Eskom

Generation

Nkangala District Municipality
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Date: 2019/04/23

Attention:
Mr V Mahlangu

AND

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Total number of pages:
15

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MATLA POWER STATION

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

BOILER ENGINEERING MANAGER	24/04/2019 Date
ENGINEERING MANAGER	24/04/2019 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 March-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	
NOx		1200 mg/Nm³		1200 mg/Nm³
SO_2		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 March-2019
	Coal	Tons/month	*1 475 000*	*768 704*
	Fuel Oil	Tons/month	*2 500*	*2069.01*
Production Rates	Product/ By-Product Name	Unit	Maximum Production Capacity Permitted (Quantity)	Production Rate in Month of March-2019
	Energy	GWh	*2566.8*	*1399*
	Ash	Tons/month	*471000*	*217697*
	RE PM	kg/MWh	*not specified*	*1.038*

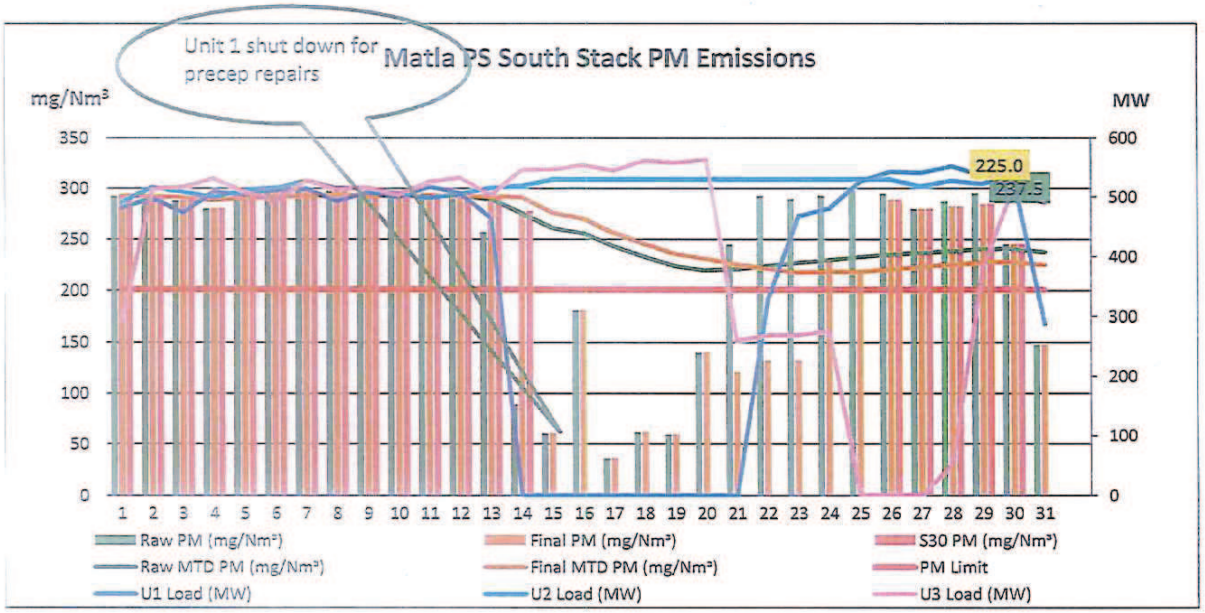
2 ABATEMET TECHNOLOGY

			Reliability (%) March-2019			
Associated Unit/Stack	Technology Type	Efficiency (%) for Mar-2019	PM	SO_2	NO	CO_2
South Stack	*ESP*	*99.2%*	*56.4*	*88.7*	*99.7*	
Unit 4	*ESP*	*98.7%*	*76.0*	*92.3*	*92.6*	
Unit 5	*ESP*	*OFF*	*OFF*	*OFF*	*OFF*	
Unit 6	*ESP*	*99.8%*	*100.0*	*80.4*	*80.7*	

