

HENDRINA POWER STATION MONTHLY EMISSIONS REPORT

Atmospheric Emission License 17/4/AEL/MP313/11/16



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1 RAW MATERIALS AND PRODUCTS

Raw Materials and Products	Raw Material Type	Units	Max. Permitted Consumption Rate	Consumption Rate Dec-2022
	Coal	Tons	820 000	84 730.0
	Fuel Oil	Tons	3 200	774.04

Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Dec-2022
	Energy	GWh	1488	121.14
	Ash	Tons	290 000	21 606
	RE PM	kg/MWh	not specified	0.194

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 to < 1	0.54
Ash Content	%	31 to < 35	25.50

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SO ₂	NO _x
North	75	3200	1200
South	75	3200	1200

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency Dec-2022
Unit 1	Fabric Filter Plant (FFP)	Unit Off-line
Unit 2	Fabric Filter Plant (FFP)	99.992%
Unit 3	Fabric Filter Plant (FFP)	Unit Off-line
Unit 4	Fabric Filter Plant (FFP)	Unit Off-line
Unit 5	Fabric Filter Plant (FFP)	Unit Off-line
Unit 6	Fabric Filter Plant (FFP)	Unit Off-line

Unit 7	Fabric Filter Plant (FFP)	100.000%
Unit 8	Fabric Filter Plant (FFP)	Unit Off-line
Unit 9	Fabric Filter Plant (FFP)	Unit Off-line
Unit 10	Fabric Filter Plant (FFP)	100.000%

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

5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO ₂	NO	O ₂
North	100.0	100.0	73.8	33.3
South	96.0	100.0	100.0	87.2

Note: NO_x emissions is measured as NO in PPM. Final NO_x value is expressed as total NO₂

6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of December-2022

Associated Unit/Stack	PM (tons)	SO _x (tons)	NO _x (tons)
North	0.1	56.8	24.9
South	23.5	674.0	365.7
SUM	23.5	730.8	390.6

As per Figure 1 and Figure 2

Table 6.2: Operating days in compliance to PM AEL Limit - December 2022

Associated Unit/Stack	Total Calendar days	Days under normal operation	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
North	31	2	0	0	0	0	8.9
South	31	28	2	1	0	3	32.3
SUM	62	30	2	1	0	3	

As per Figure 3: SO₂ Emissions

Table 6.3: Operating days in compliance to SO₂ AEL Limit - December 2022

Associated Unit/Stack	Total Calendar days	Days under normal operation	Grace	Section 30	Contravention	Total Exceedance	Average SO ₂ (mg/Nm ³)
North	31	2	0	0	0	0	1 651.6
South	31	31	0	0	0	0	1 056.6
SUM	62	33	0	0	0	0	

As per Figure 4: NO₂ Emissions

Table 6.4: Operating days in compliance to NO_x AEL Limit - December 2022

Associated Unit/Stack	Total Calendar days	Days under normal operation	Grace	Section 30	Contravention	Total Exceedance	Average NO _x (mg/Nm ³)
North	31	2	0	0	0	0	626.2
South	31	31	0	0	0	0	573.3
SUM	62	33	0	0	0	0	

