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 PO BOX 437  
 MIDDLEBURG  
 1050

Date:  
 3 April 2019

Enquiries:

Ref: 17/4/AEL/MP312/11/09

Dear Ms Nembilwi

**KRIEL POWER STATION'S MONTHLY STACK EMISSIONS REPORT FOR THE MONTH OF FEBRUARY 2019**

This serves as the monthly report required in terms of Section 7.2.1 in Kriel Power Station's Atmospheric Emission License 17/4/AEL/MP312/11/09. The emissions are for the month of February 2019. Verified emissions of particulates matter, SO<sub>2</sub> and NO<sub>x</sub> (as NO<sub>2</sub>) are also included.

**Raw Materials and Products**

**Table 1:** Quantity of Raw Materials and Products used/produced for the month of February 2019

Raw Materials and Products used	Raw Material Type	Units	Maximum Permitted Consumption/ Rate (Quantity)	Consumption/ Rate in Month of February 2019
	Coal	Tons/month	1 227 600	640 301.00
	Fuel Oil	Tons/month	5 000	3 798.09
Production Rates	Product/ By-Product Name	Unit	Maximum Production Capacity Permitted (Quantity)	Production Rate in Month of February 2019
	Ash	Tons/month	not specified	404.40
	RE PM	kg/MWh	not specified	0.33

1/...

### Abatement Technology

**Table 2:** Abatement Equipment Control Technology for February 2019

Associated Unit/Stack	Technology Type	Actual Utilisation (%)
		February 2019
Unit 1	ESP	100%
Unit 2	ESP	Outage
Unit 3	ESP	93.3%
Unit 4	ESP	94.4%
Unit 5	ESP	92.5%
Unit 6	ESP	94.4%

### Energy Source Characteristics



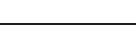
**Table 3:** Energy Source Material Characteristics for the month of February 2019

Characteristic	Stipulated Range (Unit)	Monthly Average Content
CV Content	18-24 (MJ/kg)	
Sulphur Content	0.6-1.2 (%)	0.85
Ash Content	27-32 (%)	25.44

### Monthly Monitor Reliability

Associated Unit/Stack	PM (%)	SOx (%)	NOx (%)
North	98.5%	70.8%	70.8%
South	98.8%	98.3%	98.3%

### Emissions Reporting

GRAPH LEGEND	
	Final daily emissions average in mg/Nm3 released within a particular day
	Final monthly emissions average in mg/Nm3 released within the whole month
	Emissions limit as per the AEL