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



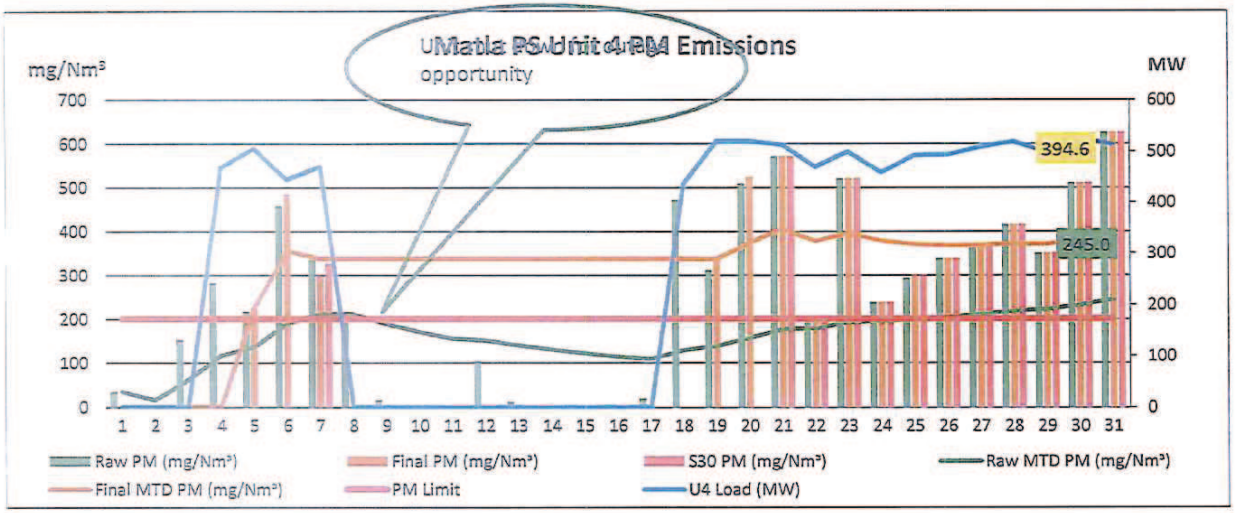


Figure 2. PM emissions (daily averages) for the month of March-2019 against emission limit for Unit 4

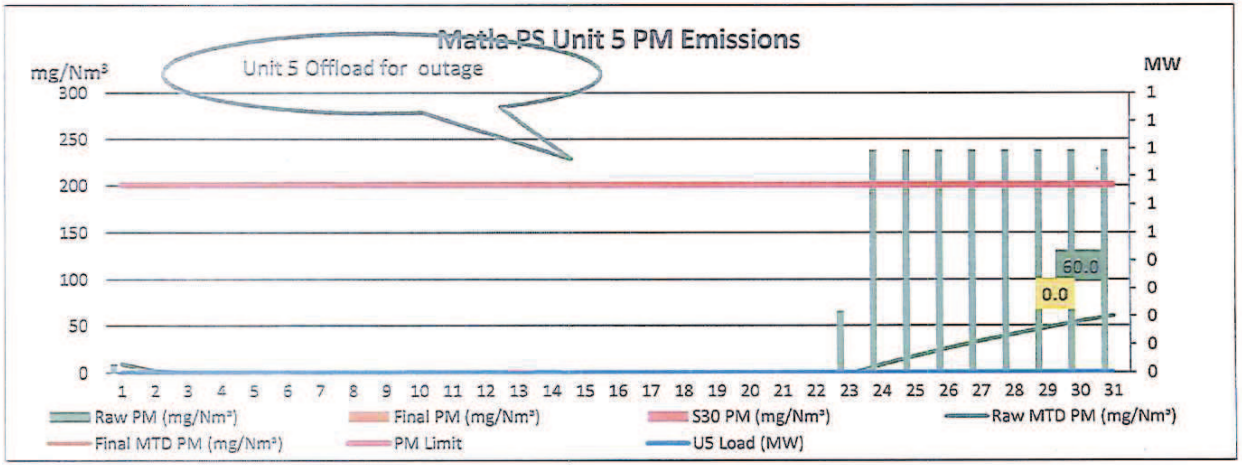


Figure 3. PM emissions (daily averages) for the month of March-2019 against emission limit for Unit 5

