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Date:
20 November 2024

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

Dear Ms. Simelane

KRIEL POWER STATION'S MONTHLY STACK EMISSIONS REPORT FOR THE MONTH OF SEPTEMBER 2024

This serves as the monthly report required in terms of Section 7.4 in Kriel Power Station's Atmospheric Emission License 17/4/AEL/MP312/11/09. The emissions are for the month of September 2024. Verified emissions of particulates matter, SO₂ and NO_x (as NO₂) are also included.

Raw Materials and Products

Table 1: Quantity of Raw Materials and Products used/produced for the month of September 2024

Raw Materials and Products used	Raw Material Type	Units	Maximum Permitted Consumption / Rate (Quantity)	Consumption / Rate in Month of September 2024
	Coal	Tons/month	1 227 600	439 383
	Fuel Oil	Tons/month	5 000	6 561.73
Production Rates	Product/ By-Product Name	Unit	Maximum Production Capacity Permitted (Quantity)	Production Rate in Month of September 2024
	Ash	Tons/month	not specified	511.8
	RE PM	kg/MWh	not specified	0.71

1/...

Abatement Technology

Table 2: Abatement Equipment Control Technology for September 2024.

Associated Unit/Stack	Technology Type	Actual Efficiency (%)	Technology Type	SO ₃ Utilisation (%)
Unit 1	ESP& SO3	99.17	SO3 Plant	82.59
Unit 2	ESP& SO3	99.40	SO3 Plant	0.88
Unit 3	ESP& SO3	99.79	SO3 Plant	100.00
Unit 4	ESP& SO3	99.83	SO3 Plant	99.71
Unit 5	ESP& SO3	Outage	SO3 Plant	Outage
Unit 6	ESP& SO3	99.90	SO3 Plant	100.00

Note: ESP plant does not contain bypass mode operation; hence plant 100% Utilised.

Energy Source Characteristics

Table 3: Energy Source Material Characteristics for the month of September 2024




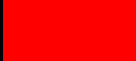
Characteristic	Stipulated Range (Unit)	Monthly Average Content
Sulphur Content	0.6-1.2 (%)	0.61
Ash Content	27-32 (%)	26.73

Monthly Monitor Reliability

Associated Unit/Stack	PM (%)	SO _x (%)	NO _x (%)
North	93.17	93.89	97.36
South	82.43	100.00	100.00

