



Generation

Nkangala District Municipality
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Date: 2019/04/24

Attention:
Mr V Mahlangu

AND

Directorate: Air Quality Management Services

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Total number of pages:
16

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MATLA POWER STATION

Atmospheric Emission License 17/4/AEL/MP312/11/14

BOILER ENGINEERING MANAGER

24/04/19
Date

ENGINEERING MANAGER

24/06/2019
Date

ENVIRONMENTAL MANAGER

2019-04-24
Date

MONTHLY EMISSIONS REPORT FOR MATLA POWER STATION
 Atmospheric Emission License 17/4/AEL/MP312/11/14
 REPORTING MONTH February-2019

1 PARTICULATE EMISSIONS

EMISSION LIMIT: North U5 & U6: 100 mg/Nm³ South Stack: 200 mg/Nm³
 North U4: 200 mg/Nm³

2 GASEOUS EMISSIONS

EMISSION LIMIT: North Stack: South Stack
 NO_x 1200 mg/Nm³ 1200 mg/Nm³
 SO₂ 3500 mg/Nm³ 3500 mg/Nm³

1 RAW MATERIALS AND PRODUCTS

Raw Materials and Products used	Raw Material Type	Units	Maximum Permitted Consumption/ Rate (Quantity)	Consumption/ Rate February-2019
	Coal	Tons/month		1 475 000
Fuel Oil	Tons/month		2 500	

Production Rates	Product/ By-Product Name	Unit	Maximum Production Capacity Permitted (Quantity)	Production Rate in Month of February-2019
	Energy	GW/h		2318.4
Ash	Tons/month		471000	217697
RE PM	kg/MWh		not specified	1.223

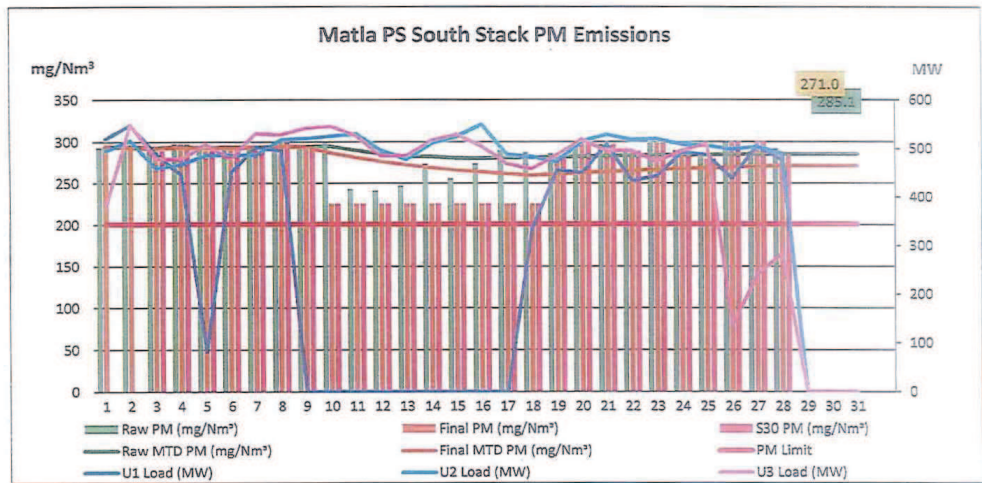
2 ABATEMET TECHNOLOGY

Associated Unit/Stack	Technology Type	Efficiency (%) for Feb-2019	Reliability (%) February-2019			
			PM	SO ₂	NO	CO ₂
South Stack	ESP	99.2%	59.3	87.8	87.8	27.4
Unit 4	ESP	98.5%	43.9	100.0	100.0	92.2
Unit 5	ESP		29.9	16.3	16.3	15.5
Unit 6	ESP	99.2%	67.9	99.4	99.4	100.0

3 ENERGY SOURCE CHARACTERISTICS

Characteristic	Stipulated Range (Unit)	Monthly Average Content
CV Content	16-24 (MJ/kg)	
Sulphur Content	0.8-1.1 (%)	1.00
Ash Content	21-40 (%)	28.32

