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Date:
 03 March 2021

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

Dear Ms Nembilwi

KRIEL POWER STATION'S MONTHLY STACK EMISSIONS REPORT FOR THE MONTH OF OCTOBER 2020

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 October 2020. 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 October 2020

Raw Materials and Products used	Raw Material Type	Units	Maximum Permitted Consumption / Rate (Quantity)	Consumption / Rate in Month of October 2020
	Coal	Tons/month	1 227 600	399 834.50
	Fuel Oil	Tons/month	5 000	4 089.19
Production Rates	Product/ By-Product Name	Unit	Maximum Production Capacity Permitted (Quantity)	Production Rate in Month of October 2020
	Ash	Tons/month	not specified	143.9
	RE PM	kg/MWh	not specified	0.26

1/...

Abatement Technology

Table 2: Abatement Equipment Control Technology for October 2020.

Associated Unit/Stack	Technology Type	Actual Efficiency (%)
		October 2020
Unit 1	ESP	Outage
Unit 2	ESP	99.85%
Unit 3	ESP	Outage
Unit 4	ESP	Outage
Unit 5	ESP	99.86%
Unit 6	ESP	99.56%

Energy Source Characteristics

Table 3: Energy Source Material Characteristics for the month of October 2020




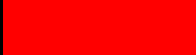
Characteristic	Stipulated Range (Unit)	Monthly Average Content
Sulphur Content	0.6-1.2 (%)	1.01
Ash Content	21-36 (%)	27.90

Monthly Monitor Reliability

Associated Unit/Stack	PM (%)	SO _x (%)	NO _x (%)
North	93.90%	93.39%	93.68%
South	100%	88.71%	88.71%

Emissions Reporting

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

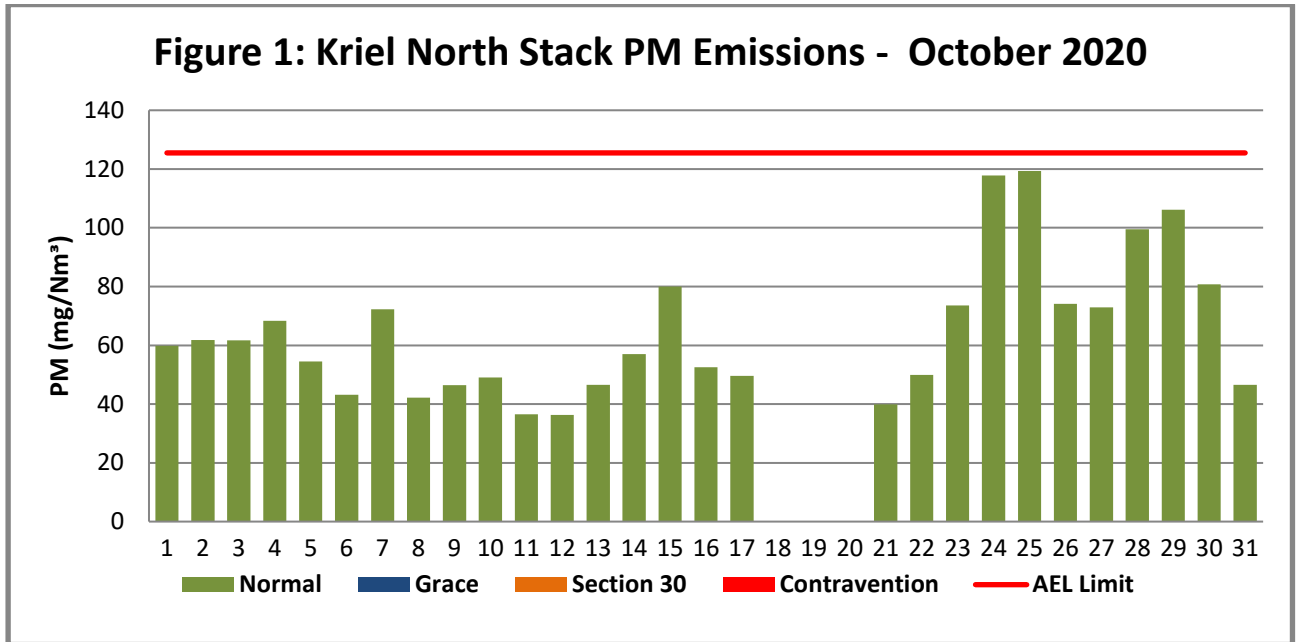


Figure 1: PM emissions (daily averages) for the month of October 2020 against emission limit for the North Stack