Emissions Reporting

Table 6.5: Graph 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

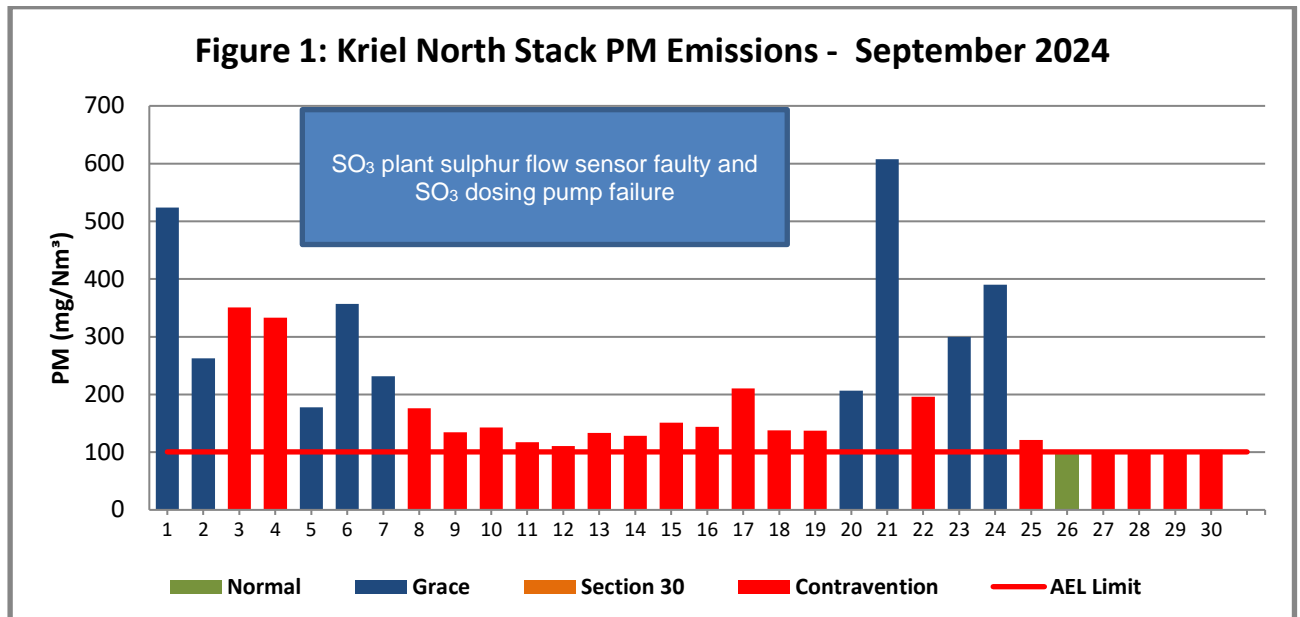


Figure 1: PM emissions for the month of September 2024 against emission limit (100 mg/Nm³) for the North Stack.

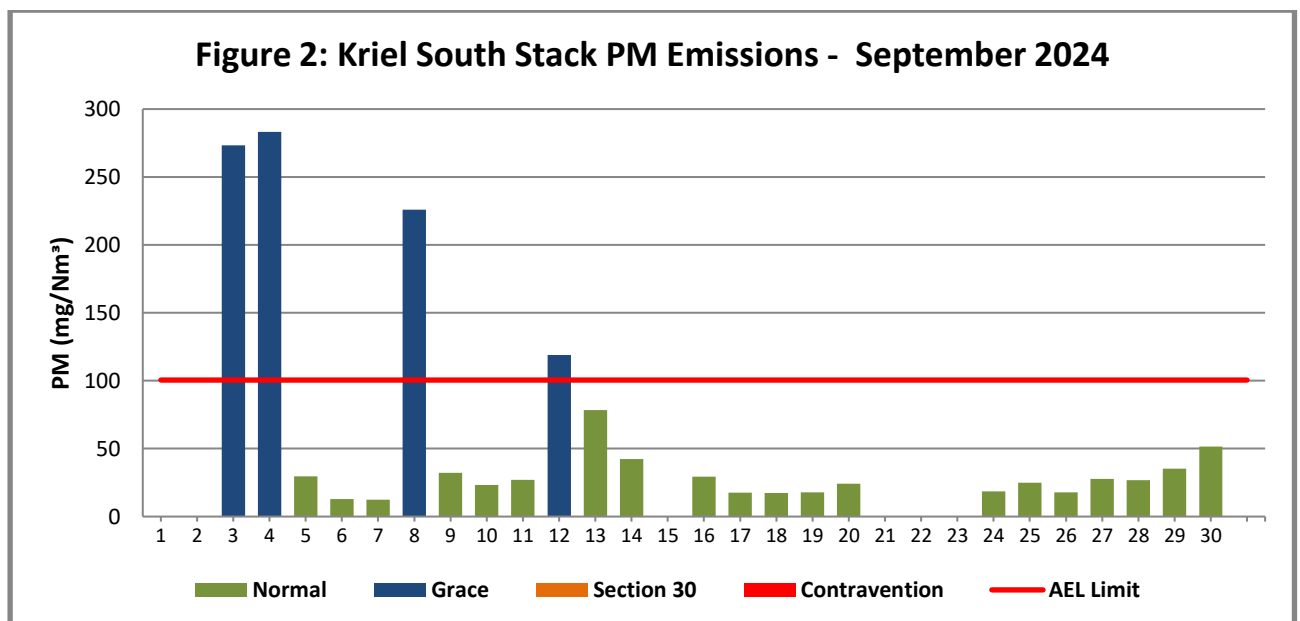


Figure 2: PM emissions for the month of September 2024 against emission limit (100 mg/Nm³) for the South Stack