4 EMISSION PERFORMANCE



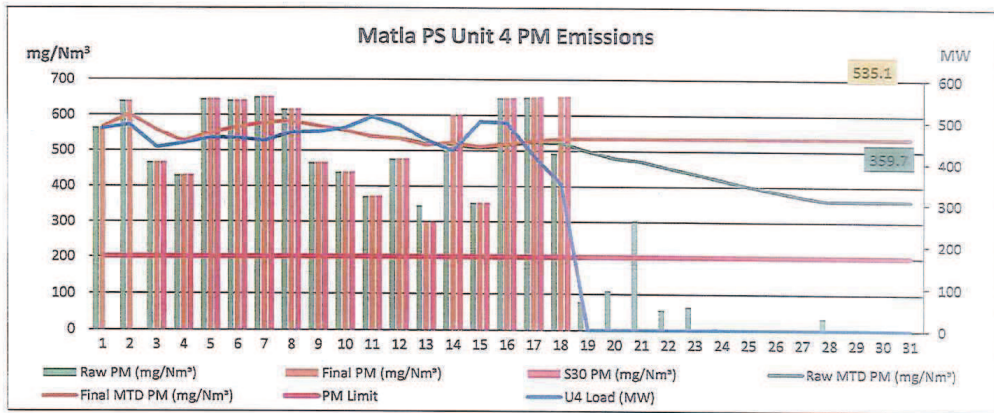


Figure 2. PM emissions (daily averages) for the month of February-2019 against emission limit for Unit 4

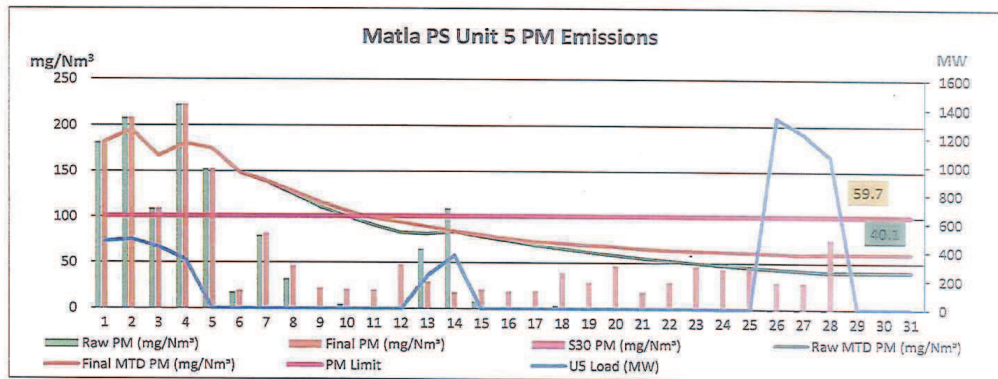


Figure 3. PM emissions (daily averages) for the month of February-2019 against emission limit for Unit 5

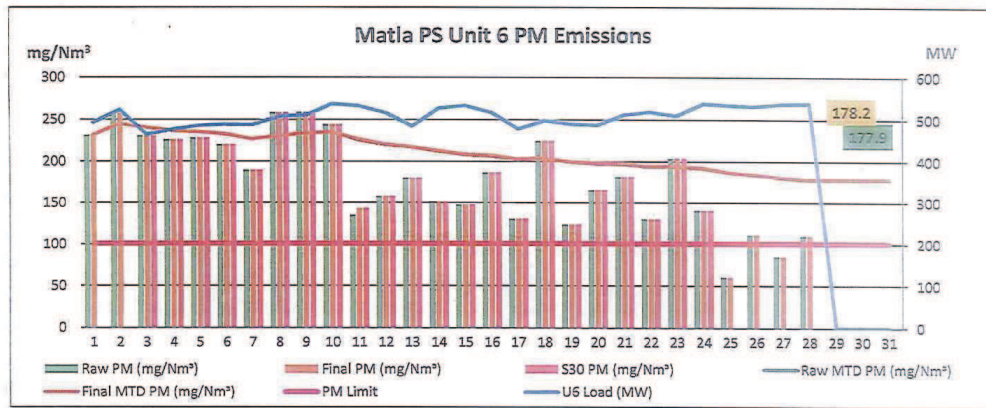


Figure 4. PM emissions (daily averages) for the month of February-2019 against emission limit for Unit 6

