

Ms Mpho Nembilwi
Nkangala District Municipality
PO Box 437
Middleburg
1050

Date:
Jan 2023

Enquiries: Lesiba Kgobe
Tel: +27 13 699 7817

Ref: *Kusile Power Station AEL (17/4/AEL/MP311/12/01)*

Dear Ms. Nembilwi

KUSILE POWER STATION'S MONTHLY EMISSIONS REPORT FOR DECEMBER 2022

This serves as the monthly report required in terms of Section 7.6 in Kusile Power Station's Atmospheric Emission License: 17/4/AEL/MP311/12/01. The emissions are for the month of December 2022. Please take note that Unit 1, 2 and 3 are off due to the flue gas duct collapse incident that occurred in Oct 2022.

Hoping the above will meet your satisfaction.

Yours sincerely



Bongumusa A. Mashazi
GENERAL MANAGER
DATE: 2023/01/30

KUSILE POWER STATION'S MONTHLY EMISSIONS REPORT FOR DEC 2022 - 17/4/AEL/MP311/12/01

Compiled by	Name: Cylia Surname: Malebana Senior Environmental Advisor	Signature: 	Date: 27/01/2023
Checked by	Name: Nontobeko Surname: Moyo PJFFP System Engineer	Signature: 	Date: 30/01/2023
Supported by	Name: Hanneke Surname: Heymans Process Engineer	Signature: 	Date: 30/01/2023
Verified by	Name: Tinyiko Surname: Makondo Boiler Engineering Manager	Signature: 	Date: 30/01/2023
Validated by	Name: Lesiba Surname: Kgobe Environmental Management Manager	Signature: 	Date: 27/01/2023

1. KUSILE POWER STATION MONTHLY EMISSIONS REPORT: Atmospheric Emission License 17/4/AEL/MP311/12/01



2 Raw Materials and Products

Raw Materials and Products	Raw Material Type	Units	Maximum Permitted Consumption Rate	Consumption Rate Dec-2022
	Coal	Tons	1 818 083	312 347
	Fuel Oil	Tons	5 533	45.569
	Limestone	Tons	72 917	7494

Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Dec-2022
	Energy	GWh	3321.216	505.38
	Ash	Tons	663 583	93 235.6
	Gypsum	Tons	129 250	4 196.6
	RE PM	kg/MWh	<i>not specified</i>	0.020
	RE SOx	kg/MWh	<i>not specified</i>	0.538

3 Energy source characteristics

Fuel Characteristic	Units	Stipulated Range	Monthly Average Content
Coal CV	MJ/kg	<i>not specified</i>	20.860
Coal Sulphur	%	1.3	0.700
Ash in Coal	%	38	29.850

4 Emissions Limits (mg/Nm³)

Associated Unit/Stack	PM	SO ₂	NO _x
North	50	500	750
South	50	500	750

5 Abatement Technology (%)

Associated Unit/Stack	Technology Type	Efficiency Dec-2022	Technology Type	Efficiency Nov-2022
Unit 1	Unit on outage			
Unit 2	Unit on outage			
Unit 3	Unit on outage			
Unit 4	FFP	99.988%	FGD	99.931%

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

6. Monitoring reliability (%)

Associated Unit/Stack	PM	SO ₂	NO	O ₂
Unit 1	Unit on outage			
Unit 2	Unit on outage			
Unit 3	Unit on outage			
Unit 4	100.0	100.0	100.0	100.0

7. Emissions Performance

Table 7.1: Monthly tonnages for the month of Dec - 2022

Associated Unit/Stack	PM	SO ₂	NO _x
Unit 1	Unit on outage		
Unit 2	Unit on outage		
Unit 3	Unit on outage		
Unit 4	10.1	272	589
SUM	10.1	272	589

Table 72: Operating days in compliance to PM AEL Limit - December 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
Unit 1	Unit on outage					
Unit 2	Unit on outage					
Unit 3	Unit on outage					
Unit 4	31					5.8
SUM	31					

Table 7.3: Operating days in compliance to SO₂ AEL Limit - December 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SO ₂ (mg/Nm ³)
Unit 1	Unit on outage					
Unit 2	Unit on outage					
Unit 3	Unit on outage					
Unit 4	31					151.6
SUM	31					

Table 7.4: Operating days in compliance to NO_x AEL Limit - December 2022

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NO _x (mg/Nm ³)
Unit 1	Unit on outage					
Unit 2	Unit on outage					
Unit 3	Unit on outage					
Unit 4	31					328.1
SUM	31					

Table 7.5: Legend Description

Condition	Colour	Description
Normal		Emissions below Emission Limit Value (ELV)
Grace		Emissions above the ELV during grace period
Section 30		Emissions above ELV during a NEMA S30 incident
Contravention		Emissions above ELV but outside grace or S30 incident conditions

