

**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 Jul-2021
	Coal	Tons	820 000	255 410.0
	Fuel Oil	Tons	3 200	733.54

Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Jul-2021
	Energy	GWh	1488	438.72
	Ash	Tons	290 000	64 210
	RE PM	kg/MWh	not specified	0.268

**2 ENERGY SOURCE CHARACTERISTICS**

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 to < 1	0.97
Ash Content	%	31 to < 35	25.14

**3 EMISSION LIMITS (mg/Nm<sup>3</sup>)**

Associated Unit/Stack	PM	SO <sub>x</sub>	NO <sub>x</sub>
North	75	3200	1200
South	75	3200	1200

**4 ABATEMENT TECHNOLOGY (%)**

Associated Unit/Stack	Technology Type	Efficiency Jul-2021
Unit 1	Fabric Filter Plant (FFP)	Unit Off-line
Unit 2	Fabric Filter Plant (FFP)	Unit Off-line
Unit 3	Fabric Filter Plant (FFP)	Unit Off-line
Unit 4	Fabric Filter Plant (FFP)	99.984%
Unit 5	Fabric Filter Plant (FFP)	99.979%
Unit 6	Fabric Filter Plant (FFP)	99.985%
Unit 7	Fabric Filter Plant (FFP)	99.982%
Unit 8	Fabric Filter Plant (FFP)	Unit Off-line
Unit 9	Fabric Filter Plant (FFP)	Unit Off-line

Unit 10	<i>Fabric Filter Plant (FFP)</i>	<i>100.000%</i>
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Note: Abatement plant does not have bypass mode operation, hence plant 100% Utilised.

#### 5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO <sub>2</sub>	NO	O <sub>2</sub>	CO <sub>2</sub>
North	<i>99.3</i>	<i>43.3</i>	<i>98.8</i>	<i>66.8</i>	<i>90.3</i>
South	<i>100.0</i>	<i>99.9</i>	<i>100.0</i>	<i>100.0</i>	<i>57.7</i>

#### 6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of July-2021

Associated Unit/Stack	PM (tons)	SO <sub>x</sub> (tons)	NO <sub>x</sub> (tons)	CO <sub>2</sub> (tons)
North	4.4	870.2	573.3	151 435.0
South	113.4	3 672.2	2 264.4	317 803.1
<b>SUM</b>	<b>117.8</b>	<b>4 542.4</b>	<b>2 837.7</b>	<b>469 238.1</b>

Table 6.2: Operating days in compliance to PM AEL Limit - July 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm <sup>3</sup> )
North	27	0	0	0	0	5.4
South	31	0	0	0	0	44.5
<b>SUM</b>	<b>58</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

Table 6.3: Operating days in compliance to SOx AEL Limit - July 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SOx (mg/Nm <sup>3</sup> )
North	28	0	0	0	0	1 097.0
South	31	0	0	0	0	1 414.0
<b>SUM</b>	<b>59</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

Table 6.4: Operating days in compliance to NOx AEL Limit - July 2021

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm <sup>3</sup> )
North	28	0	0	0	0	685.4
South	31	0	0	0	0	871.3
<b>SUM</b>	<b>59</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

Table 6.5: 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 1: Hendrina North Stack PM Emissions - July 2021