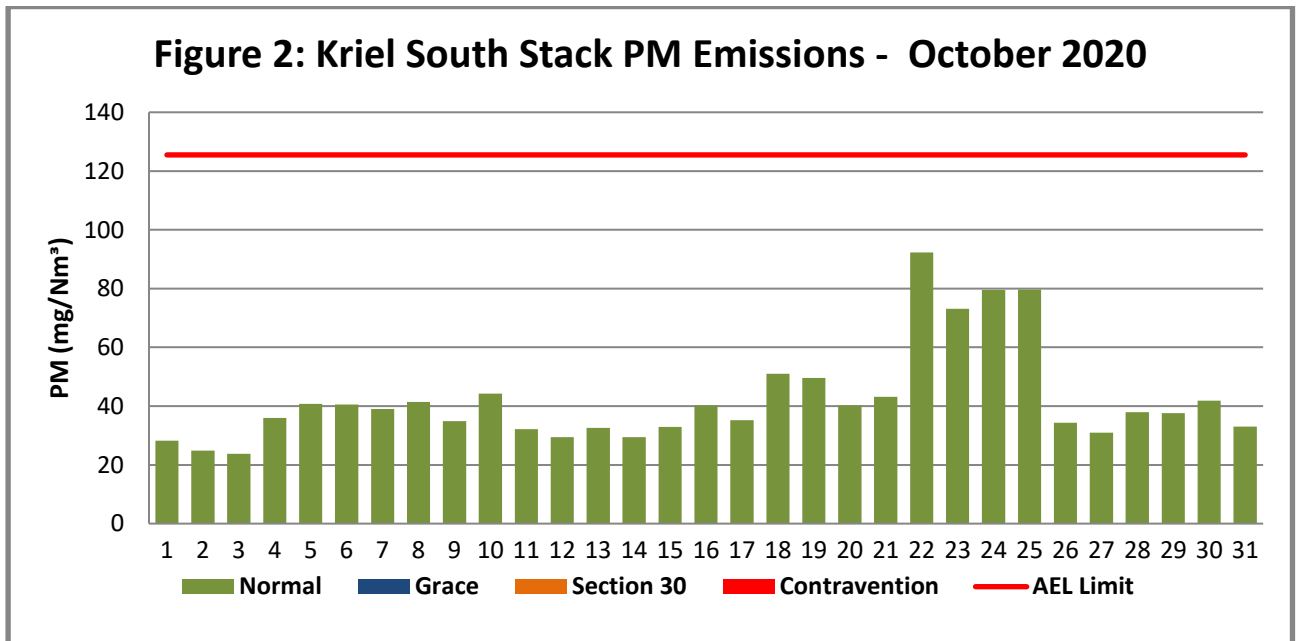


Figure 2: PM emissions (daily averages) for the month of October 2020 against emission limit for the South Stack