Table 6.5: Legend Description

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

Figure 1: Hendrina North Stack PM Emissions - December 2022

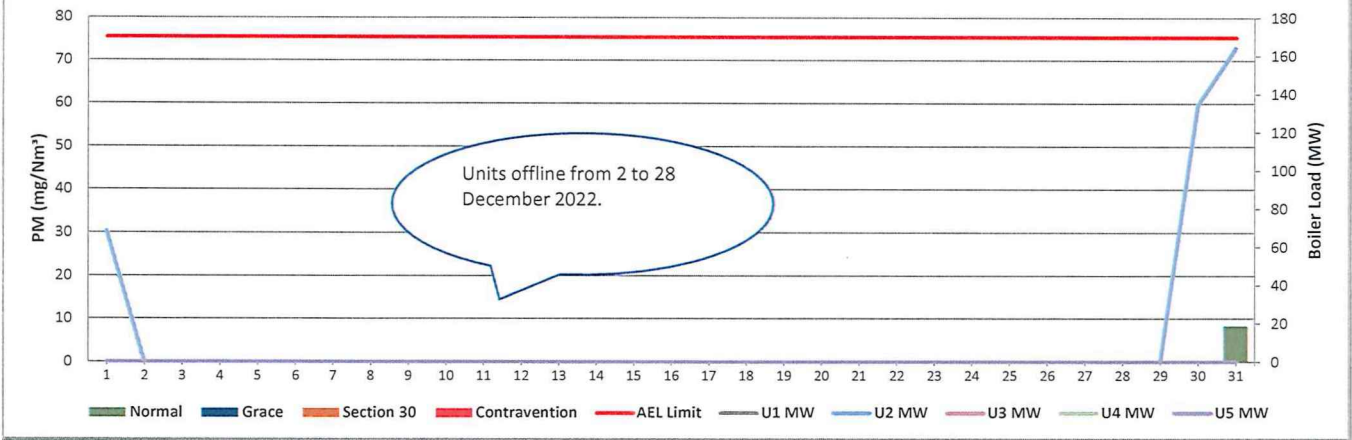


