

Mr. Chakane Sibaya Air Quality Officer Fezile Dabi District Municipality P.O Box 10 Sasolburg 1947

Ref: LRP03PLA000 _024120210511

Dear Mr. Sibaya

Date: 27 May 2024

Enquiries: W de Klerk Tel +27 16 457 5308

LETHABO POWER STATION ANNUAL EMISSION REPORT FOR THE 2020/2021 FINANCIAL YEAR

This serves as Lethabo Power Station's Annual Emission Report as required in terms of section 7.7 in the Atmospheric Emission License issued to Lethabo Power Station.

The emissions reported is for Eskom's 2020/2021 financial year which is from 01 April 2020 to 31 March 2021.

For any additional information please do not hesitate to contact us.

Yours sincerely

Karabo Rakgolela

GENERAL MANAGER



REPORT

Lethabo Power Station

Lethabo Power Station Annual Emission Title:

Report 2020/21

Unique Identifier:

LRP03PLA000 _024120210511

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Environment

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May 2021

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Verified by:

Reviewed by:

W de Klerk

Environmental Officer

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2021-05-25

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BPE Manager

Date: 2021-05-26

2021-05-25

Date: 2021-05-26

Approved by:

H Sewsunker

Engineering Manager

Date: ..2021/05/27

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1 Total Emissions Tonnages for The 2020/2021 Financial Year

The emissions in the table below are for the 2020/2021 financial year.

Power Station	Coal-fired emissions (tons/annum)	Fuel-oil emissions (tons/annum)	Total (tons/annum)
Lethabo Power Station	PM : 9 487	PM: Not Calculated	PM : 9 487
	SO ₂: 204 509	SO ₂ : 557	SO ₂: 205 066
	NO _x : 96 435	NO _x : Not Calculated	NO _x : 96 435

Table 1: Total Emissions for 2020/2021 Financial year

Greenhouse Gases such as CO_2 and N_2O are no longer being reported at station level and is included in the Eskom Greenhouse Gas Emissions Report as per the communication from the National Air Quality Officer (see Annexure A).

Eskom Research Technology & Development (RT&D) calculated figures were used for reporting gaseous emissions. Particulate Matter (PM) are recorded CEMS data.

2 Pollution Emission Trends:

Month	PM (tons)	SO ₂ (tons)	NO _x (tons)
April 2020	672	19746	7148
May 2020	721	22310	8209
June 2020	520	19199	8993
July 2020	675	18321	8665
August 2020	778	19436	9338
September 2020	503	14642	7033
October 2020	695	16817	8070
November 2020	739	12773	7557
December 2020	1149	14742	7884
January 2021	1030	17022	7919
February 2021	905	13072	6845
March 2021	1102	16987	8775

Table 2: Monthly Emissions Trends 2020/2021 financial year coal fired

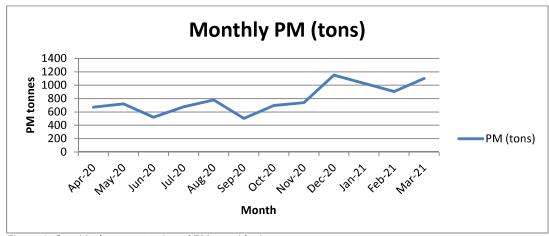


Figure 1: Graphical representation of PM monthly data

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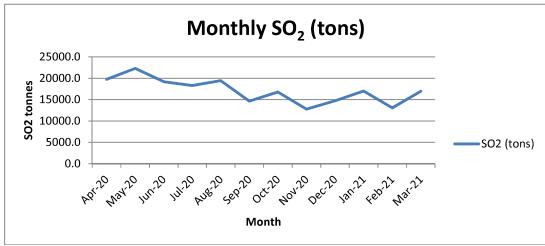


Figure 2: Graphical representation of SO₂ monthly data

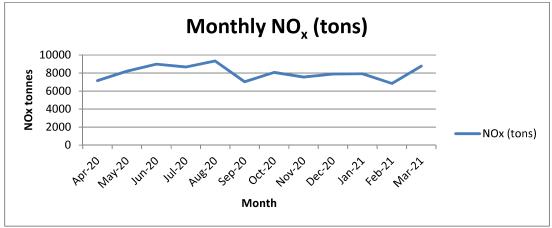


Figure 3: Graphical representation of NO_x monthly data

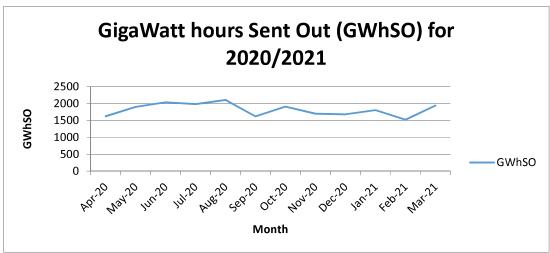


Figure 4: Graphical representation of GigaWatt hours sent out

The emission trends shown in the above table and graphs largely reflect the load of the power station as can be seen in the last graph.