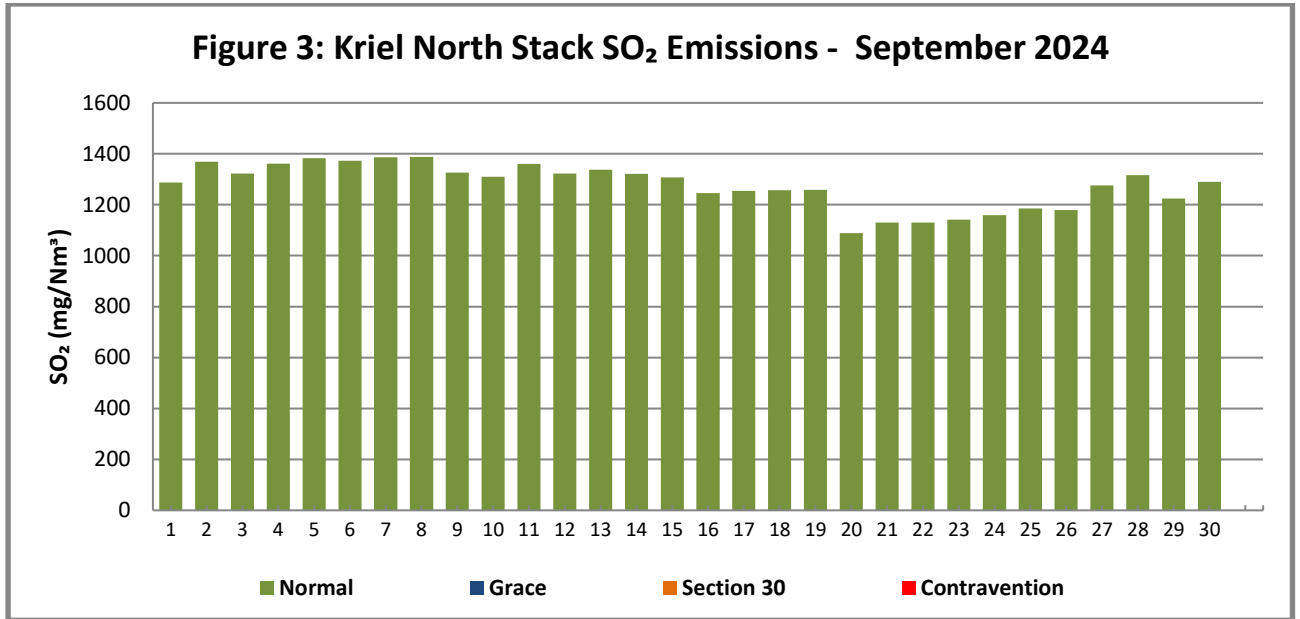


Figure 3. SO₂ emissions for the month of September 2024 against emission limit (2800 mg/Nm³) for the North Stack.