Figure 2: Hendrina South Stack PM Emissions - December 2022

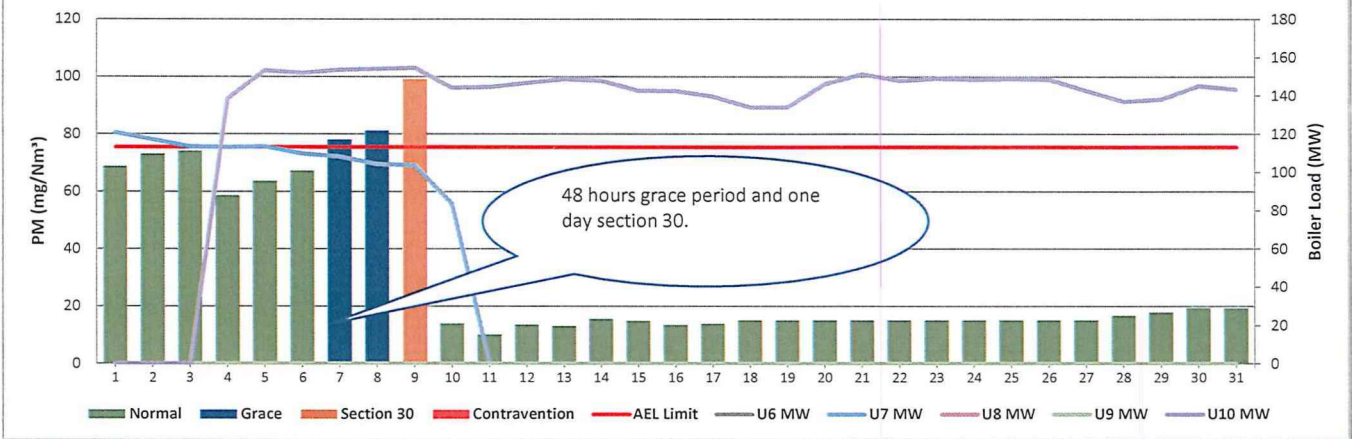


Figure 3: Hendrina North Stack SO₂ Emissions - December 2022

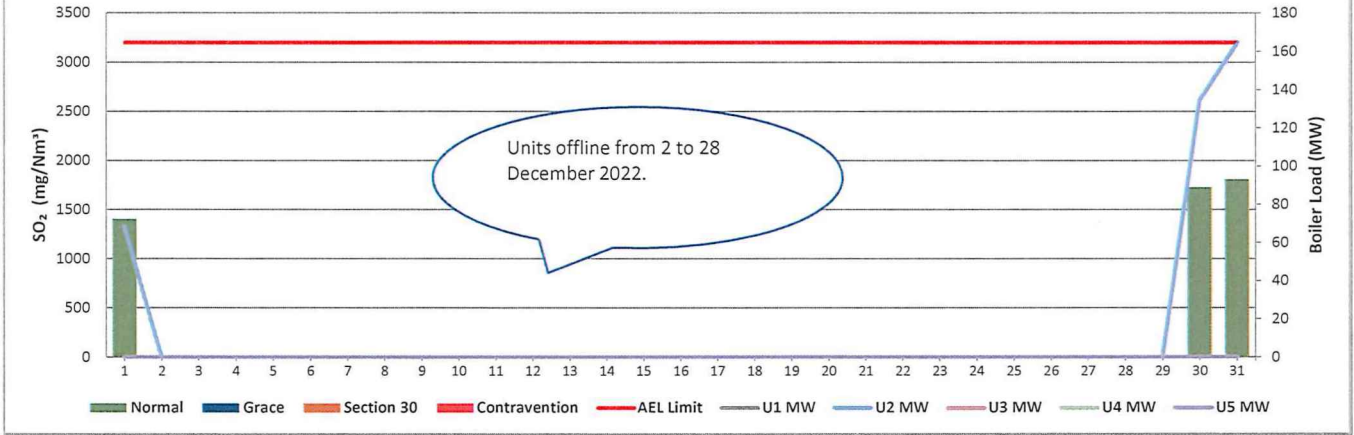


Figure 4: Hendrina South Stack SO₂ Emissions - December 2022