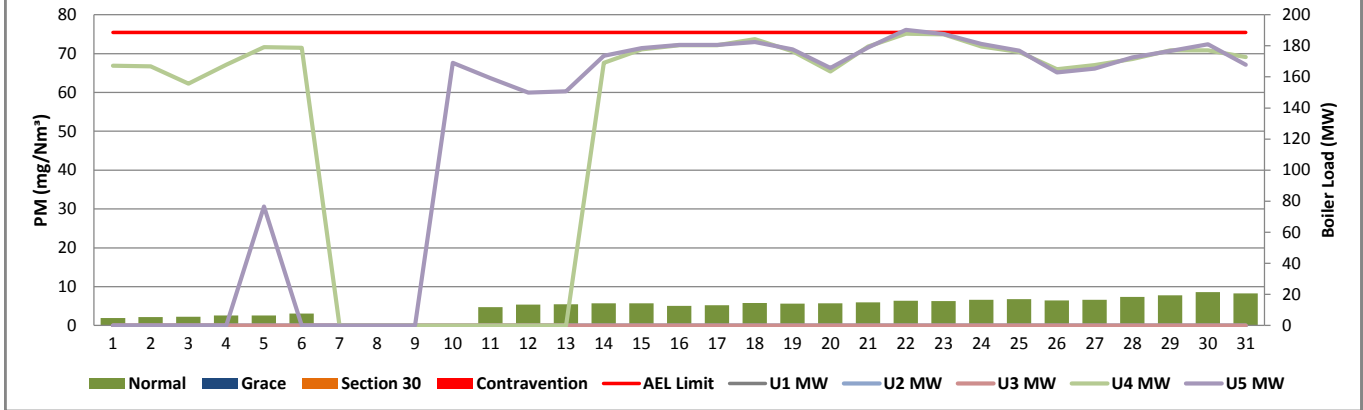


Figure 2: Hendrina South Stack PM Emissions - July 2021

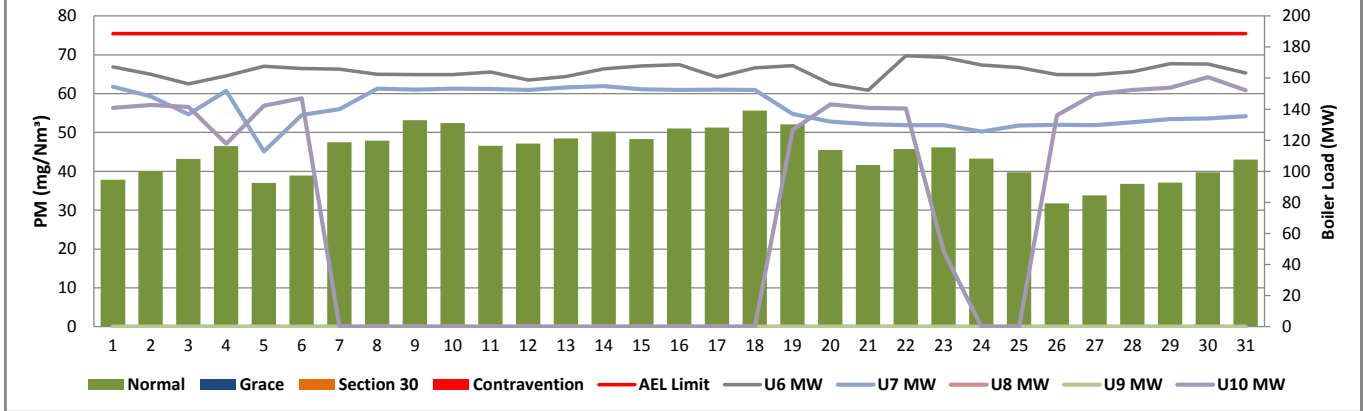


Figure 3: Hendrina North Stack SOx Emissions - July 2021

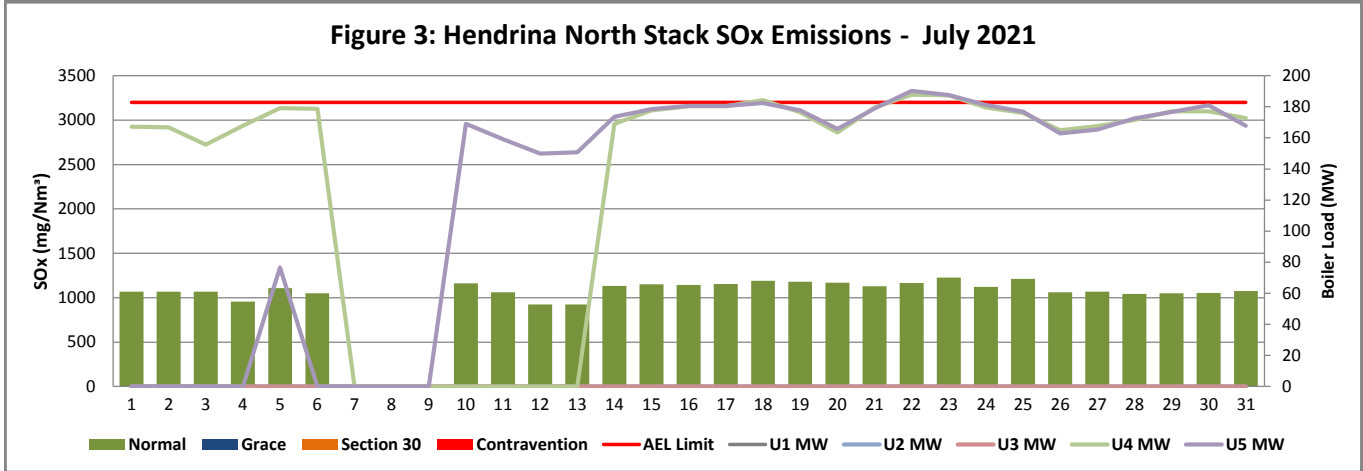