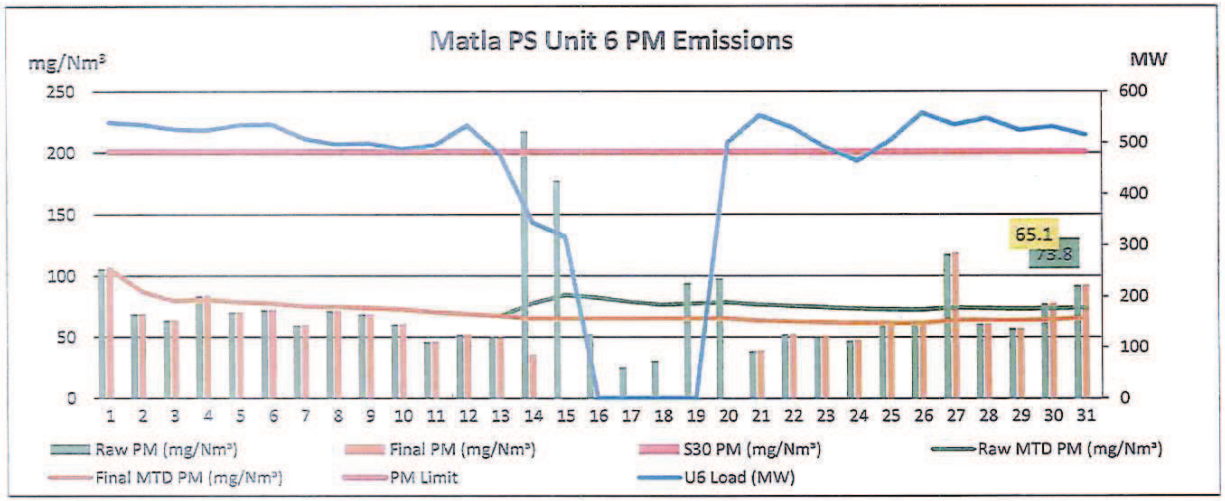


Figure 4. PM emissions (daily averages) for the month of March-2019 against emission limit for Unit 6