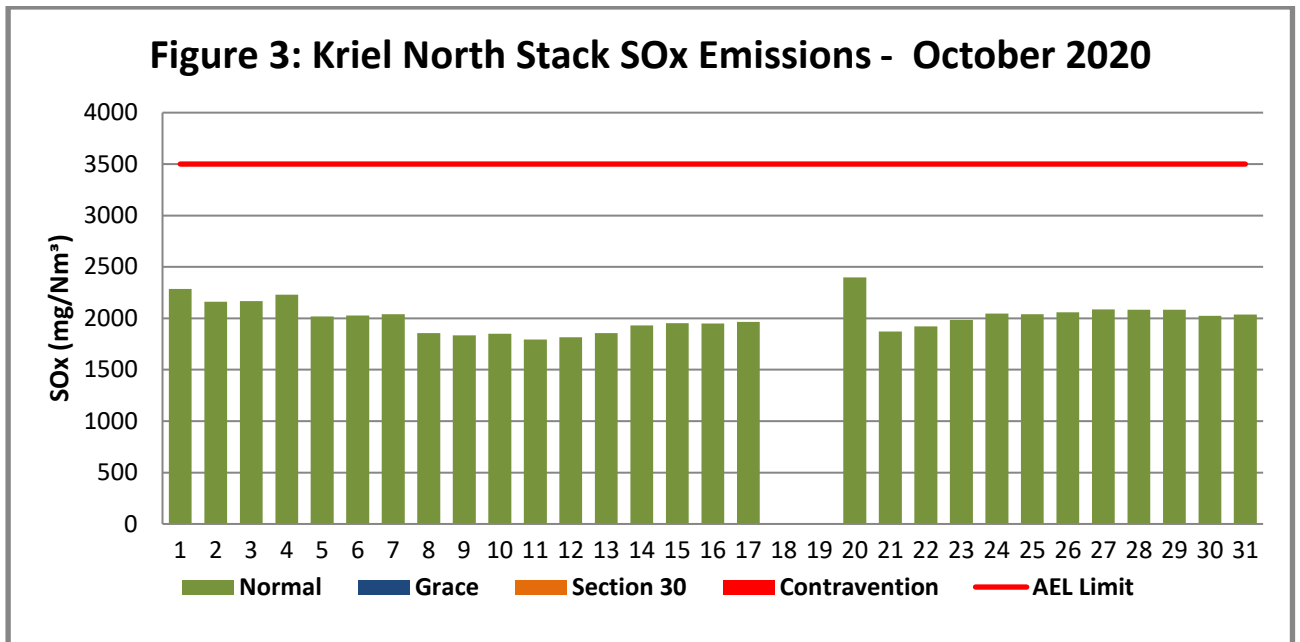


Figure 3. SO₂ emissions (daily averages) for the month of October 2020 against emission limit for the North Stack. The SO_x Limit is 3500mg/Nm³.