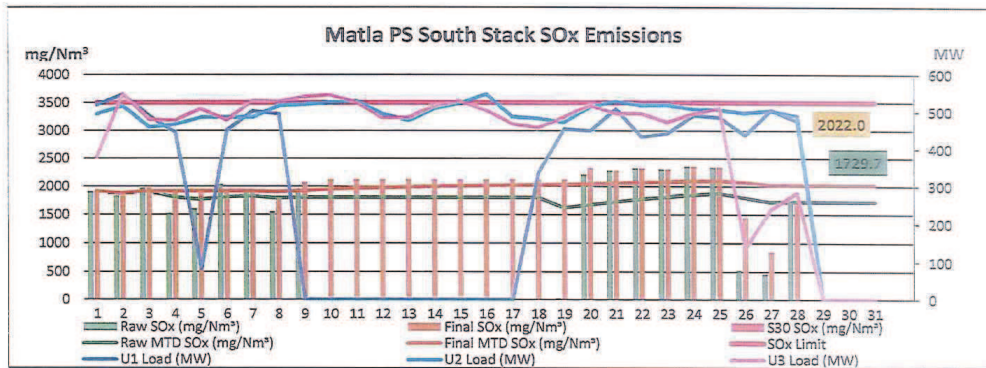


Figure 5. SO₂ emissions (daily averages) for the month of February-2019 against emission limit for the South Stack

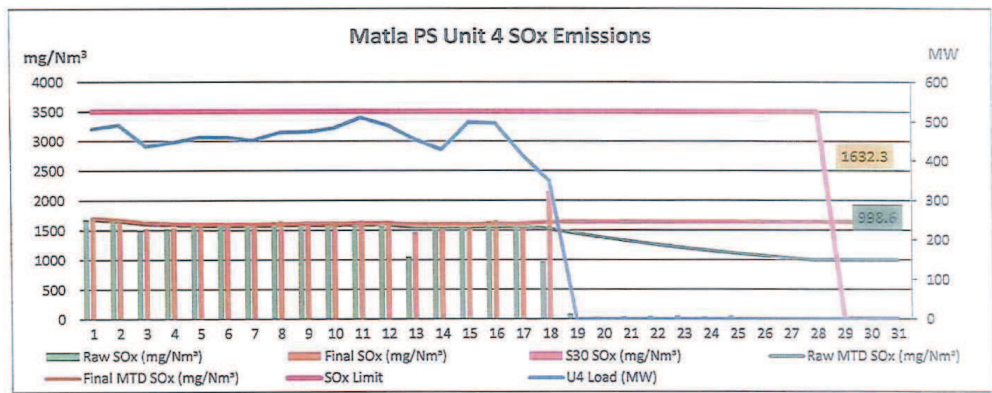


Figure 6. SO₂ emissions (daily averages) for the month of February-2019 against emission limit for Unit 4