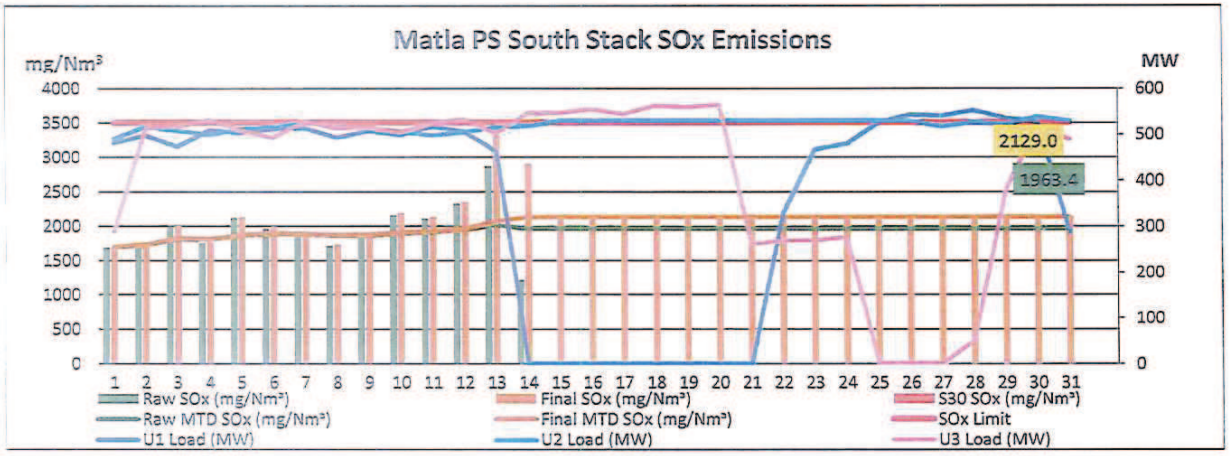


Figure 5. SO_2 emissions (daily averages) for the month of March-2019 against emission limit for the South Stack

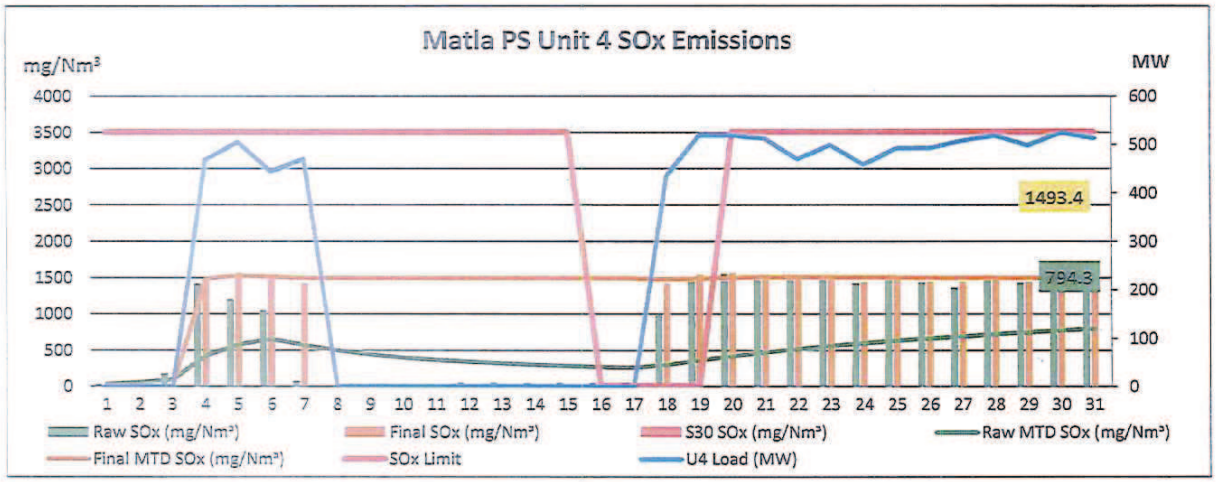


Figure 6. SO_2 emissions (daily averages) for the month of March-2019 against emission limit for Unit 4