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3 Monitoring data availability

Table 2: General oversight of monitoring data availability for Lethabo Power Station 2020/2021 in terms of the number of full hours per annum that were obtained for the CEMS in question.

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
PM	5541	7557	4999	7691	7636	7417
SO ₂	5821	7642	4722	7620	7718	7315
NO _x	5821	7645	4717	7624	7721	7315

NOTE: Hours reported for when units were online only

4 Legal Compliance (Audit) Report/s

Legal Compliance Audit 2020

Environmental Impact Management Services (Pty) Ltd. (EIMS) was appointed by Eskom to undertake an environmental legal compliance audit of the Lethabo Power Station. The audit was to verify compliance with applicable environmental legislation and regulations relevant to the operations at Lethabo Power Station and to determine the compliance with the relevant licences, permits and authorisations, standards, and procedures applicable to the Lethabo Power Station. Zero non-compliances were identified against the Lethabo Atmospheric Emissions Licence (AEL) or other air quality related legislation,

Legal Notices

Department of Forestry, Fisheries and the Environment (DFFE) issued Lethabo Power Station with a pre-compliance notice on 19th May 2020, following a compliance inspection conducted during August 2019. A response was submitted to the department on the 2nd June 2020 to dispute the allegations made in the pre-compliance notice.

NEMA S30 Incidents

Eight NEMA Section 30 incidents were reported for Particulate Matter (PM) exceedances during the 2020/2021 financial year.

Table 3: NEMA S30 incidents

Incident	Date of Incident	Summary of Event
Unit 2	24 July 2021	Extended start up conditions due to electrostatic precipitator internal failure and SO ₃ plant tripping.
Unit 5	28 August 2021	Extended start up conditions due to Electrostatic Precipitator poor performance as a result of internal failure and SO ₃ plant flooding leading to plant fire which resulted in unpredicted equipment failure.
Unit 5	13 December 2021	Extended start up conditions due to SO ₃ plant gas leak due to corroded turbulator pipe.
*Unit 4	21 December 2021	Extended start up conditions due to defective electrostatic precipitator fields.
*Unit 2	01 January 2021	Extended start up conditions due to sulphur supply line steam jacket leak on the SO ₃ plant.

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Incident	Date of Incident	Summary of Event
Unit 5	02 January 2021	Extended start up conditions due to SO ₃ plant combustion air inlet pipe expansion joint gasket damaged.
*Unit 1	11 January 2021	Extended start up conditions due to SO ₃ plant combustion chamber flooded with sulphur
Unit 3	31 January 2021	Extended start up conditions due to failure on the SO ₃ plant after a converter air pipe expansion joint damage resulting in unpredicted equipment failure.

^{*}Incidents were reported late due to delay in identifying these incidents, permission was granted by DFFE to report these incidents as NEMA S30.

5 Major upgrades or projects:

High Frequency Transformer Upgrades

Unit 3 Electrostatic Precipitators were retrofitted with High Frequency Transformers (HFT) during the recent General Overhaul (GO) outage and was commissioned in January 2021. Following installation challenges were experienced during the optimisation phase of the project however, since optimisation was completed favourable results were observed in reducing the Particulate Matter emissions from Unit 3. Unit 2 HFT installation is targeted to commence August 2021

Pulverised Fuel (PF) Burner Refurbishment

Units 1 and 3 had extended outages, and extensive refurbishment work was completed on the pulverised fuel (PF) burners, with the requirement of improving the combustion process and heat absorption in the furnace. All 36 burners were refurbished on these units where, historically, only partial refurbishments were conducted on the burners during outages.

Due to the inherently high Nitrogen content in Lethabo's coal and no gaseous abatement technology installed, Lethabo already experiences elevated NOx levels. The simultaneous refurbishment of all 36 burners contributed towards the exceedances experienced.

Due to the characteristically high NOx, the station has to operate outside its designed envelope (e.g. biasing mills, reducing airflows to the extent where violation to the Fossil Fuel Firing Requirements (FFFR) occurs, etc.)

To ensure compliance to the Environmental Legislation, abatement technology will be required to reduce NOx emissions to within acceptable limits.

Replacement of PM Monitors:

Lethabo replaced the CEMS PM monitors in November 2019 and therefore the correlation curves had to be done and was concluded in July 2020. The long lead time was due to a combination of plant availability and Covid-19 restrictions. Contractors were not able to access site during the Level 5 lockdown restrictions, and progress was also delayed as a result of contractor employees needing to isolated during the time of correlation tests being planned.

