

**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 Sep-2020
	Coal	Tons	820 000	273 010.0
	Fuel Oil	Tons	3 200	421.75

Production Rates	Product / By-Product Name	Units	Max. Production Capacity Permitted	Production Rate Sep-2020
	Energy	GWh	1440	474.25
	Ash	Tons	290 000	69 099
	RE PM	kg/MWh	not specified	0.035

**2 ENERGY SOURCE CHARACTERISTICS**

Coal Characteristics	Units	Stipulated Range	Monthly Average Content
Sulphur Content	%	0.6 to < 1	1.02
Ash Content	%	31 to < 35	25.31

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

Associated Unit/Stack	PM	SOx	NOx
North	75	3200	1200
South	75	3200	1200

**4 ABATEMENT TECHNOLOGY (%)**

Associated Unit/Stack	Technology Type	Efficiency Sep-2020
Unit 1	Fabric Filter Plant (FFP)	Unit Off-line
Unit 2	Fabric Filter Plant (FFP)	99.958%
Unit 3	Fabric Filter Plant (FFP)	Unit Off-line
Unit 4	Fabric Filter Plant (FFP)	99.956%
Unit 5	Fabric Filter Plant (FFP)	99.973%
Unit 6	Fabric Filter Plant (FFP)	99.964%
Unit 7	Fabric Filter Plant (FFP)	Unit Off-line
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%
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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>
North	100.0	100.0	100.0	100.0
South	98.9	95.1	98.6	95.4

#### 6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of September-2020

Associated Unit/Stack	PM (tons)	SO <sub>2</sub> (tons)	NO <sub>2</sub> (tons)
North	12.6	1 731.7	711.8
South	4.0	1 904.9	1 123.3
SUM	16.6	3 636.6	1 835.1

Table 6.2: Operating days in compliance to PM AEL Limit - September 2020

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm <sup>3</sup> )
North	31	0	0	0	0	11.9
South	30	0	0	0	0	2.8
SUM	61	0	0	0	0	

Table 6.3: Operating days in compliance to SOx AEL Limit - September 2020

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SOx (mg/Nm <sup>3</sup> )
North	31	0	0	0	0	1 551.3
South	31	0	0	0	0	1 298.9
SUM	62	0	0	0	0	

Table 6.4: Operating days in compliance to NOx AEL Limit - September 2020

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm <sup>3</sup> )
North	31	0	0	0	0	637.4
South	31	0	0	0	0	762.4
SUM	62	0	0	0	0	

