2021/08/05 00:15:00	6,76
5	2021/08/05 22:00:00	2021/08/08 21:59:00	Mill 40 inspection and 200 hrs service	2021/08/05 22:27:00	2021/08/08 22:51:00	2021/08/08 22:26:00	3,02
4	2021/08/05 22:00:00	2021/08/15 21:59:00	Mill 40 hot air damper internal repairs	2021/08/06 13:30:00		2021/08/16 13:29:00	
3	2021/10/01 00:00:00	2021/11/11 23:59:00	Inspection	2021/10/02 01:33:00	2021/11/13 00:38:00	2021/11/13 01:32:00	41,96
2	2021/10/21 00:00:00	2021/10/22 11:59:00	BFP 12 DISCHARGE EQUALIZING V/V LEAK REPAIRS	2021/10/21 00:56:00	2021/10/22 11:44:00	2021/10/22 12:55:00	1,45
5	2021/11/03 22:00:00	2021/11/04 05:00:00	80% Correlation test	2021/11/03 22:21:00	2021/11/04 05:10:00	2021/11/04 05:21:00	0,28

## 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 authorised version on the system.


	<b>Medupi Power Station Annual Emissions Report</b>	Template Identifier	240-43921804	Rev 6
		Document Identifier	240-122798356	Rev 2
		Effective Date	May 2021	
		Review Date	May 2024	

3	2021/11/18 10:00:00	2021/11/19 09:59:00	GAH top seal settings @70%	2021/11/18 07:31:00	2021/11/20 15:46:00	2021/11/19 07:30:00	2,34
6	2021/11/18 22:00:00	2021/11/21 21:59:00	PJFF Ducting repairs	2021/11/19 22:16:00	2021/11/23 03:03:00	2021/11/22 22:15:00	3,2
3	2021/11/19 10:00:00	2021/11/20 09:59:00	GAH top seal settings @70%	2021/11/19 07:30:00	2021/11/20 15:46:00	2021/11/20 07:29:00	1,34
3	2021/11/20 10:00:00	2021/11/21 09:59:00	GAH top seal settings @70%	2021/11/20 07:30:00	2021/11/20 15:46:00	2021/11/21 07:29:00	0,34
1	2021/11/29 00:00:00	2022/01/23 23:59:00	Guarantee Inspection Outage	2021/11/30 02:33:00	2022/01/23 17:48:00	2022/01/25 02:32:00	54,64
2	2021/12/21 22:00:00	2021/12/26 21:59:00	Repair Leaking valves	2021/12/22 14:19:00	2021/12/25 22:19:00	2021/12/27 14:18:00	3,33
1	2022/01/24 08:00:00	2022/01/25 07:59:00	GAH top seal settings @70% day1	2022/01/24 05:09:00	2022/01/24 13:38:00	2022/01/25 05:08:00	0,35
1	2022/01/25 08:00:00	2022/01/26 07:59:00	GAH top seal settings @70% day1	2022/01/24 22:22:00	2022/01/26 08:59:00	2022/01/25 22:21:00	1,44
6	2022/02/03 00:00:00	2022/02/16 23:59:00	Inspection	2022/02/03 01:31:00	2022/02/19 20:33:00	2022/02/17 01:30:00	16,79
1	2022/03/18 00:00:00	2022/03/22 11:59:00	Turbine Vibration Tests	2022/03/17 23:54:00	2022/03/18 19:47:00	2022/03/22 11:53:00	0,83
1	2022/03/19 22:00:00	2022/03/21 09:59:00	Turbine balancing	2022/03/20 23:04:00	2022/03/21 19:34:00	2022/03/22 11:03:00	0,85
1	2022/03/25 22:00:00	2022/03/27 21:59:00	Turbine balancing	2022/03/26 21:33:00	2022/03/27 14:46:00	2022/03/28 21:32:00	0,72

## 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 authorised version on the system.

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.

	<b>Medupi Power Station Annual Emissions Report</b>	Template Identifier	240-43921804	Rev	6
		Document Identifier	240-122798356	Rev	2
		Effective Date	May 2021		
		Review Date	May 2024		

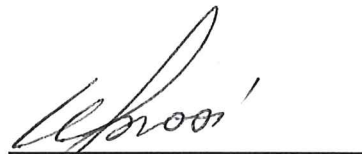
## 9. Conclusion

In general, Medupi Power Station is in compliance with most of the requirement of the AEL issued in terms of Section 40(1) (a) of the National Environmental Management: Air Quality Act, 2004, listed activity No. 1.1, 2.4 and 5.1.

Medupi Power Station has identified areas that need improvement in order for the station to avoid legal contraventions and action plans have been developed to mitigate and prevent environmental impacts that may result from emissions and related activities.

There were no recommendations received from the authorities regarding any non-compliance or potential non-compliance.

Yours sincerely



Zweli Witbooi

MEDUPI POWER STATION: GENERAL MANAGER (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 authorised version on the system.