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After the reports were received, a lengthy back-fitting exercise commenced to implement the correct correction factors. Additionally, corrections were made in terms of gaseous emissions figures, for times where the monitors were faulty. All affected reports up to October 2020 had to be resubmitted and therefore there was a change in tonnages as well.

Numerous additional PM exceedances were identified during the back fitting exercise, some of which resulted in the station exceeding the 72-hour grace period during upset, maintenance, start up and shut down conditions. However, it should be noted that the station was not observing the correct emission figures at the time as the monitors were not correlated for the monitors in use, and as such, the station could not act on emission excursions incurred during this period, as it was indicated that the emissions were within acceptable limits. Lethabo Power Station notified the licencing authority of these exceedances on 07 December 2020, when it was identified.

6 Greenhouse gas emissions:

Greenhouse gas emissions such as CO_2 and N_2O are no longer reported at station level and is included in the Eskom Greenhouse Gas Emissions Report as per the communication in Annexure 1.

7 Results of spot measurements or correlation tests

Table 4: Overview of dates of last conducted CEMS verification tests for PM, SO₂ and NO_x. Please see annexure 1 for the results of these tests.

Unit	PM	SO ₂	NO _x
Unit 1	August 2020	August 2020	August 2020
Unit 2	August 2020	August 2020	August 2020
Unit 3	August 2020	August 2020	August 2020
Unit 4	July 2020	July 2020	July 2020
Unit 5	July 2020	July 2020	July 2020
Unit 6	July 2020	July 2020	July 2020

It is noted that the Unit 5 moisture curve was incorrect and inflated during the time of the correlation. It was determined that an average of 6.4% (H_2O) be used from the point of curve expiry until the test is redone. The test has been conducted and awaiting the report with the new curve. After the report is finalised the correct moisture curve will be implemented and back fitted until July 2020, all affected monthly and annual reports will be resubmitted with the backfitted data.

8 NAEIS reporting:

The Nation Atmospheric Emissions Inventory System (NAEIS) report for 2020 reporting period was submitted in March 2021.

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An explanation of all instances where minimum emission standards were exceeded: တ

section 7.3. of the Lethabo Power Station Atmospheric Emission Licence (FDDM-MET-2011-08-P1). Where the 72-hour grace periods were All PM exceedances occurred within the 72-hour grace period for start-ups, shutdown, upset and maintenance conditions as stipulated in exceeded a NEMA S30 was reported and indicated as such in Table 3.

Table 5: Overview of Particulate Matter (PM) daily average limit exceedances for 2020/2021 financial year

Table 5: Particulate Matter Exceedances

NB: Remediation measure and effectiveness – Load losses and Plant renairs were carried out were taken where possible