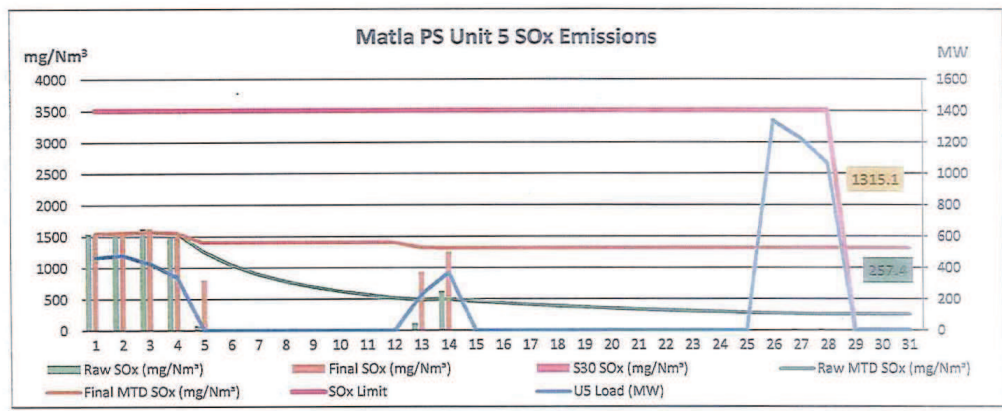


Figure 7. SO₂ emissions (daily averages) for the month of February-2019 against emission limit for Unit 5

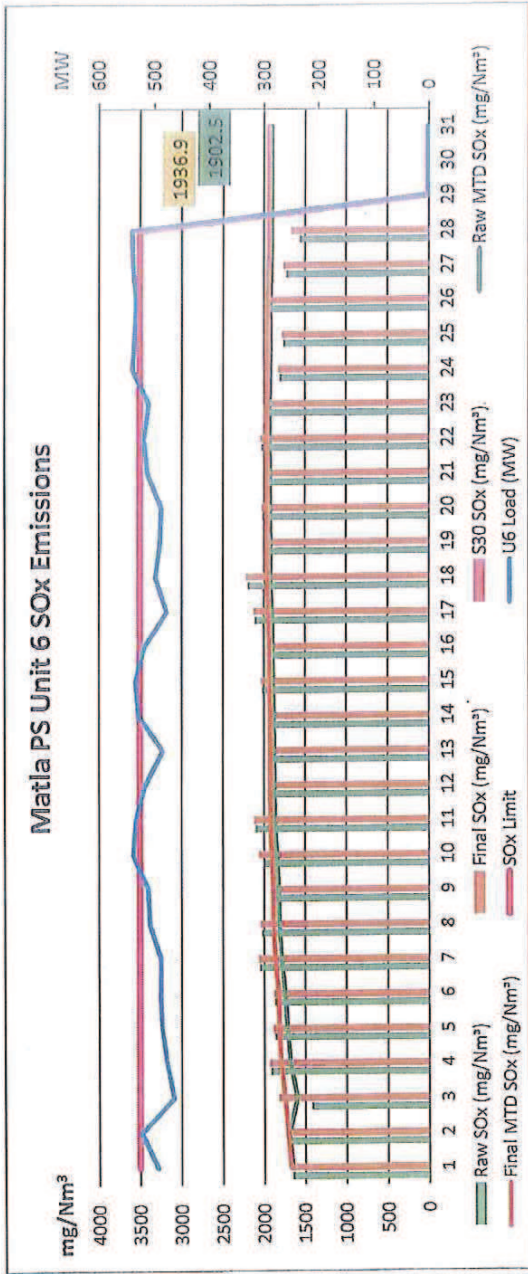


Figure 8. SO₂ emissions (daily averages) for the month of February-2019 against emission limit for Unit 6