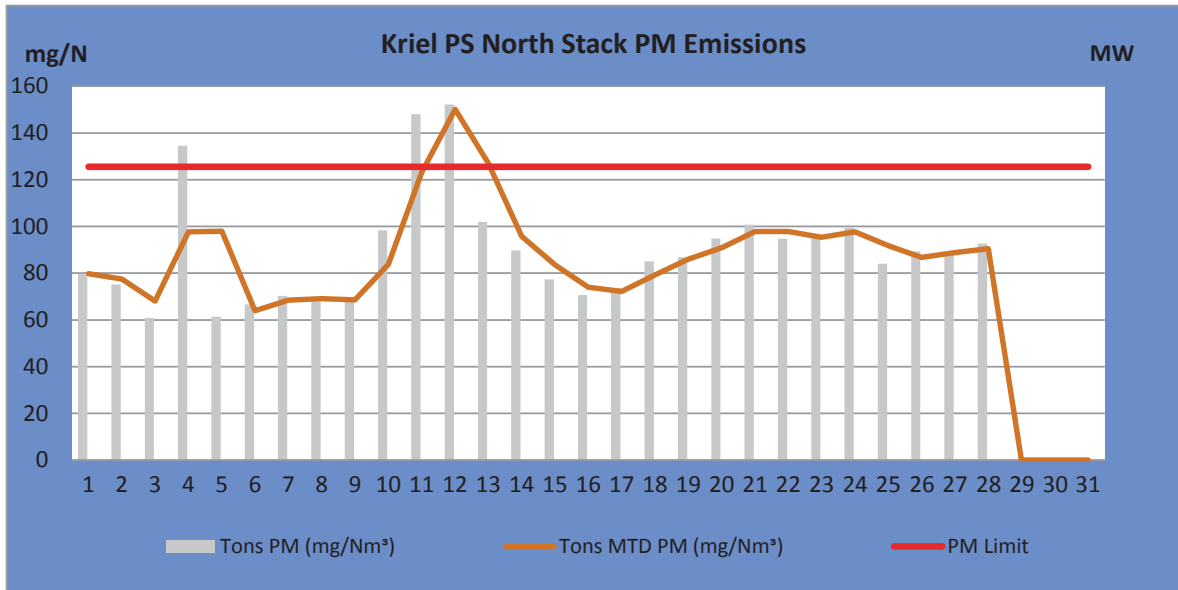


Figure 1: PM emissions (daily averages) for the month of February 2019 against emission limit for the North Stack

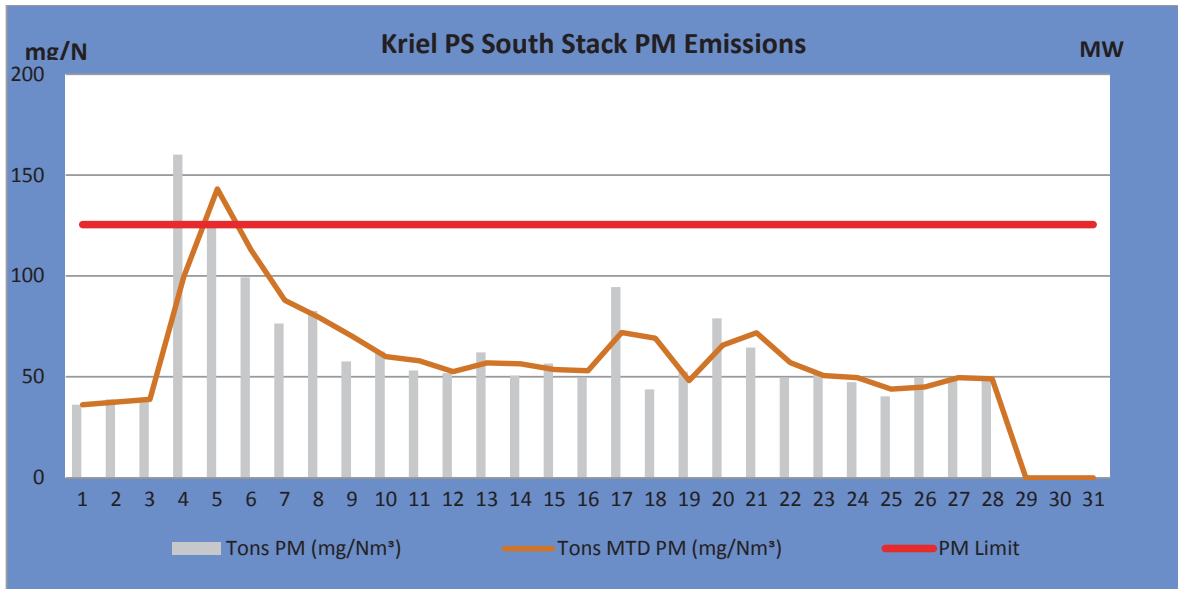


Figure 2: PM emissions (daily averages) for the month of February 2019 against emission limit for the South Stack