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 - September 2020

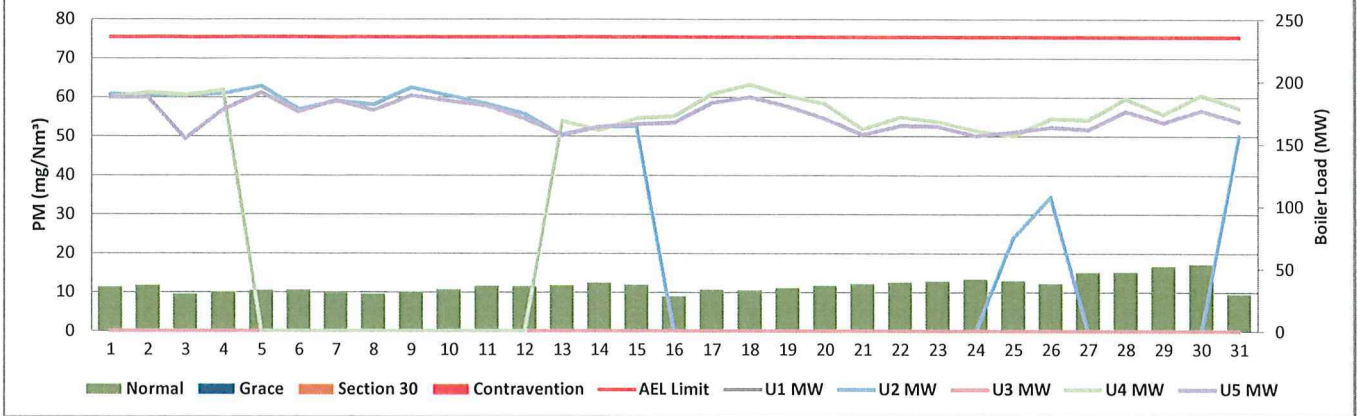


Figure 2: Hendrina South Stack PM Emissions - September 2020

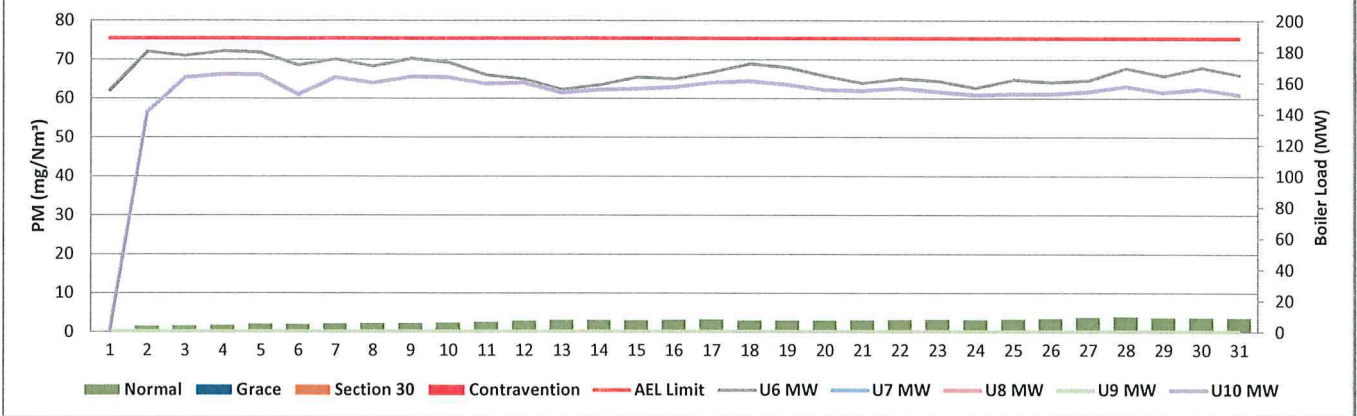


Figure 3: Hendrina North Stack SOx Emissions - September 2020