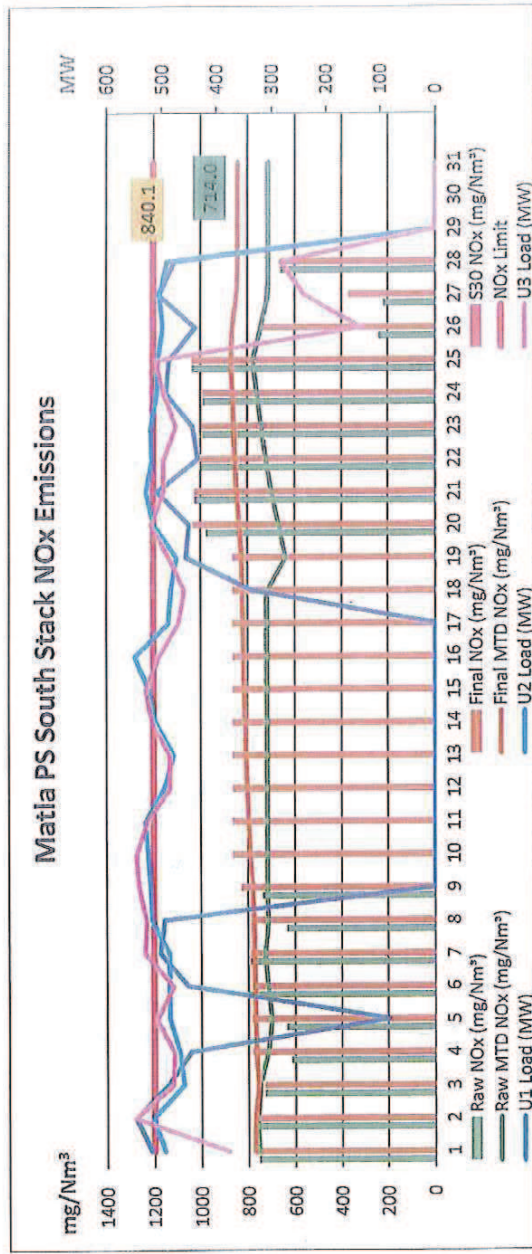


Figure 9. NOx emissions (daily averages) for the month of February-2019 against emission limit for the South Stack

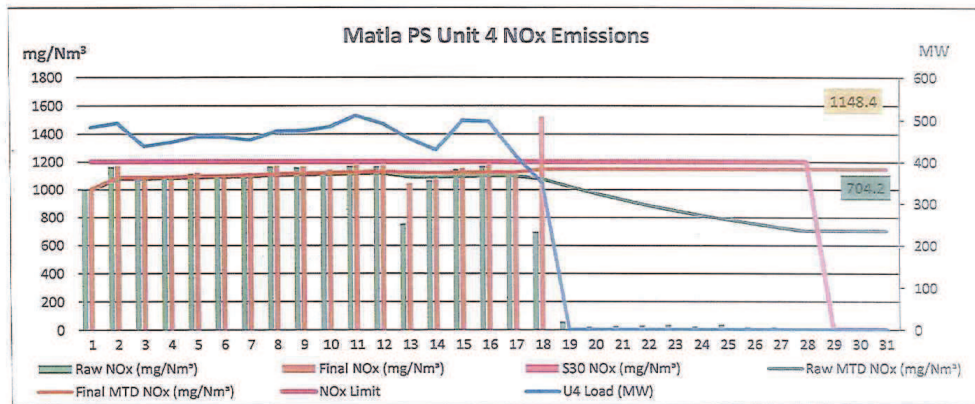


Figure 10. NOx emissions (daily averages) for the month of February-2019 against emission limit for Unit 4

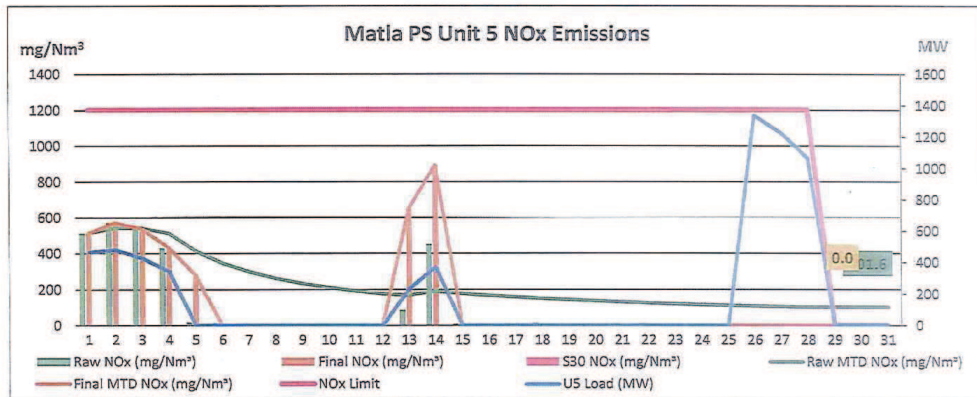


Figure 11. NOx emissions (daily averages) for the month of February-2019 against emission limit for Unit 5