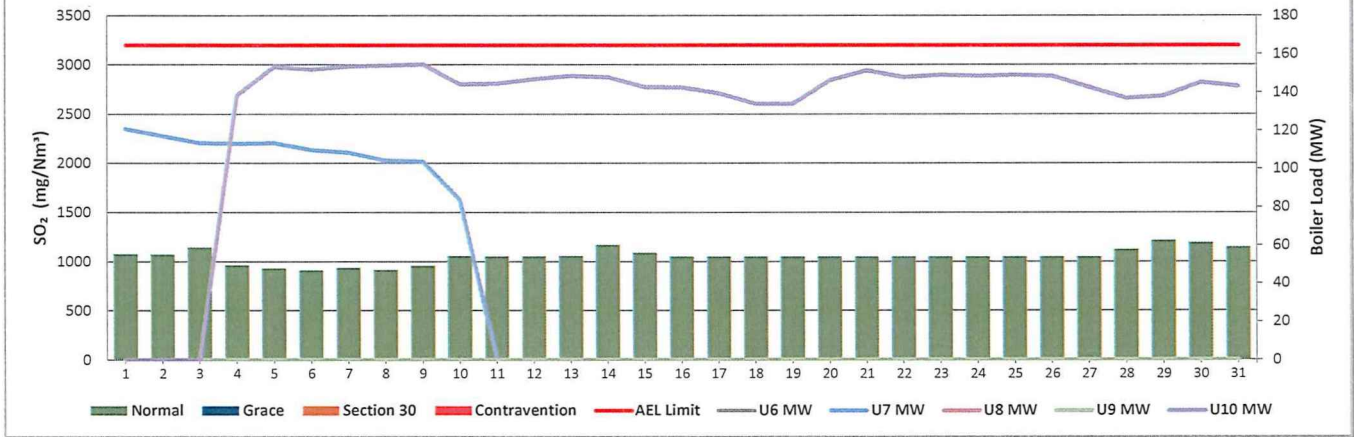


Figure 5: Hendrina North Stack NOx Emissions - December 2022

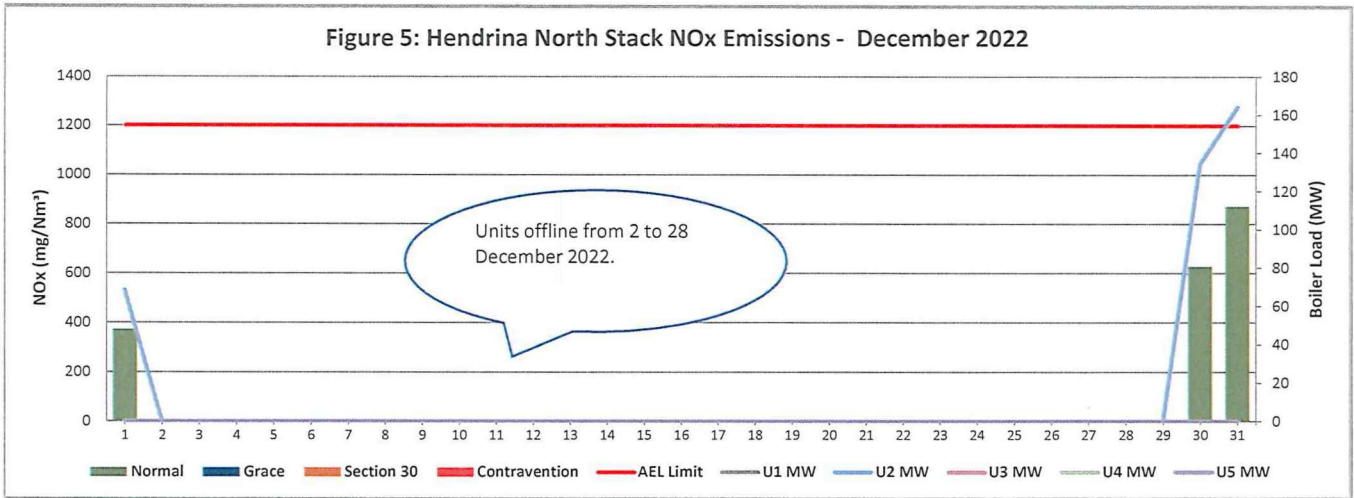
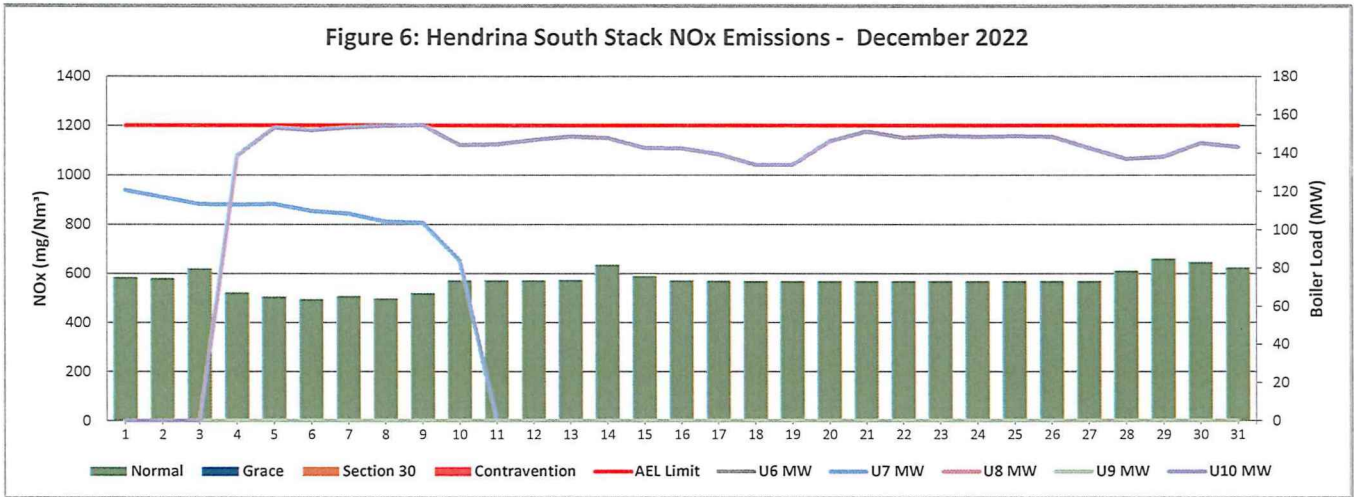