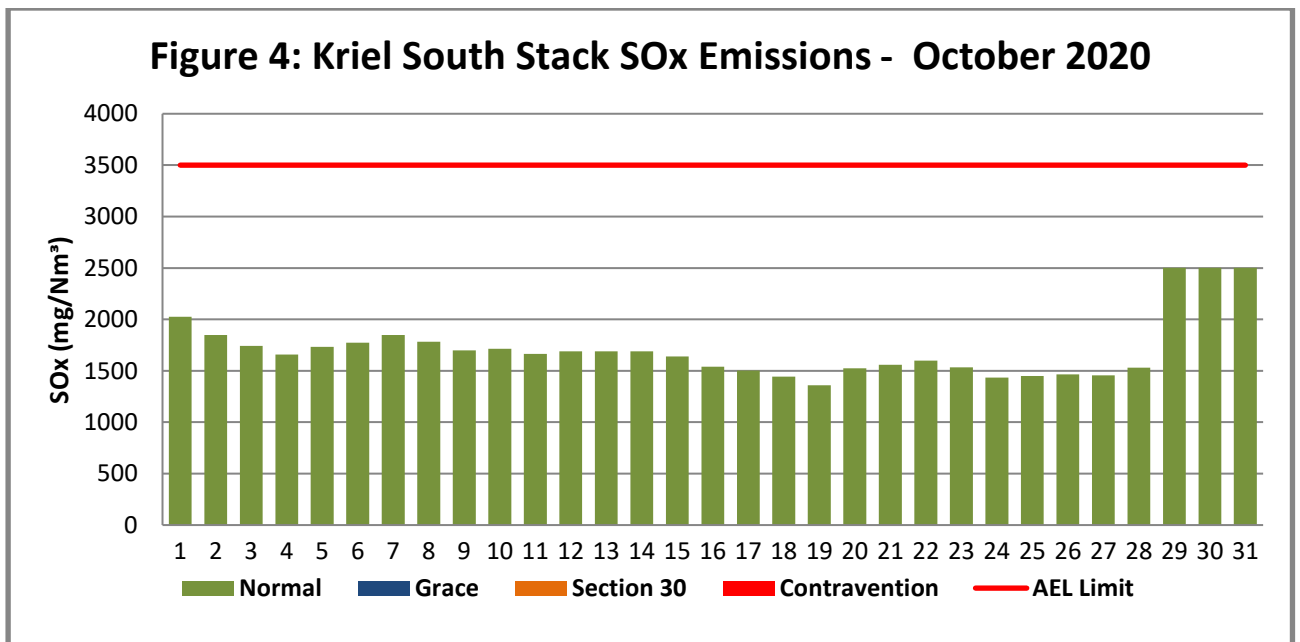


Figure 4. SO₂ emissions (daily averages) for the month of October 2020 against emission limit for the South Stack. The SO_x Limit is 3500mg/Nm³.

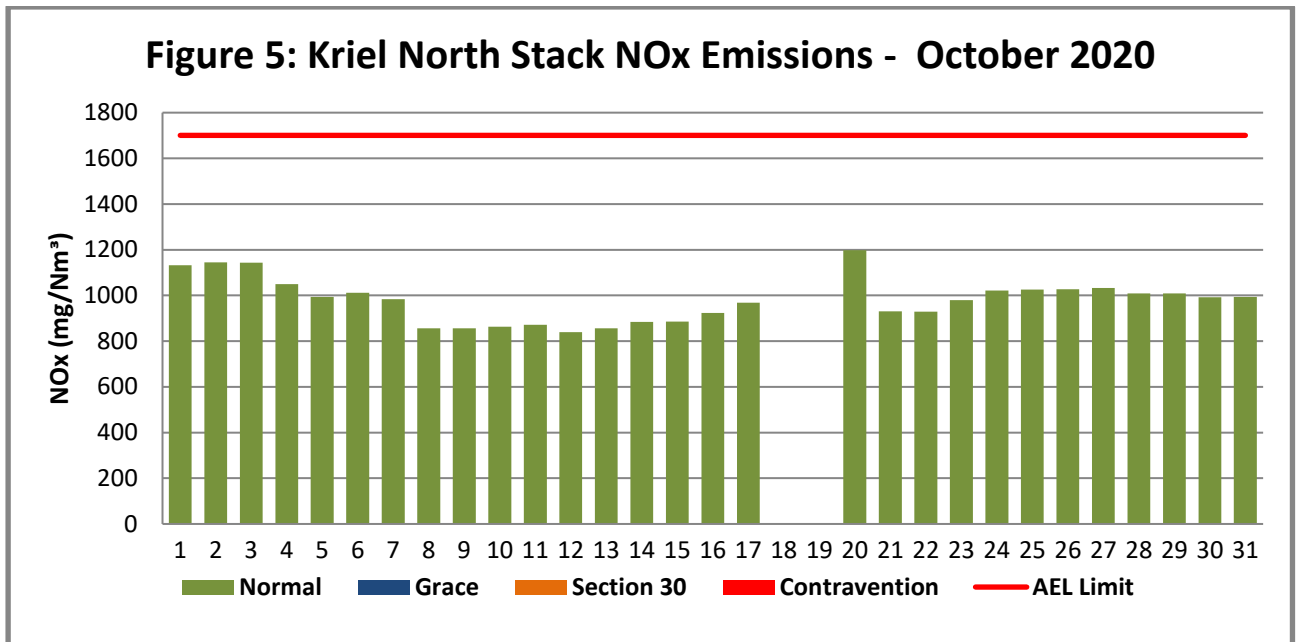


Figure 5. NO₂ emissions (daily averages) for the month of October 2020 against emission limit for the North Stack. The NO_x Limit is 1600mg/Nm³.