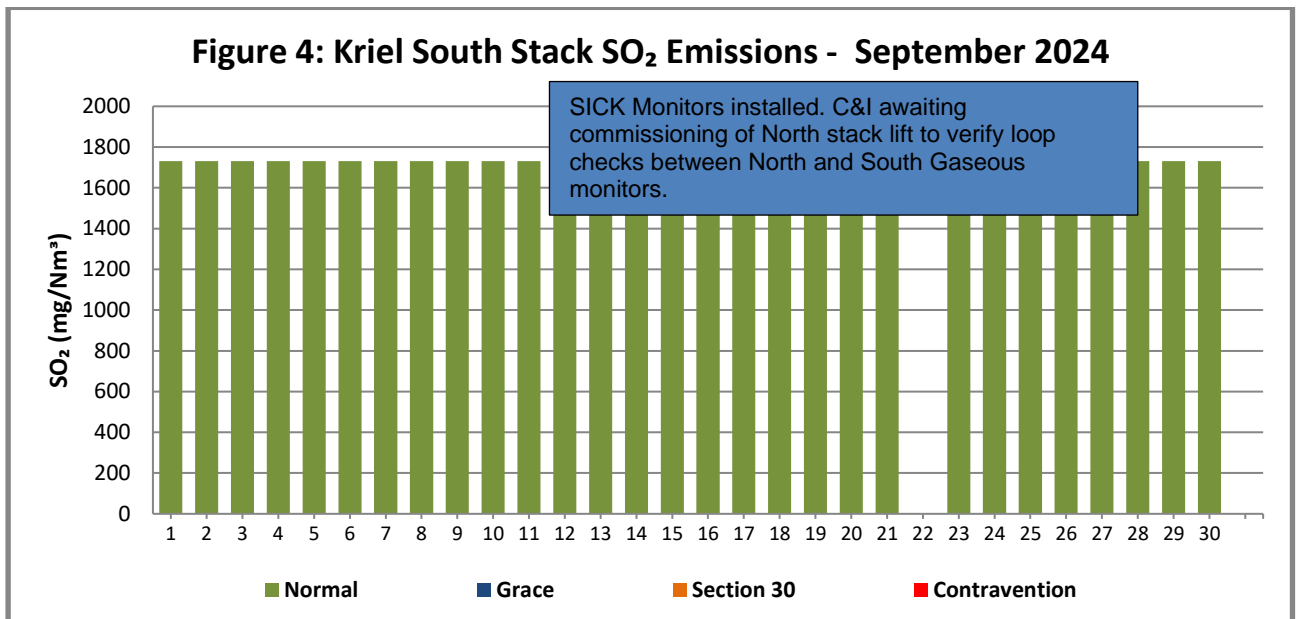


Figure 4. SO₂ emissions for the month of September 2024 against emission limit (2800mg/Nm³) for the South Stack.

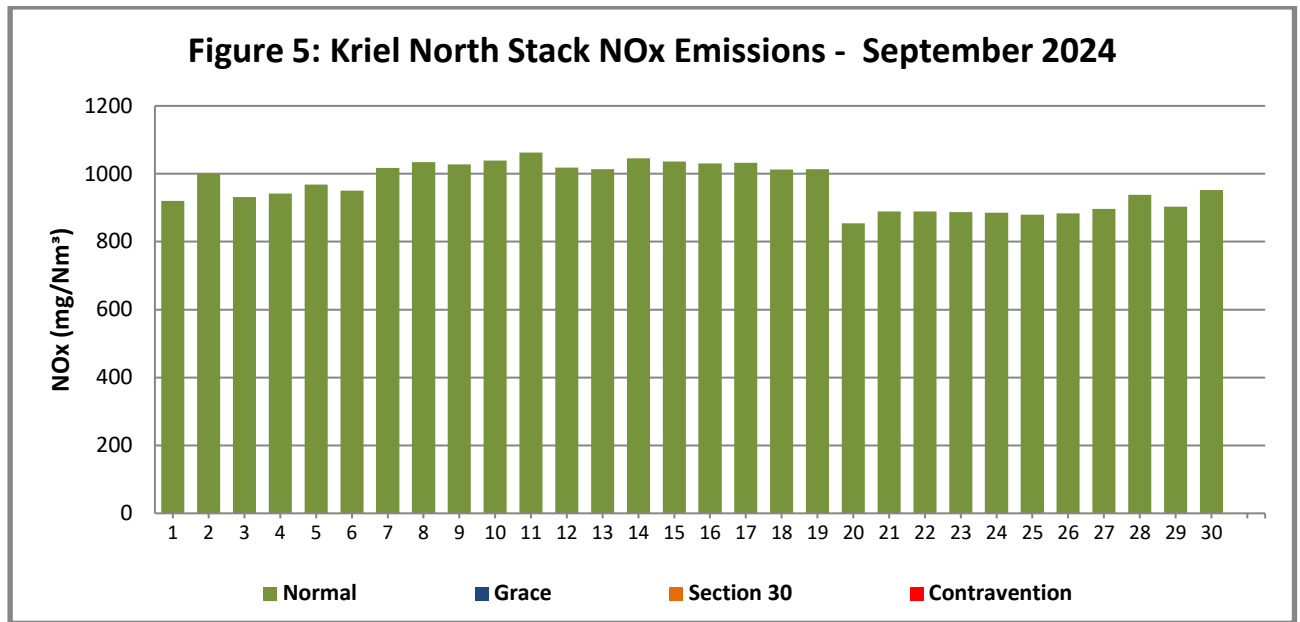


Figure 5. NO₂ emissions for the month of September 2024 against emission limit (1100) for the North Stack.