Figure 6: Hendrina South Stack NOx Emissions - December 2022



7 SHUT DOWN AND LIGHT UP INFORMATION

Table 7 1 PM Start-up information for the month of December-2022

North Stack	Event 1		Event 2	
Unit No	Unit 2		Unit 2	
Breaker Open (BO)	12 00 am	2022/12/01	11 50 pm	2022/12/30
Draught Group (DG) Shut Down (SD)	8 55 am	2022/12/02	11 50 pm	2022/12/30
BO to DG SD (duration)	01 08 54	DD HH MM		DD HH MM
Fires in time	11 25 am	2022/12/29		
Synch to Grid (or BC)	3 25 pm	2022/12/29		
Fires in to BC (duration)	00 04 00	DD HH MM		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		DD HH MM

South Stack	Event 1		Event 2		Event 3	
Unit No	Unit 7		Unit 10		Unit 10	
Breaker Open (BO)	11 45 am	2022/12/10	BO previously	BO previously	11 50 pm	2022/12/30
Draught Group (DG) Shut Down (SD)	6 35 am	2022/12/11	n/a	n/a	11 50 pm	2022/12/30
BO to DG SD (duration)	00 18 50	DD HH MM	n/a	DD HH MM		DD HH MM
Fires in time			2022/12/03	2022/12/03		
Synch to Grid (or BC)			3 40 am	2022/12/04		
Fires in to BC (duration)		DD HH MM	00 12 00	DD HH MM		DD HH MM
Emissions below limit from BC (end date)			not > limit	not > limit		
Emissions below limit from BC (duration)		DD HH MM	n/a	DD HH MM		DD HH MM

7.2 Point Source emissions released during start-up (fires-in) and Shut-down (SD) for the month of December-2022 in mg/Nm³

Comment There was no high emissions during start-up or shut down process for the month of December 2022

8 EMERGENCY GENERATION

There was no emergency generation for any boiler unit

9 COMPLAINTS REGISTER


Source Code / Name	Root Cause Analysis	Calculation of Impacts / emissions associated with the incident	Dispersion modeling of pollutants where applicable	Date measure will be implemented	Measures implemented to prevent reoccurrence
There were no complaints received					

10 S30 INCIDENT OR LEGAL CONTRAVENTION REGISTER

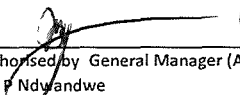
Unit no	Incident Start Date	Incident End Date	Incident Cause	Remedial action	Date S30 initial notification sent	Date S30 investigation report sent	Date DEA Acknowledgment	Date DEA Acceptable	Comments / Reference No
Unit 7	07/12/2022	09/12/2022	Plant issues	Unit trip	12/12/2022	under investigation	N/A	N/A	Incident under investigation

11 General

Grace period of 48 hours was exceeded South Stack Gaseous monitors were unavailable


 20/02/2023

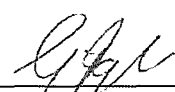
 Compiled: Environmental Officer Date
 B Madiupe

 2023-03-01

 Authorised by General Manager (Acting) Date
 Mr P Ndwandwe

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 For Nkangala District Municipality
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 20/02/2023

 Checked by System Engineer Date
 Boiler/ FFP
 Marco Cossa


 Validated by Manager Boiler or Environmental Date
 G Kgwathe L Ntla

FFP SE/ Environmental Officer
 Air Quality Officer
 D Herbst
 B Mccourt
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 Engineering Manager
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