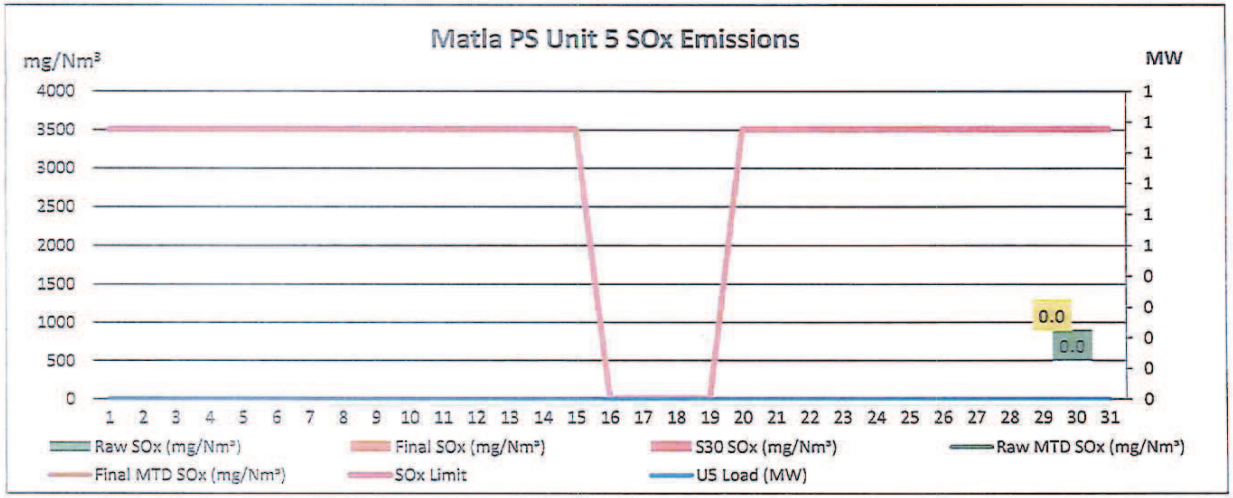


Figure 7. SO_2 emissions (daily averages) for the month of March-2019 against emission limit for Unit 5

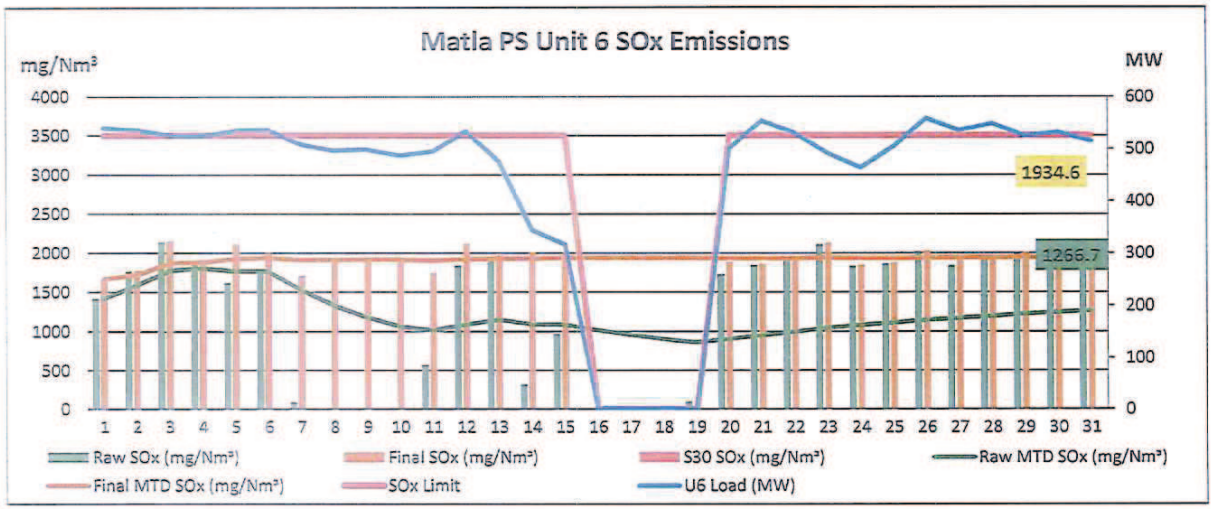


Figure 8. SO_2 emissions (daily averages) for the month of March-2019 against emission limit for Unit 6