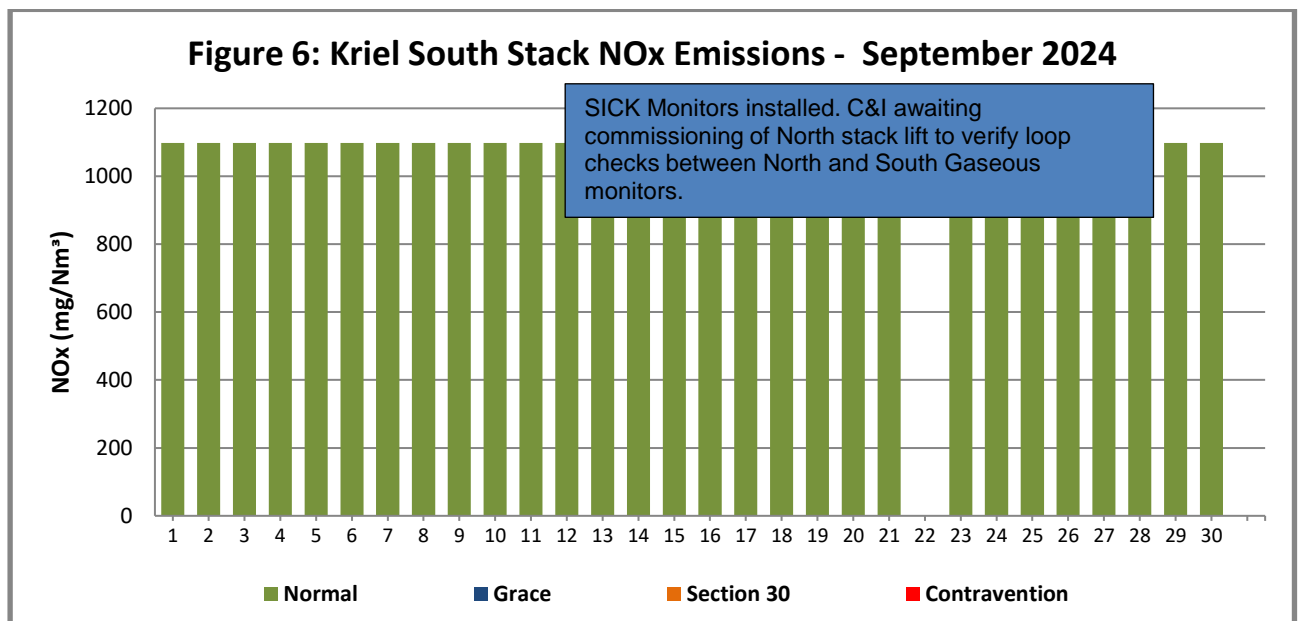


Figure 6. NO₂ emissions for the month of September 2024 against emission limit (1100mg/Nm³) for the South Stack.

Table 4: Monthly tonnages for the month September 2024

Unit	PM (tons)	SO ₂ (tons)	NO ₂ (tons)
SUM	511.8	5 652.3	3 968.2

Table 5: Each unit and respective days operating under normal operation and section 30 days respectively.

Table 5.1: Operating days in non-compliance to PM AEL Limit – September 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Monthly Limit Exceedance	Average PM (mg/Nm ³)
North	1	9	0	20	29	208.2
South	20	4	0	0	4	61.2

Table 5.2: Operating days in compliance to SOx AEL Limit - September 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SOx (mg/Nm ³)
North	30	0	0	0	0	1 276.3
South	29	0	0	0	0	1 730.8

Table 5.3: Operating days in compliance to NOx AEL Limit – September 2024

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm ³)
North	30	0	0	0	0	965.1
South	29	0	0	0	0	1 097.8

Light up information

Table 6: PM Start-up information for the month of September 2024

North Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 1		Unit 2		Unit 3		Unit 3	
Breaker Open (BO)	7:50 am	2024/09/19	11:10 am	2024/09/24			4:25 am	2024/09/17
Draught Group (DG) Shut Down (SD)	1:05 am	2024/09/20	11:55 pm	2024/09/24			10:35 am	2024/09/18
BO to DG SD (duration)	00:17:15	DD:HH:MM	00:12:45	DD:HH:MM		DD:HH:MM	01:06:10	DD:HH:MM
Fires in time	12:50 am	2024/09/21	4:35 pm	2024/09/30	9:00 pm	2024/09/05	5:55 pm	2024/09/18
Synch. to Grid (or BC)	8:15 am	2024/09/21	2:05 am	2024/10/01	11:35 am	2024/09/06	12:35 am	2024/09/19
Fires in to BC (duration)	00:07:25	DD:HH:MM	00:09:30	DD:HH:MM	00:14:35	DD:HH:MM	00:06:40	DD:HH:MM
Emissions below limit from BC (end date)	4:00 pm	2024/09/25	not > limit	not > limit	4:00 pm	2024/09/25	4:00 pm	2024/09/25
Emissions below limit from BC (duration)	04:07:45	DD:HH:MM	n/a	DD:HH:MM	19:04:25	DD:HH:MM	06:15:25	DD:HH:MM