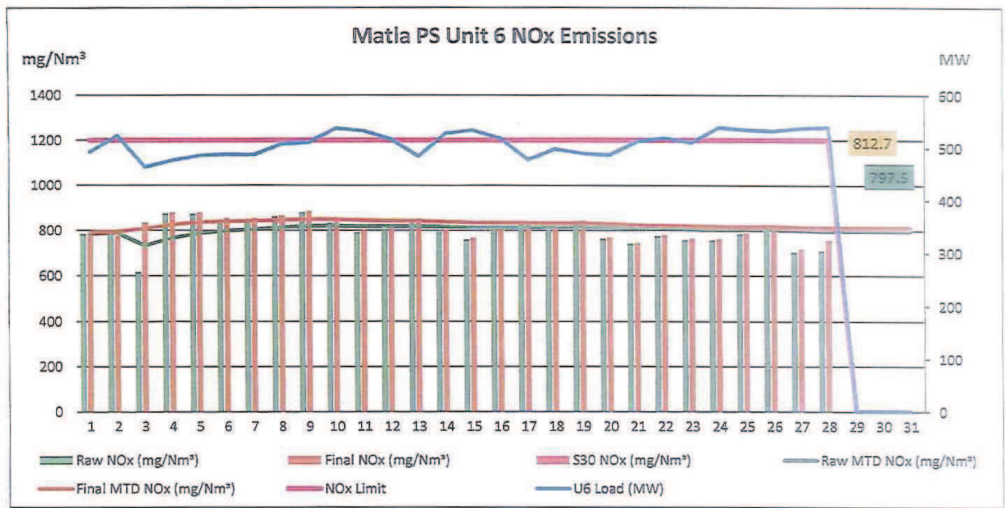


Figure 12. NOx emissions (daily averages) for the month of February-2019 against emission limit for Unit 6

Table 4: Monthly tonnages for the month of February-2019

Unit	PM (tons)	SO ₂ (tons)	NO ₂ (tons)	CO ₂ (tons)
1	204.0	1 401.6	588.5	
2	425.7	3 180.1	1 322.2	
3	361.4	2 859.8	1 180.6	
4	407.5	1 255.0	881.0	
5	41.8	342.7	120.9	
6	319.9	3 491.7	1 464.7	
SUM	1 760.2	12 530.9	5 558.0	

Table 5: Each unit and respective days operating under normal operation, days in grace period, and section 30 days respectively

Unit	Operating Days (DD:HH:MM)			
	Normal operation	In grace period	Under S 30	Unit off load
1	16:16:35	00:00:00	00:00:00	11:07:25
2	28:00:00	00:00:00	00:00:00	00:00:00
3	26:08:40	00:00:00	00:00:00	01:15:20
4	08:08:40	02:00:00	16:00:00	11:00:10
5	27:13:40	00:00:00	00:00:00	00:10:20
6	04:00:00	02:00:00	22:00:00	00:00:00

5 LIGHT UP INFORMATION

Table 6. PM Start-up information for the month of February-2019

South Stack	Event 1	Event 2	Event 3	Event 4	Event 5
Unit No.	no event	no event	no event	no event	no event
Fires in					
Synch. to Grid					
Emissions > limit from Synch. (Date and Time)					
Fires in to Synch.	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	
Emissions < limit from Synch. (Duration)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	

South Stack ...cont.	Event 6	Event 7	Event 8	Event 9	Event 10
Unit No.	no event	no event	no event	no event	no event
Fires in					
Synch. to Grid					
Emissions > limit from Synch. (Date and Time)					
Fires in to Synch.	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)
Emissions < limit from Synch. (Duration)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)

Event No.	Event 1	Event 2	Event 3	Event 4	Event 5
Unit No.4	no event	no event	no event	no event	no event
Fires in					
Synch. to Grid					
Emissions > limit from Synch. (Date and Time)					
Fires in to Synch.	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	
Emissions < limit from Synch. (Duration)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	