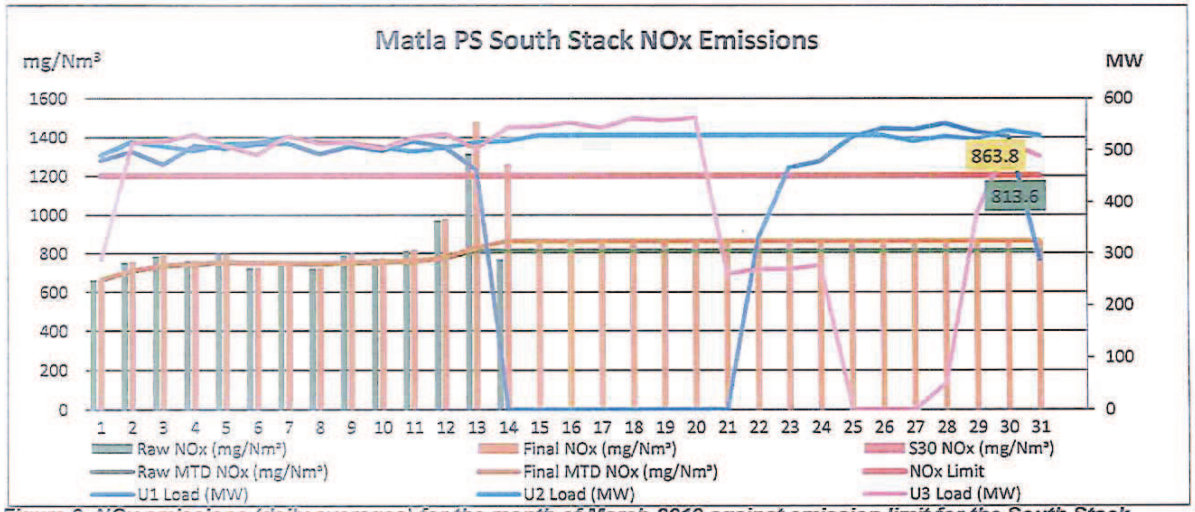


Figure 9. NOx emissions (daily averages) for the month of March-2019 against emission limit for the South Stack

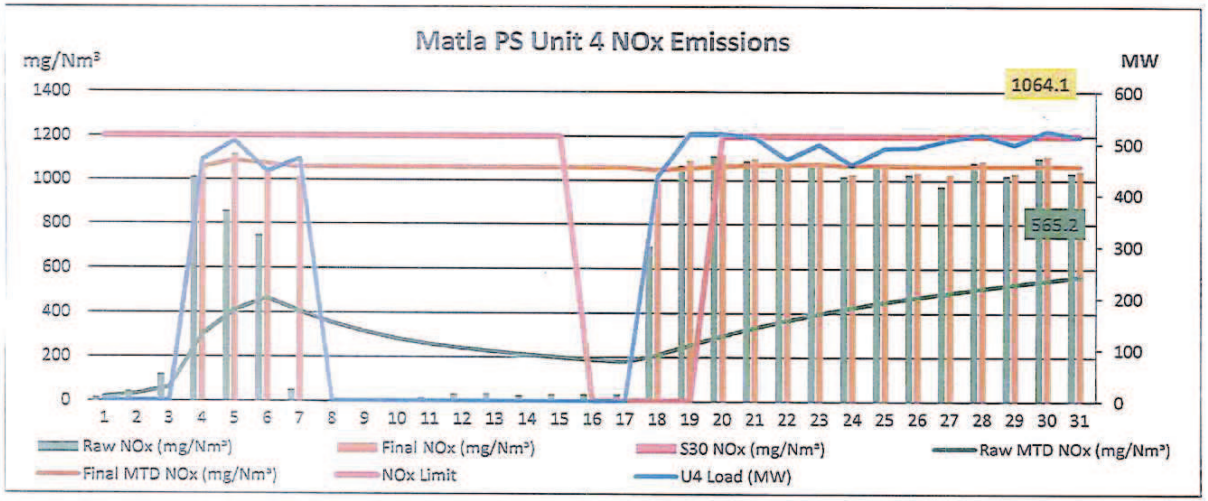


Figure 10. NOx emissions (daily averages) for the month of March-2019 against emission limit for Unit 4