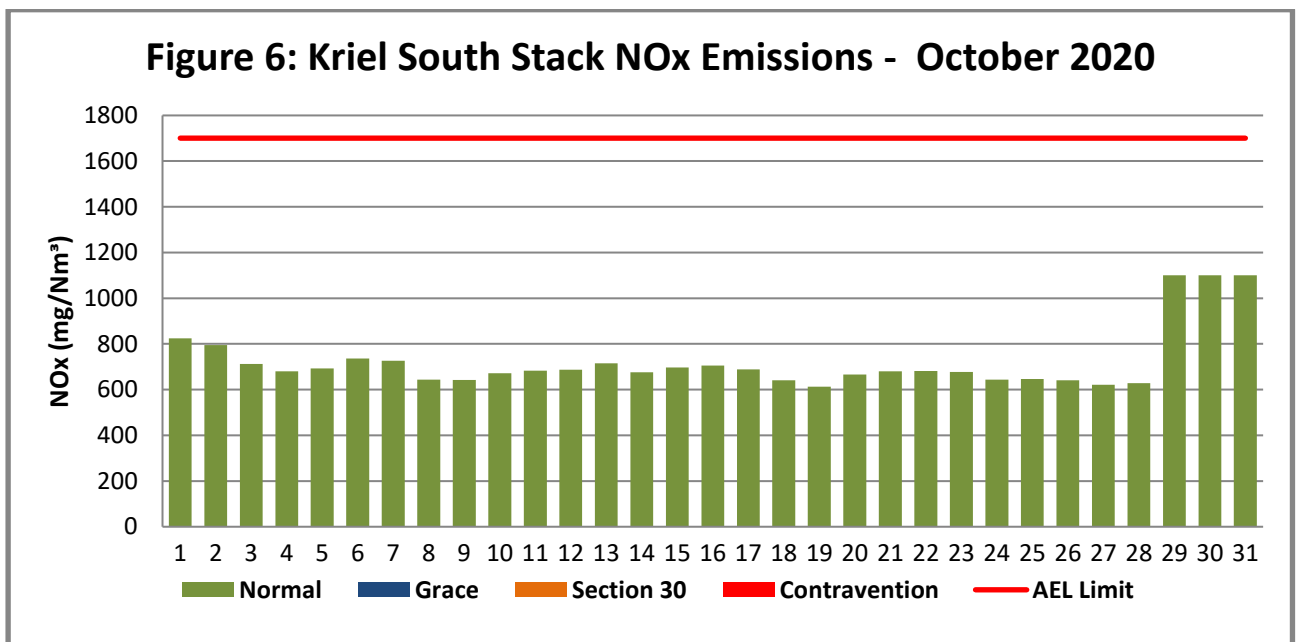


Figure 6. NO₂ emissions (daily averages) for the month of October 2020 against emission limit for the South Stack. The NO_x Limit is 1600mg/Nm³.

Table 4: Monthly tonnages for the month October 2020

Unit	PM (tons)	SO ₂ (tons)	NO ₂ (tons)
SUM	143.9	5 533.2	4 675.7

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

Table 5.1: Operating days in compliance to PM AEL Limit - October 2020

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average PM (mg/Nm ³)
North	28	0	0	0	0	64.2
South	31	0	0	0	0	42.3

Table 5.2: Operating days in compliance to SOx AEL Limit - October 2020

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average SOx (mg/Nm ³)
North	29	0	0	0	0	2 012.4
South	31	0	0	0	0	1 712.9

Table 5.3: Operating days in compliance to NOx AEL Limit - October 2020

Associated Unit/Stack	Normal	Grace	Section 30	Contravention	Total Exceedance	Average NOx (mg/Nm ³)
North	29	0	0	0	0	979.7
South	31	0	0	0	0	723.3