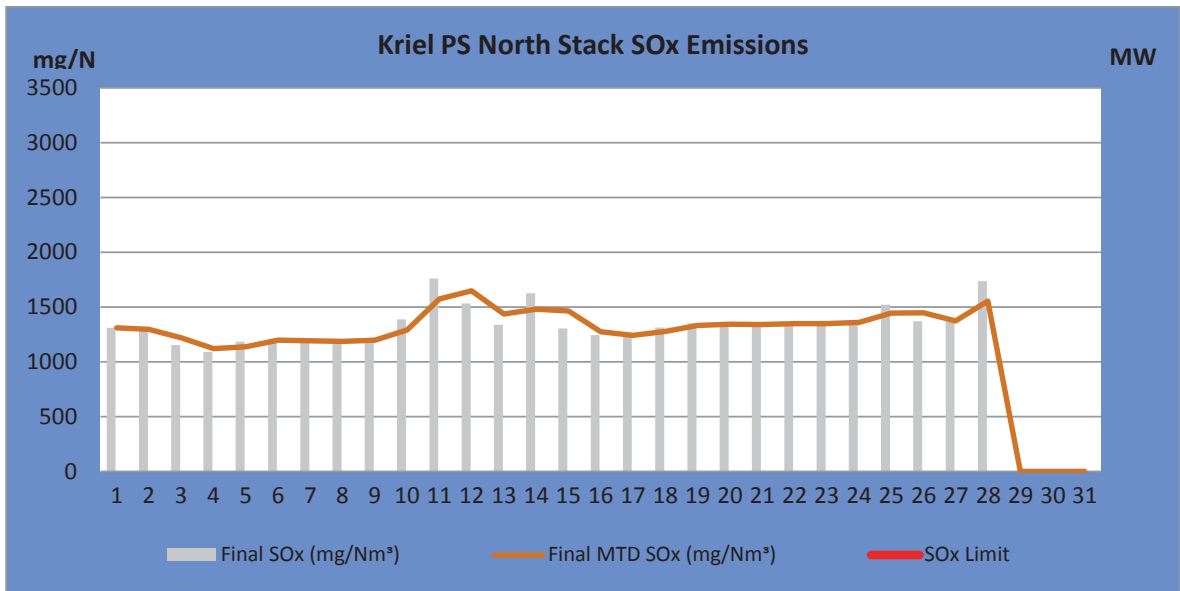
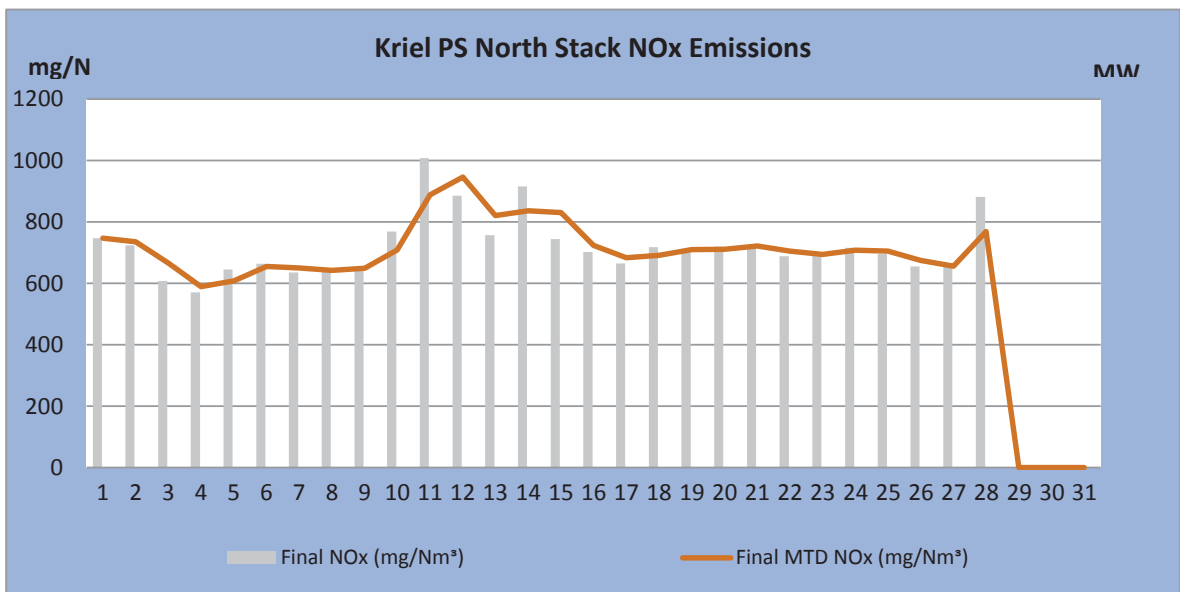