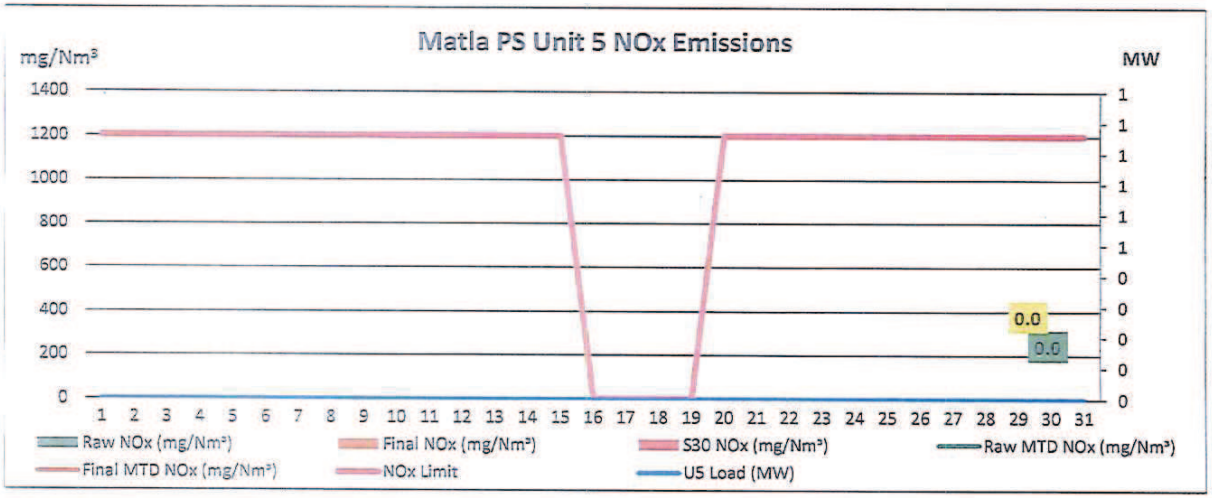


Figure 11. NOx emissions (daily averages) for the month of March-2019 against emission limit for Unit 5

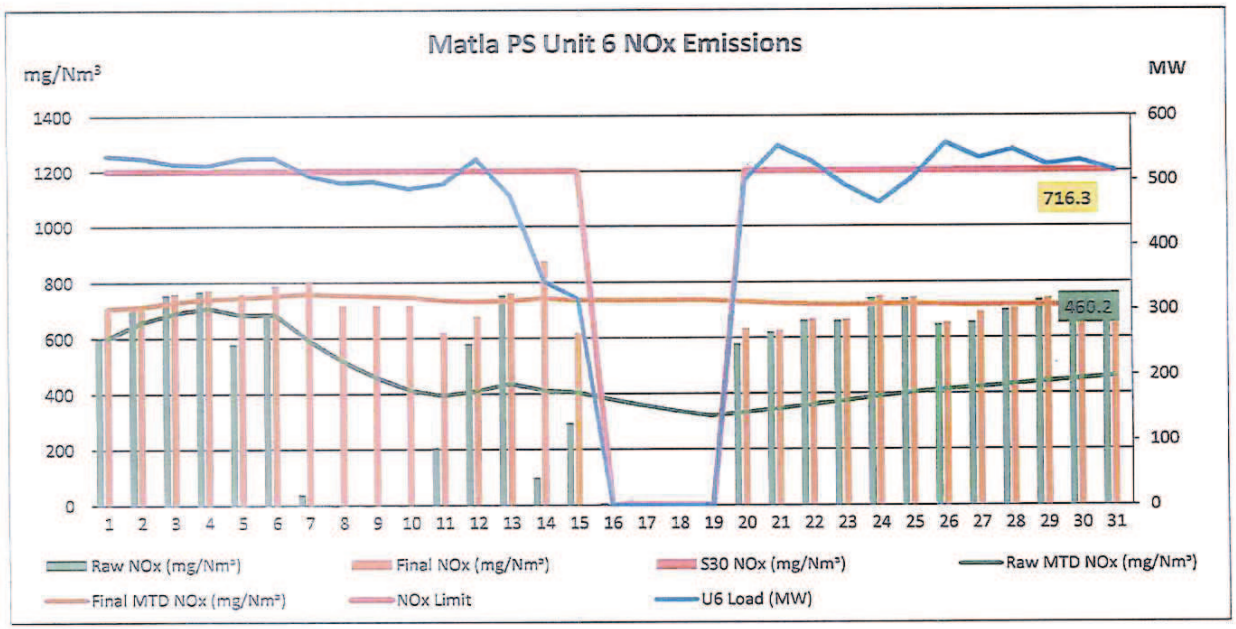


Figure 12. NOx emissions (daily averages) for the month of March-2019 against emission limit for Unit 6