Figure 4: Hendrina South Stack SOx Emissions - July 2021

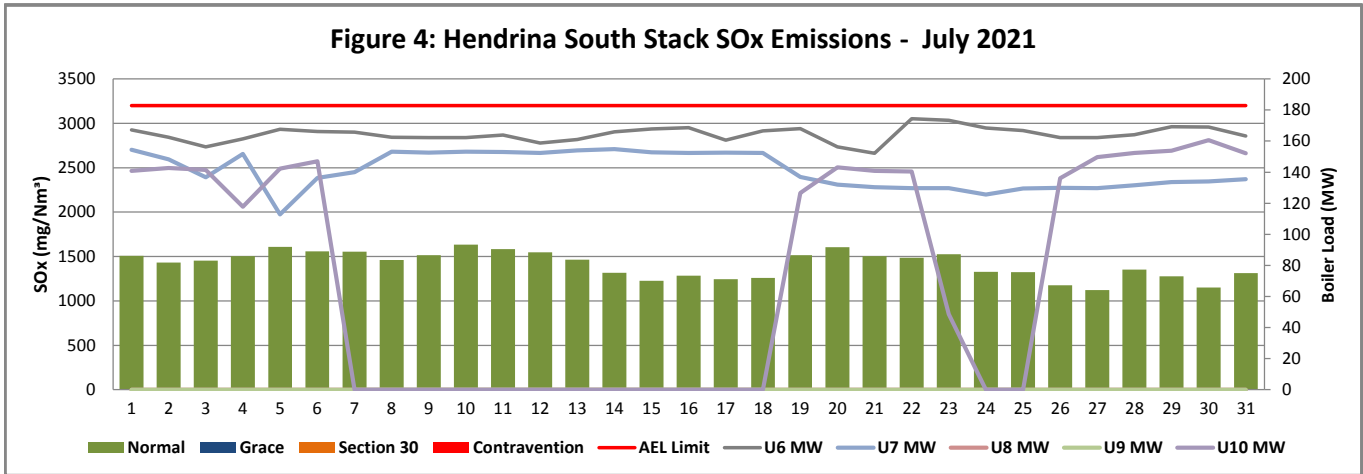


Figure 5: Hendrina North Stack NOx Emissions - July 2021

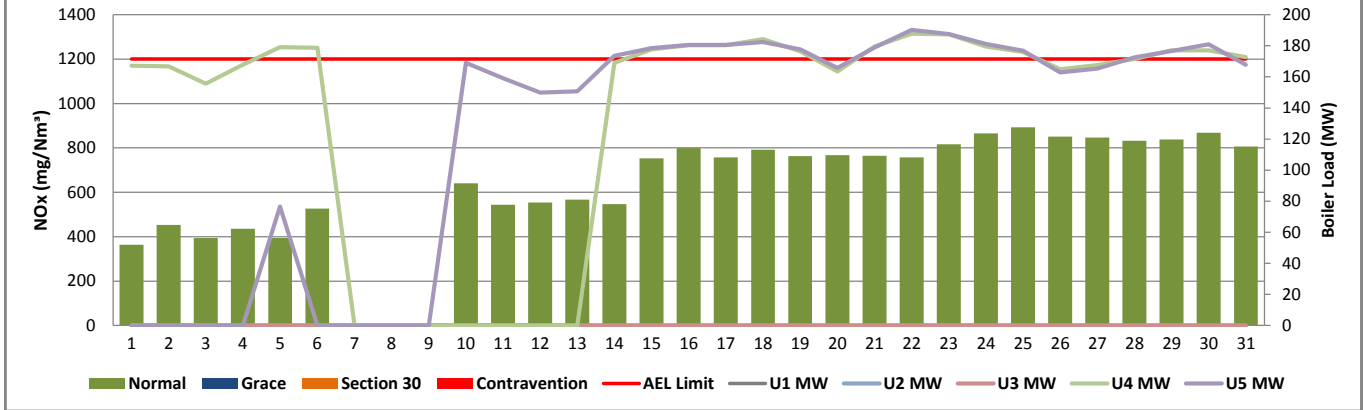
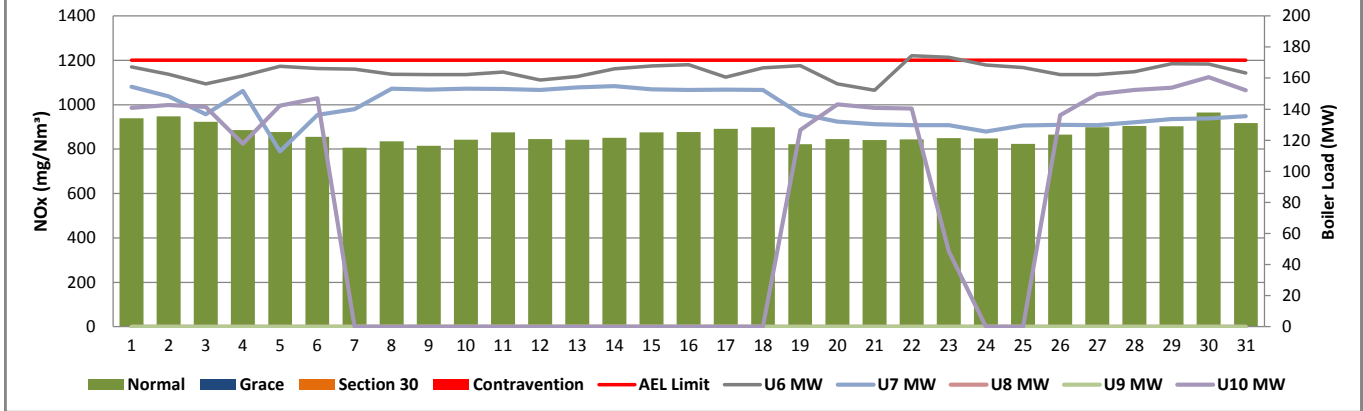