Event No.	Event 1	Event 2	Event 3	Event 4	Event 5
Unit No.5	no event	no event	no event	no event	no event
Fires in					
Synch. to Grid					
Emissions > limit from Synch. (Date and Time)					
Fires in to Synch.	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	
Emissions < limit from Synch. (Duration)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	

Event No.	Event 1	Event 2	Event 3	Event 4	Event 5
Unit No.6	no event	no event	no event	no event	no event
Fires in					
Synch. to Grid					
Emissions > limit from Synch. (Date and Time)					
Fires in to Synch.	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	
Emissions < limit from Synch. (Duration)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	Hrs (dd:hh:mm)	

Table 7. Point Source emissions released during start-up (fires-in) for the month of February-2019 in mg/Nm³

South Stack Emission Average from Fires-in to Synchronisation (Date and Time)							
Unit	Fires-In		Synchronisation		PM	SO ₂	NO _x
Unit 1	2019/02/06	2019/02/06	2019/02/06	11:20 AM	298.1	2142.6	885.5
Unit 1	2019/02/10	03:55 AM	2019/02/18	05:50 PM	266.9	808.5	6.1
Unit 1			2019/02/26	02:10 PM			
Unit 3	2019/02/01	09:55 AM	2019/02/02	04:45 AM	294.8	839.9	42.9
Unit 3	2019/02/27	01:10 PM	2019/02/27	10:15 PM	272.2	704.9	6.3
no event							
no event							
no event							
no event							
no event							

North Stack Emission Average from Fires-in to Synchronisation (Date and Time)							
Unit	Fires-In		Synchronisation		PM	SO ₂	NO _x
no event							
no event							
no event							
no event							
no event							
no event							
no event							
no event							
no event							
no event							
no event							
no event							
no event							
no event							
no event							

Table 8. Point Source emissions released during Shut-down (SD) for the month of February-2019 in mg/Nm³

South Stack Emission Average Breaker Open (BO) to Draught Group Shut Down (SD) (Date & Time)							
Unit	Breaker Open		DG SD		PM	SO ₂	NO _x
Unit 1	2019/02/05	12:40 AM	2019/02/05	07:35 PM	298.1	2142.6	885.5
Unit 1	2019/02/09	12:55 AM	2019/02/09	04:05 PM	266.9	808.5	6.1

6 EMERGENCY GENERATION

Emergency Generation *[This is only required for stations that are requested to report on this information]*

Table 8. Emergency Generation per unit for the month of February-2019

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Emergency Generation hours declared by national Control						
Emergency Hours declared including hours after stand down						
Hours over the Limit during Emergency Generation						

7 COMPLAINTS REGISTER

Table 9. Complaints for the month of February-2019

Source Code/ Name	Root Cause Analysis	Calculation of Impacts/ emissions associated with	Dispersion modeling of pollutants where	Measures implemented to prevent reoccurrence	Date by which will be implemented
<i>(Insert name of affected person/source)</i>	<i>(Insert root cause for incident)</i>	<i>(Insert emissions associated with incident)</i>	<i>(Insert dispersion model information where applicable)</i>	<i>(Insert mitigation measures taken)</i>	<i>(Insert implementation date)</i>

8 General

CO2 and O2 values needs to be verified and this investigation is in progress. If there are deviations after completion of the investigation corrections will be effected and re-report. There are two section 30, one for South Stack caused by underperforming Unit 1 and Unit 4. These section 30s are already reported.

Boiler Plant Engineering Date Environmental Practitioner Date

 D General Manager Date

Compiled by: Boiler Engineering Department
For: Department of Environmental Affairs and Tourism
Copies: Eskom Environmental Management

Group Technology Engineering

Matla Power Station:

ESP & SO3 System Engineer
Chief Air Pollution Control Officer

Engineering Manager
Operating Manager
Maintenance Manager
Boiler Engineering Manager
System Engineer
Environmental Manager
Performance and Test Manager
Production Managers