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

Unit	PM (tons)	SO_2 (tons)	NO_2 (tons)	CO_2 (tons)
1	285.1	2 092.4	842.3	
2	403.1	3 824.3	1 551.6	
3	313.6	3 031.6	1 230.7	
4	350.1	1 305.5	931.3	
5	0.0	0.0	0.0	
6	100.1	2 898.0	1 078.5	
SUM	1 452.0	13 151.8	5 634.4	

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

	Operating Days (DD:HH:MM)			
Unit	Normal operation	In grace period	Under S 30	Unit off load
1	14:13:10	02:00:00	04:09:00	10:01:50
2	31:00:00	00:00:00	00:00:00	00:00:00
3	26:12:05	00:00:00	00:00:00	04:11:55
4	00:12:40	06:00:00	10:12:00	13:23:20
5	00:00:00	00:00:00	00:00:00	31:00:00
6	25:11:05	00:00:00	00:00:00	05:12:55

5 LIGHT UP INFORMATION

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

South Stack	*Event 1*		*Event 2*		*Event 3*		*Event 4*		*Eve*
Unit No.	*no event*		*no event*		*no event*		*no event*		*no e*
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		Ever
Unit No.	no event		no event		no event		no event		no e
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		Eve.
Unit No.4	no event		no event		no event		no event		no e
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		Eve.
Unit No.5	no event		no event		no event		no event		no e
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		Eve.
Unit No.6	no event		no event		no event		no event		no e
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 March-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	2019/03/22	2019/03/22	2019/03/23	09:15 AM	289.0	661.7	13.0
Unit 3	2019/03/21	11:10 AM	2019/03/21	03:05 PM	300.6	621.8	17.5
Unit 3	2019/03/28	03:25 PM	2019/03/28	11:35 PM	298.6	699.9	12.8
no event							
no event							
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							
no event							

Table 8. Point Source emissions released during Shut-down (SD) for the month of March-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	2019/03/13	04:05 PM	2019/03/14	10:15 PM	289.0	661.7	13.0
Unit 3	2019/03/21	03:55 AM	2019/03/21	09:25 AM	300.6	621.8	17.5

Unit 3	2019/03/24	11:00 PM	2019/03/26	02:10 AM	298.6	699.9	12.8
no event							
no event							
no event							
no event							
no event							
no event							
no event							

North Stack Emission Average Breaker Open (BO) to Draught Group Shut Down (SD) (Date & Time)							
Unit	Breaker Open		DG SD		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							

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 March-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 March-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 whi will be imp
(Insert name of affected person/source)	*(Insert root cause for incident)*	*(Insert emissions associated with incident)*	*(Insert dispersion model information where applicable)*	*(Insert mitigation measures taken)*	*(Insert implemer mitigation*

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 underperfomning Unit 1 and Unit 4. These section 30s are already reported.

Boiler Plant Engineering	Date	Environmental Practioner	Date
General Manager	Date	ESP & SO3 System Engineer	
Compiled by:	Boiler Engineering Department	Chief Air Pollution Control Officer	
For:	Department of Environmental Affairs and Tourism		
Copies:	Eskom Environmental Management		
	Group Technology Engineering	Engineering Manager	
	Matla Power Station:	Operating Manager Maintenance Manager Boiler Engineering Manager System Engineer Environmental Manager Performance and Test Manager Production Managers	