Figure 3. SO<sub>2</sub> emissions (daily averages) for the month of February 2019 against emission limit for the North Stack. SO<sub>x</sub> permitted maximum release rate is 3 500mg/Nm<sup>3</sup>



4. NO<sub>2</sub> emissions (daily averages) for the month of February 2019 against emission limit for the North Stack. NO<sub>x</sub> permitted maximum release rate is 1 600mg/Nm<sup>3</sup>

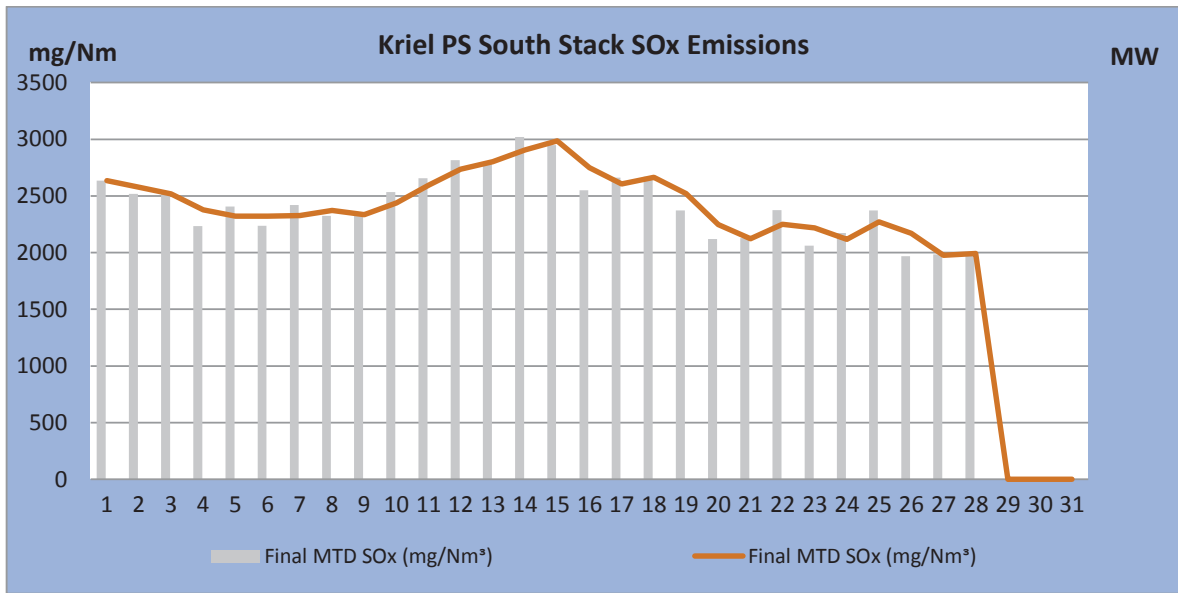


Figure 5. SO<sub>2</sub> emissions (daily averages) for the month of February 2019 against emission limit for the South Stack. SO<sub>x</sub> permitted maximum release rate is 3 500mg/Nm<sup>3</sup>