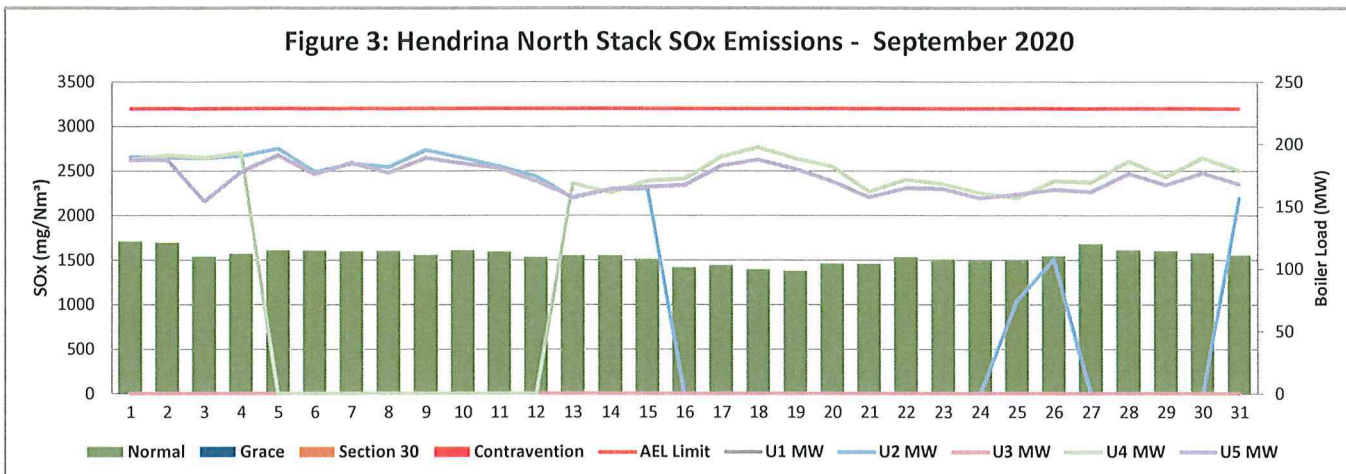


Figure 4: Hendrina South Stack SOx Emissions - September 2020

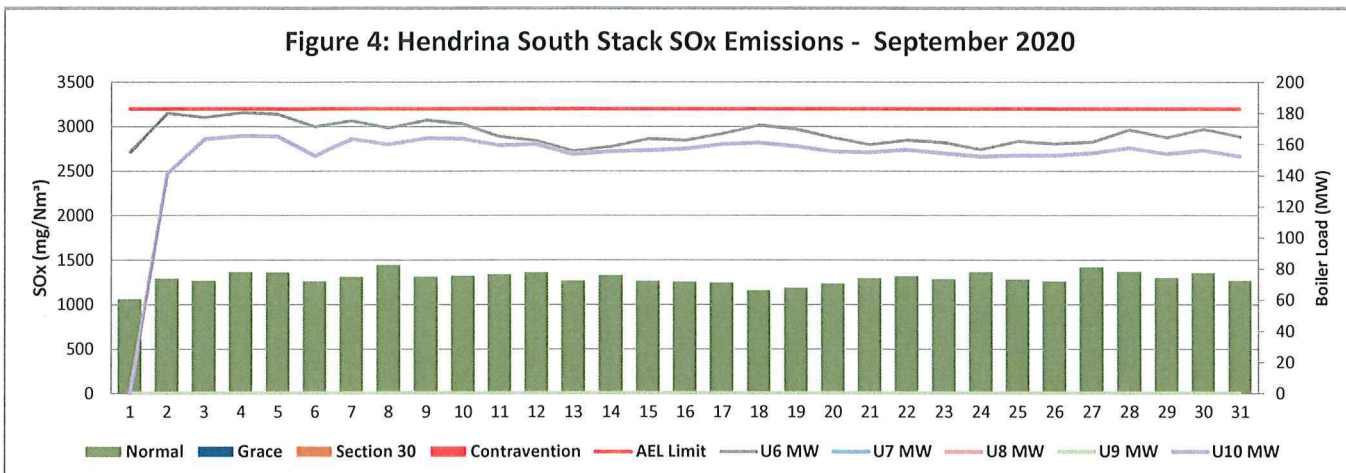


Figure 5: Hendrina North Stack NOx Emissions - September 2020

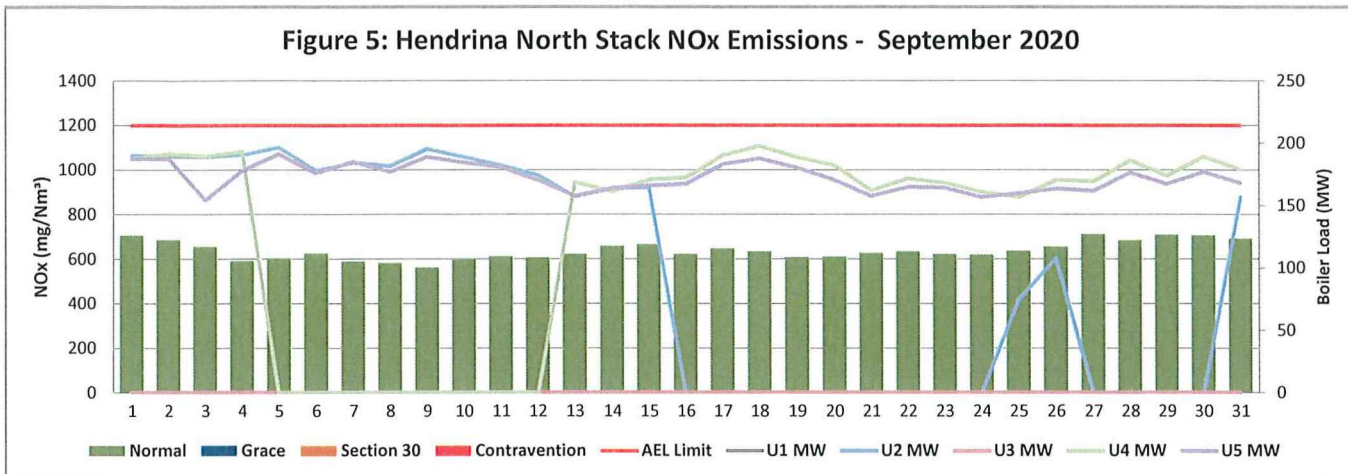
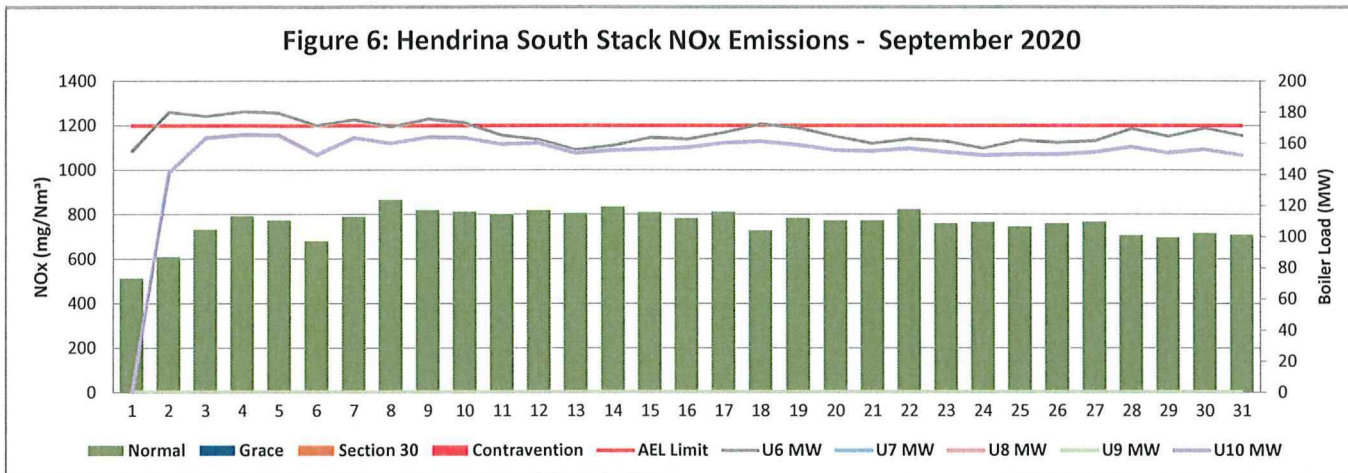