Light up information

Table 6: PM Start-up information for the month of October 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>Unit 2</i>		<i>no event</i>		<i>no event</i>	
Breaker Open (BO)			1:00 AM	2020/10/07	9:50 AM	2020/10/05	11:30 PM	2020/10/02
Draught Group (DG) Shut Down (SD)			DG did not trip or SD	DG did not trip or SD	5:35 PM	2020/10/05	12:25 AM	2020/10/04
BO to DG SD (duration)		DD:HH:MM	n/a	DD:HH:MM	00:07:45	DD:HH:MM	01:00:55	DD:HH:MM
Fires in time			1:00 AM	2020/10/07				
Synch. to Grid (or BC)			1:45 AM	2020/10/07				
Fires in to BC (duration)		DD:HH:MM	00:00:45	DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)				#VALUE!				
Emissions below limit from BC (duration)		DD:HH:MM	n/a	DD:HH:MM		DD:HH:MM		DD:HH:MM

North Stack ...Cont.	<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 2</i>		<i>no event</i>	
Breaker Open (BO)	12:25 PM	2020/10/01	12:25 AM	2020/10/01	4:45 AM	2020/10/17		
Draught Group (DG) Shut Down (SD)	12:50 AM	2020/10/02	7:45 AM	2020/10/01	6:10 PM	2020/10/17		
BO to DG SD (duration)	00:12:25	DD:HH:MM	00:07:20	DD:HH:MM	00:13:25	DD:HH:MM		DD:HH:MM

Fires in time					7:45 PM	2020/10/19		
Synch. to Grid (or BC)					1:45 AM	2020/10/20		
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM	00:06:00	DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)					not > limit	not > limit		
Emissions below limit from BC (duration)		DD:HH:MM		DD:HH:MM	n/a	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>no event</i>		<i>no event</i>		<i>Unit 5</i>		<i>no event</i>	
Breaker Open (BO)					10:45 AM	2020/10/09		
Draught Group (DG) Shut Down (SD)					DG did not trip or SD	DG did not trip or SD		
BO to DG SD (duration)		DD:HH:MM		DD:HH:MM	n/a	DD:HH:MM		DD:HH:MM
Fires in time					10:45 AM	2020/10/09		
Synch. to Grid (or BC)					12:55 PM	2020/10/09		
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM	00:02:10	DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)						#VALUE!		
Emissions below limit from BC (duration)		DD:HH:MM		DD:HH:MM	n/a	DD:HH:MM		DD:HH:MM

South Stack ...Cont.	<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

Complaints Register

Table 7: Complaints for the month of October 2020.

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 October 2020.					

General

The particulate matter (PM10) emissions on the north and south common stacks were within the **monthly limit** during the month of October 2020; North stack recorded the monthly PM10 average emissions figure of **64.2 mg/Nm³** while south stack recorded PM10 monthly average figure of **42.3 mg/Nm³**. The gaseous (NO_x & SO_x) emissions on the north and south common stack were also within the **daily limit** during the month of October 2020; refer to graphs above.

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

Kriel Power Station's List of NEMA Section 30 Incidents for 2020/2021 Financial Year

Month	Description of Section 30 Incidents - including the reference number	Root Cause (s)	Status of S30 Incident with DEFF (open or closed)	Remarks
April - 2020	No section 30 incident reported.			No event to report.
May - 2020	No section 30 incident reported.			No event to report.
June - 2020	No section 30 incident reported.			No event to report.
July - 2020	No section 30 incident reported.			No event to report.
Aug - 2020	Upset condition in Unit 05 exceeded 48 hours grace period.	High hopper levels and ash transportation backlog at Unit 05 due to MCB		Incident processed
Sep - 2020	No section 30 incident reported.			No event to report.
Oct - 2020	No section 30 incident			No event to

	reported.			report.
Nov - 2020				
Dec - 2020				
Jan - 2021				
Feb - 2021				
Mar - 2021				