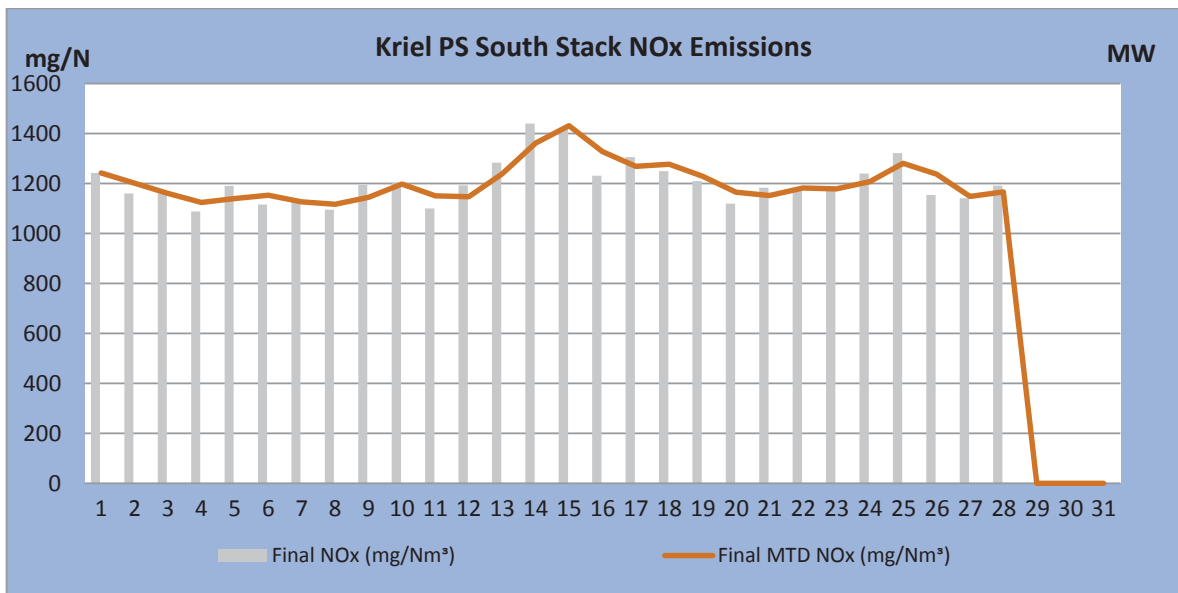


Figure 6. NO<sub>2</sub> emissions (daily averages) for the month of February 2019 against emission limit for the South Stack. NO<sub>x</sub> permitted maximum release rate is 1 600mg/Nm<sup>3</sup>

Table 4: Monthly tonnages for the month February 2019

Unit	PM (tons)	SO <sub>2</sub> (tons)	NO <sub>2</sub> (tons)	CO <sub>2</sub> (tons)
1	94.1	1 460.0	784.7	
2	0.0	0.0	0.0	
3	62.3	1 075.4	577.5	
4	79.2	2 922.7	1 491.4	
5	72.0	2 872.1	1 447.1	
6	96.8	3 699.8	1 841.7	
SUM	404.4	12 030.0	6 142.4	

Unit	Operating Days (DD:HH:MM)			
	Normal operation	In grace period	Under S 30	Unit off load
1	27:15:50	00:00:00	00:00:00	00:08:10
2	00:00:00	00:00:00	00:00:00	28:00:00
3	19:07:35	00:00:00	00:00:00	08:16:25
4	22:03:35	00:00:00	00:00:00	05:20:25
5	25:08:20	00:00:00	00:00:00	02:15:40
6	28:00:00	00:00:00	00:00:00	00:00:00

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

<b>North Stack</b>	<b>Event 1</b>		<b>Event 2</b>		<b>Event 3</b>		<b>Event 4</b>	
<b>Unit No.</b>	<b>Unit 3</b>		<b>Unit 3</b>		<b>Unit 1</b>		<b>Unit 3</b>	
<b>Fires in</b>	2:20 PM	08/02/2019	10:30 PM	22/02/2019	12:40 AM	26/02/2019	8:55 AM	27/02/2019
<b>Synchronisation with Grid</b>	2:50 PM	09/02/2019	6:25 AM	23/02/2019	8:45 AM	26/02/2019	12:50 PM	27/02/2019
<b>Emissions below limit from Sync (Date and Time)</b>								
<b>Fires in to synchronization</b>	01:00:30		00:07:55		00:08:05		00:03:55	
<b>Synchronization to &lt; limit (Duration)</b>	did not go above limit		did not go above limit		did not go above limit		did not go above limit	