Figure 4: Kusile Unit 4 PM Emissions - December 2022

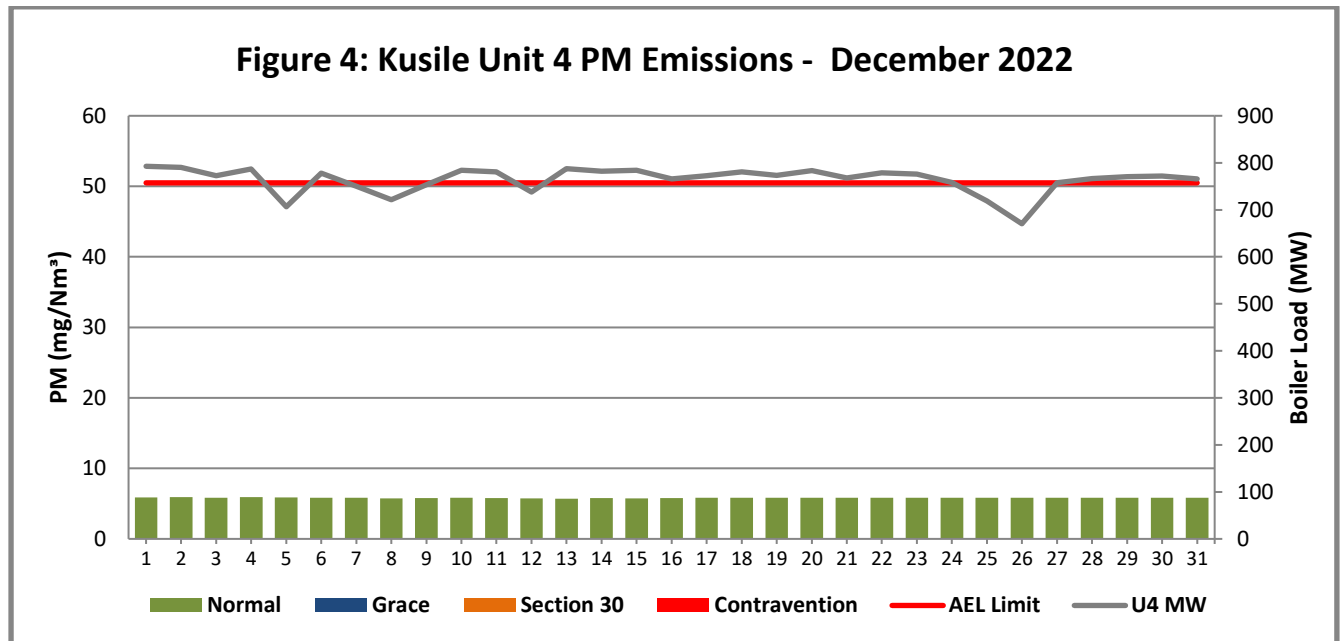
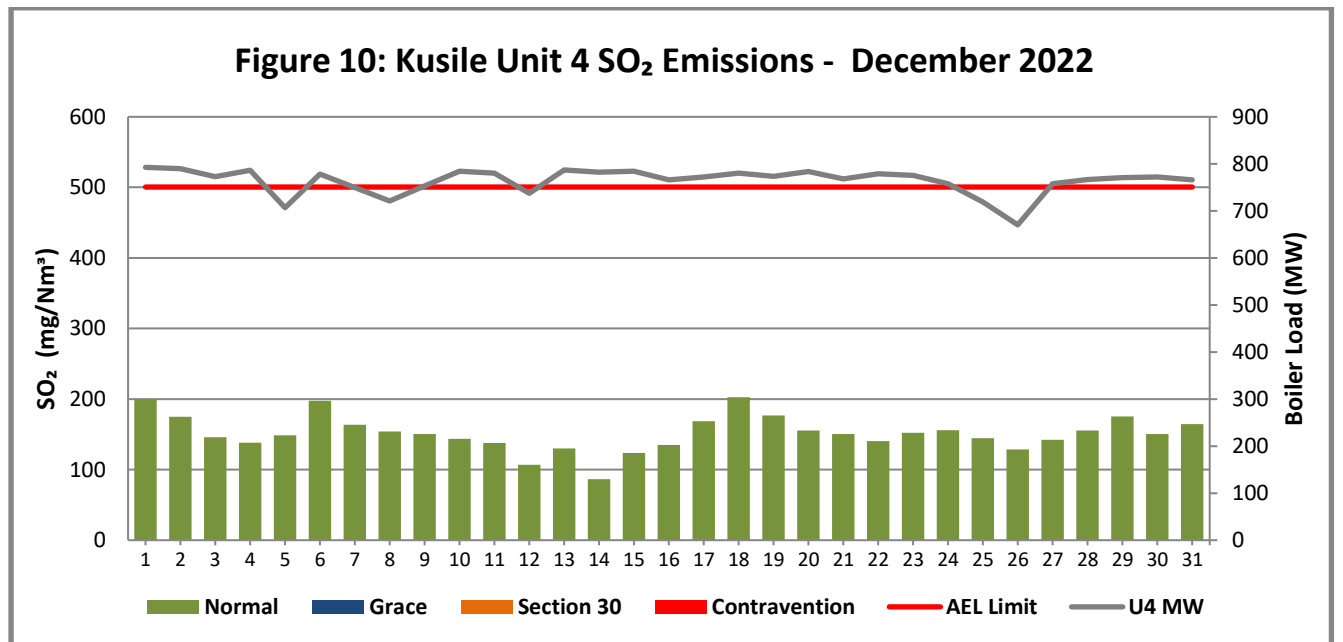
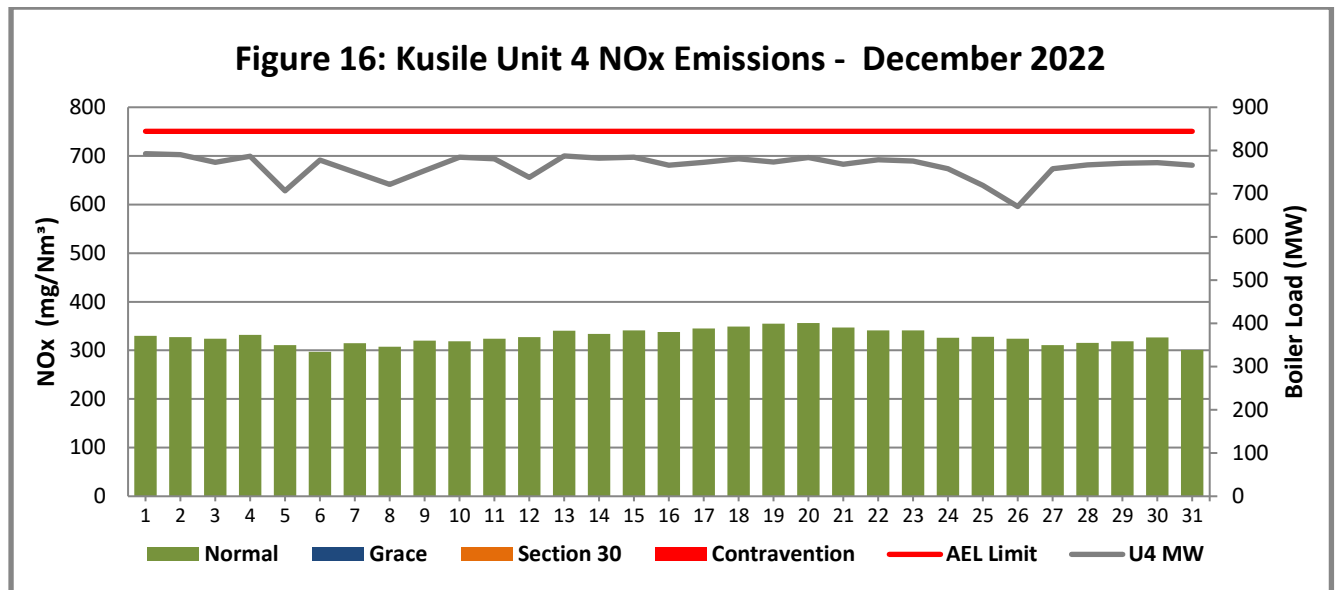


Figure 10: Kusile Unit 4 SO₂ Emissions - December 2022





8. Shut down and Light up information

Unit No. 4	Event 1	
Breaker Open (BO)	4:10 pm	2022/12/05
Draught Group (DG) Shut Down (SD)	DG did not trip or SD	DG did not trip or SD
BO to DG SD (duration)	n/a	DD:HH:MM
Fires in time	5:12 pm	2022/12/05
Synch. to Grid (or BC)	5:20 pm	2022/12/05
Fires in to BC (duration)	00:00:07	DD:HH:MM
Emissions below limit from BC (end date)	not > limit	not > limit
Emissions below limit from BC (duration)	n/a	DD:HH:MM

9. Complaints

Date and time complaint was received	Complaint received	Source code name	Root cause analysis	Calculation of impact/emissions associated with incidents and dispersion modelling of pollutants where applicable.	Measures implemented or to be implemented to prevent recurrence	Date by which measures will be implemented
01 Dec 2022 at 07:39	Ash dust from Kusile Power Station that affect the 2 families at Klipfontein farm, plot 13 kusile road.					The complaint is still under investigation. The station has requested more information/clarity from the complainant.