North Stack_Cont	Event 5		Event 6	
Unit No.	Unit 3		Unit 2	
Breaker Open (BO)	6:45 am	2024/09/20	4:25 am	2024/09/22
Draught Group (DG) Shut Down (SD)	9:00 am	2024/09/20	9:25 am	2024/09/23
BO to DG SD (duration)	00:02:15	DD:HH:MM	01:05:00	DD:HH:MM
Fires in time	12:45 pm	2024/09/20		
Synch. to Grid (or BC)	5:30 pm	2024/09/20		
Fires into BC (duration)	00:04:45	DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)	4:00 pm	2024/09/25		
Emissions below limit from BC (duration)	04:22:30	DD:HH:MM		DD:HH:MM

South Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 4		Unit 4		Unit 6		Unit 4	
Breaker Open (BO)	BO previously	BO previously	8:50 pm	2024/09/10	4:15 pm	2024/09/13	11:05 pm	2024/09/14
Draught Group (DG) Shut Down (SD)	n/a	n/a	DG did not trip or SD	DG did not trip or SD	DG did not trip or SD	DG did not trip or SD	DG did not trip or SD	DG did not trip or SD
BO to DG SD (duration)	n/a	DD:HH:MM	n/a	DD:HH:MM	n/a	DD:HH:MM	n/a	DD:HH:MM
Fires in time			8:50 pm	2024/09/10	4:15 pm	2024/09/13	11:05 pm	2024/09/14
Synch. to Grid (or BC)			5:05 pm	2024/09/11	8:30 pm	2024/09/13	6:20 am	2024/09/15
Fires into BC (duration)		DD:HH:MM	00:20:15	DD:HH:MM	00:04:15	DD:HH:MM	00:07:15	DD:HH:MM
Emissions below limit from BC (end date)			not > limit	not > limit	not > limit	not > limit	not > limit	not > limit
Emissions below limit from BC (duration)		DD:HH:MM	n/a	DD:HH:MM	n/a	DD:HH:MM	n/a	DD:HH:MM

South Stack_Cont	Event 5		Event 6		Event 7		Event 7	
Unit No.	Unit 4		Unit 6		Unit 6		Unit 6	
Breaker Open (BO)	5:30 am	2024/09 /20	BO previously	BO previously	8:35 pm	2024/09 /04	4:10 pm	2024/0 9/13
Draught Group (DG) Shut Down (SD)	8:10 pm	2024/09 /20	n/a	n/a	1:50 pm	2024/09 /05	10:15 am	2024/0 9/14
BO to DG SD (duration)	00:14: 40	DD:HH: MM	n/a	DD:HH:MM	00:17: 15	DD:HH: MM	00:18: 05	DD:HH: MM
Fires in time	11:10 pm	2024/09 /23	12:00 am	2024/09/03			7:50 am	2024/0 9/20
Synch. to Grid (or BC)	8:35 am	2024/09 /24	11:35 pm	2024/09/02			2:20 am	2024/0 9/23
Fires into BC (duration)	00:09: 25	DD:HH: MM		DD:HH:MM		DD:HH: MM	02:18: 30	DD:HH: MM
Emissions below limit from BC (end date)	not > limit	not > limit	12:00 am	2024/09/09			not > limit	not > limit
Emissions below limit from BC (duration)	n/a	DD:HH: MM	06:00:25	DD:HH:MM		DD:HH: MM	n/a	DD:HH: MM

Complaints Register

Table 9: Complaints for the month of September 2024.

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 September 2024.					

General

The particulate matter (PM10) emissions on the North Common Stack exceeded the **monthly limit**; on average emissions figure of **208.3 mg/Nm³** while South Common Stack also exceeded the **monthly limit** on the recorded PM10 monthly average figure of **61.2 mg/Nm³**. The gaseous (NOx & SOx) emissions on the North and South common Stacks were within the **daily limit** during the month of September 2024; refer to graphs above.

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

Kriel Power Station's List of NEMA Section 30/Noncompliance Incidents for 2024/2025 Financial Year

Month	Description of Section 30/Non-Compliance Incidents - including the reference number	Root Cause (s)	Status of S30/Non-Compliance Incident with DEFF (open or closed)	Remarks
September-2024	North Stack High Emissions	SO ₃ plant sulphur flow sensor faulty and SO ₃ dosing pump failure	Open	