<b>South Stack</b>	<b>Event 2</b>		<b>Event 3</b>		<b>Event 4</b>	
<b>Unit No.</b>	<b>Unit 4</b>		<b>Unit 5</b>		<b>Unit 5</b>	
<b>Fires in</b>	11:25 PM	14/02/2019	5:55 PM	01/02/2019	12:55 AM	12/02/2019
<b>Synchronisation with Grid</b>	10:10 AM	15/02/2019	3:45 AM	03/02/2019	11:40 AM	12/02/2019
<b>Emissions below limit from Sync</b>						
<b>Fires in to synchronization</b>	00:10:45		01:09:50		00:10:45	
<b>Synchronization to &lt; limit</b>	did not go above limit		did not go above limit		did not go above limit	

Table 7. Point Source emissions released during start-up (fires-in) for the month of February 2019 in mg/Nm<sup>3</sup>

North Stack Emission Average from Fires-in to Synchronisation (Date and Time)							
Unit	Fires-In		Synchronisation		PM	SO <sub>2</sub>	NO <sub>x</sub>
Unit 3	08/02/2019	2:20 PM	09/02/2019	2:50 PM	332.0	942.8	515.3
Unit 3	22/02/2019	10:30 PM	23/02/2019	6:25 AM	81.9	992.2	526.4
Unit 1	26/02/2019	12:40 AM	26/02/2019	8:45 AM	323.4	871.4	429.0
Unit 3	27/02/2019	8:55 AM	27/02/2019	12:50 PM	93.8	987.4	479.8

South Stack Emission Average from Fires-in to Synchronisation (Date and Time)							
Unit	Fires-In		Synchronisation		PM	SO <sub>2</sub>	NO <sub>x</sub>
Unit 4	14/02/2019	11:25 PM	15/02/2019	10:10 AM	246.0	2333.5	1130.5
Unit 5	01/02/2019	5:55 PM	03/02/2019	3:45 AM	222.0	2042.3	942.1
Unit 5	12/02/2019	12:55 AM	12/02/2019	11:40 AM	135.3	2292.5	925.9

Table 8. Point Source emissions released during Shut-down (SD) for the month of February 2019 in mg/Nm<sup>3</sup>

North Stack Emission Average Breaker Open (BO) to Draft Group Shut Down (SD) (Date & Time)					
Unit	Breaker Open	DG SD	PM	SO <sub>2</sub>	NO <sub>x</sub>
Unit 3	01/02/2019	10:30 PM	02/02/2019	8:05 PM	56.6
Unit 3	26/02/2019	8:55 PM	26/02/2019	9:00 PM	101.9

South Stack Emission Average Breaker Open (BO) to Draft Group Shut Down (SD) (Date & Time)					
Unit	Breaker Open	DG SD	PM	SO <sub>2</sub>	NO <sub>x</sub>
Unit 4	09/02/2019	1:50 PM	10/02/2019	3:30 AM	103.6
				1683.2	728.3



### Complaints Register

**Table 9:** Complaints for the month of February 2019

Source Code/ Name	Root Cause Analysis	Calculation of Impacts/ emissions associated with the incident	Dispersion modeling of pollutants where applicable	Measures implemented to prevent reoccurrence	Date by which measure will be implemented
There was no complaint related to air quality received during the month of February 2019					

General

The particulate matter emissions for both North and South Common Stacks were within the limit for the month of February 2019. The monthly gaseous emissions (NOx & SOx) were also within the limit for both stacks;

NB: The rest of the information demonstrating compliance with the emission license conditions is supplied in the annual emission reports sent to your office.