Figure 6: Hendrina South Stack NOx Emissions - July 2021



## 7 SHUT DOWN AND LIGHT UP INFORMATION

Table 7.1 PM Start-up information for the month of July-2021

North Stack	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>		<i>Event 4</i>	
Unit No.	<i>no event</i>		<i>Unit 4</i>		<i>no event</i>		<i>Unit</i>	
Breaker Open (BO)			<i>11:15 PM</i>	<i>2021/07/06</i>			<i>BO previously</i>	<i>BO previously</i>
Draught Group (DG) Shut Down (SD)			<i>09:35 AM</i>	<i>2021/07/07</i>			<i>n/a</i>	<i>n/a</i>
BO to DG SD (duration)		DD:HH:MM	<i>00:10:20</i>	DD:HH:MM		DD:HH:MM	<i>n/a</i>	DD:HH:MM
Fires in time			<i>2021/07/14</i>	<i>2021/07/14</i>			<i>2021/07/09</i>	<i>2021/07/09</i>
Synch. to Grid (or BC)			<i>12:40 PM</i>	<i>2021/07/14</i>			<i>05:30 AM</i>	<i>2021/07/10</i>
Fires in to BC (duration)		DD:HH:MM	<i>00:12:00</i>	DD:HH:MM		DD:HH:MM	<i>00:12:00</i>	DD:HH:MM
Emissions below limit from BC (end date)			<i>not &gt; limit</i>	<i>not &gt; limit</i>			<i>not &gt; limit</i>	<i>not &gt; limit</i>
Emissions below limit from BC (duration)		DD:HH:MM	<i>n/a</i>	DD:HH:MM		DD:HH:MM	<i>n/a</i>	DD:HH:MM

North Stack ...Continued	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>		<i>Event 4</i>	
Unit No.	<i>no event</i>		<i>no event</i>		<i>no event</i>		<i>no event</i>	
Breaker Open (BO)								
Draught Group (DG) Shut Down (SD)								
BO to DG SD (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time								
Synch. to Grid (or BC)								
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)								
Emissions below limit from BC (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM

South Stack	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>		<i>Event 4</i>	
Unit No.	<i>no event</i>		<i>no event</i>		<i>no event</i>		<i>no event</i>	
Breaker Open (BO)		#REF!						
Draught Group (DG) Shut Down (SD)		#REF!						
BO to DG SD (duration)	<i>n/a</i>	DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time								
Synch. to Grid (or BC)								
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)								
Emissions below limit from BC (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM

South Stack ...Continued	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>		<i>Event 4</i>	
Unit No.	<i>no event</i>		<i>no event</i>		<i>no event</i>		<i>no event</i>	
Breaker Open (BO)								
Draught Group (DG) Shut Down (SD)								
BO to DG SD (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time								
Synch. to Grid (or BC)								
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)								
Emissions below limit from BC (duration)		DD:HH:MM		DD:HH:MM		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 July-2021 in mg/Nm<sup>3</sup>


[Include reference to once off test showing typical emissions rates during fires in and SD]



Remember to add attachments here; see ReportAddendum Tab

Reserved for Addendum XXXX

11 General



20/08/2021

Compiled: Environmental Officer Date

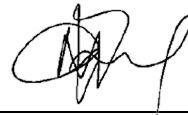
B. Madiope



27/08/2021

Authorised by: GM Date

L. Ndube



26/08/2021

Boiler/ FFP Date

Marco Cossa



J. Ramagoma

26 August 2021

Validated by Manager: Boiler or Environmenta Date

R. Nelwamondo J. Ramagoma

Compiled by: Boiler Engineering Department

For: Nkangala District Municipality

Copies: Eskom Environmental Management

Group Technology Engineering

Hendrina Power Station:

FFP SE/ Environmental Officer

Air Quality Officer

D Herbst  
B Mccourt

R Rampiar  
E. Patel

Engineering Manager  
Operating Manager  
Maintenance Manager  
Unit Production Manager  
Boiler Engineering Manager  
System Engineer: Boiler Engineering  
Environmental Officer  
C & I Engineering Manager  
Production Manager  
Environmental Manager  
PSM