Figure 6: Hendrina South Stack NOx Emissions - September 2020



## 7 SHUT DOWN AND LIGHT UP INFORMATION

Table 7.1 PM Start-up information for the month of September-2020

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>no event</i>		<i>Unit</i>		<i>no event</i>	
Breaker Open (BO)	<i>10:25 PM</i>	<i>2020/09/15</i>	<i>09:55 AM</i>	<i>2020/09/04</i>	<i>BO previously</i>	<i>BO previously</i>		
Draught Group (DG) Shut Down (SD)	<i>11:45 AM</i>	<i>2020/09/16</i>	<i>07:25 PM</i>	<i>2020/09/04</i>	<i>n/a</i>	<i>n/a</i>		
BO to DG SD (duration)	<i>00:13:20</i>	DD:HH:MM	<i>00:09:30</i>	DD:HH:MM	<i>n/a</i>	DD:HH:MM		DD:HH:MM
Fires in time					<i>12:23:00</i>	<i>2020/09/12</i>		
Synch. to Grid (or BC)					<i>11:00 AM</i>	<i>2020/09/13</i>		
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM	<i>00:12:00</i>	DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)					<i>not &gt; limit</i>	<i>not &gt; limit</i>		
Emissions below limit from BC (duration)		DD:HH:MM		DD:HH:MM	<i>n/a</i>	DD:HH:MM		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>Unit</i>		<i>no event</i>		<i>Unit</i>		<i>no event</i>	
Breaker Open (BO)		<i>#REF!</i>			<i>BO previously</i>	<i>BO previously</i>		
Draught Group (DG) Shut Down (SD)		<i>#REF!</i>			<i>n/a</i>	<i>n/a</i>		
BO to DG SD (duration)	<i>n/a</i>	DD:HH:MM		DD:HH:MM	<i>n/a</i>	DD:HH:MM		DD:HH:MM
Fires in time	<i>03:10 AM</i>	<i>2020/09/01</i>			<i>02:02:10</i>	<i>2020/09/02</i>		
Synch. to Grid (or BC)					<i>07:10 AM</i>	<i>2020/09/02</i>		
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM	<i>00:05:00</i>	DD:HH:MM		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		DD:HH:MM	<i>n/a</i>	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 September-2020 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

Compiled by Environmental Officer Date  
B. Madisa 21/10/2020

Authorised by GM Date  
M. Lesolang 21/10/2020

Compiled by Boiler Engineering Department  
For Nkangala District Municipality  
Copies Eskom Environmental Management  
Group Technology Engineering  
Hendrina Power Station

Boiler/ FFP Date  
Marco Cossa  
Validated by Manager Boiler or Environmenta Date  
J. Ramagoma R. Nelwamondo J. Ramagoma 21/10/20

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