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Exceedance	Unit	Exceedance Date	Reason for exceedance
20	3	15 April 2020	Unit Light Up
21	9	15 April 2020	ESP Poor Performance
22	-	16 April 2020	ESP Poor Performance
23	က	16 April 2020	Unit Light Up
24	9	16 April 2020	ESP Poor Performance
25	9	17 April 2020	ESP Poor Performance
26	1	18 April 2020	LHI ESP Casing Outage
27	9	18 April 2020	ESP Poor Performance
28	_	19 April 2020	ESP Poor Performance
29	9	19 April 2020	ESP Poor Performance
30	2	20 April 2020	RHO ESP casing fields switched off due to collecting conveyor casing repairs
31	1	21 April 2020	Unit shut down for cold reserve
32	2	21 April 2020	RHO ESP casing fields switched off due to collecting conveyor casing repairs
33	2	22 April 2020	Unit tripped on Black Furnace and Unit Light Up
34	3	22 April 2020	Unit Light Up
35	2	23 April 2020	Unit Light Up
36	3	23 April 2020	Unit Light Up
37	7	24 April 2020	Clean Rapping on all ESP Casings
38	3	24 April 2020	Unit Light Up
39	9	25 April 2020	SO ₃ plant shutdown for converter gas leak repairs
40	1	26 April 2020	Unit Light Up
41	9	26 April 2020	SO ₃ Plant Off
42	-	27 April 2020	Unit Light Up and ESP Poor Performance
43	9	27 April 2020	SO ₃ Plant Challenges
44	1	28 April 2020	ESP Poor Performance
45	1	29 April 2020	ESP Poor Performance and S03 Plant shut down due to fire
46	3	29 April 2020	ESP Poor Performance
47	9	29 April 2020	ESP Poor Performance
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Exceedance	Unit	Exceedance Date	Reason for exceedance
48	~	30 April 2020	ESP Poor Performance and S0 ₃ Plant tripped several times due to combustion chamber high temperature
49	_	02 May 2020	ESP Poor Performance and SO ₃ Plant Challenges
20	9	02 May 2020	ESP Poor Performance
51	_	03 May 2020	ESP Poor Performance and SO ₃ Plant Challenges
52	9	03 May 2020	ESP Poor Performance
53	9	04 May 2020	ESP Poor Performance
54	-	05 May 2020	ESP Poor Performance and SO ₃ Plant Challenges
55	3		ESP Poor Performance
56	9	05 May 2020	ESP Poor Performance
22	-	06 May 2020	ESP Poor Performance and SO ₃ Plant Challenges
58	3	06 May 2020	ESP Poor Performance
29	9	06 May 2020	ESP Poor Performance
09	_	07 May 2020	SO ₃ Plant Challenges
61	3	07 May 2020	ESP Poor Performance
62	9	07 May 2020	Unit Shut Down For Boiler Tube Leak Repairs
63	3	08 May 2020	ESP Poor Performance
64	3	09 May 2020	ESP Poor Performance
65	9	10 May 2020	Unit Light Up
99	9	11 May 2020	Unit Light Up
29	1	15 May 2020	ESP Poor Performance
89	3	15 May 2020	ESP Poor Performance
69	9	15 May 2020	ESP Poor Performance
02	2	16 May 2020	RHO ESP Casing Outage
1.1	3	16 May 2020	ESP Poor Performance and Dust Handling Plant Problems
72	2	17 May 2020	LHI ESP Casing Outage
73	3	17 May 2020	ESP Poor Performance
74	8	18 May 2020	ESP Poor Performance and Dust Handling Plant Problems
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Exceedance	Unit	Exceedance Date	Reason for exceedance
75	3	19 May 2020	ESP Poor Performance
92	9	19 May 2020	Unit Light Up
77	3	20 May 2020	ESP Poor Performance and Dust Handling Plant Problems
78	8	21 May 2020	ESP Poor Performance
62	3	22 May 2020	ESP Poor Performance
80	3	23 May 2020	ESP Poor Performance and Dust Handling Plant Problems
81	3	24 May 2020	ESP Poor Performance and Dust Handling Plant Problems
82	3	25 May 2020	ESP Poor Performance and Dust Handling Plant Problems
83	3	28 May 2020	ESP Poor Performance and Dust Handling Plant Problems
84	3	29 May 2020	ESP Poor Performance and Dust Handling Plant Problems
85	9	29 May 2020	ESP Poor Performance
98	1	30 May 2020	Unit Light Up
87	3	30 May 2020	ESP Poor Performance
88	3	31 May 2020	ESP Poor Performance
68	9	01 June 2020	ESP Poor Performance
06	9	02 June 2020	ESP Poor Performance
91	9	03 June 2020	ESP Poor Performance
92	9	04 June 2020	ESP Poor Performance and Dust Handling Plant Problems
93	3	05 June 2020	ESP Poor Performance
94	9	05 June 2020	ESP Poor Performance
95	4	11 June 2020	LHO and LHI Casings Off
96	9	12 June 2020	ESP Poor Performance
26	9	13 June 2020	ESP Poor Performance and SO ₃ Plant Challenges
86	9	14 June 2020	ESP Poor Performance and SO ₃ Plant Challenges
66	9	16 June 2020	ESP Poor Performance and SO ₃ Plant Challenges
100	9	17 June 2020	ESP Poor Performance
101	3	18 June 2020	SO ₃ Plant Off Due To Sulphur Control Valve Issues.

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Exceedance	Unit	Exceedance Date	Reason for exceedance
102	_	23 June 2020	ESP Poor Performance
103	9	24 June 2020	ESP Poor Performance
104	_	25 June 2020	ESP Poor Performance
105	9	25 June 2020	ESP Poor Performance
106	9	26 June 2020	ESP Poor Performance
107	9	27 June 2020	ESP Poor Performance
108	-	28 June 2020	LHI ESP Casing Outage
109	2	30 June 2020	ESP Poor Performance and Dust Handling Plant Problems
110	9	30 June 2020	ESP Poor Performance
111	_	01 July 2020	ESP Poor Performance and Dust Handling Plant Problems
112	2	01 July 2020	Dust Handling Plant Problems
113	-	02 July 2020	ESP Poor Performance and Dust Handling Plant Problems
114	9	03 July 2020	ESP Poor Performance
115	_	04 July 2020	ESP Poor Performance
116	9	04 July 2020	ESP Poor Performance
117	9	05 July 2020	ESP Poor Performance
118	_	06 July 2020	ESP Poor Performance
119	9	06 July 2020	ESP Poor Performance
120	_	07 July 2020	ESP Poor Performance
121	9	07 July 2020	ESP Poor Performance
122	_	08 July 2020	ESP Poor Performance
123	9	08 July 2020	ESP Poor Performance
124	4	09 July 2020	Unit Shut Down
125	9	09 July 2020	ESP Poor Performance
126	1	10 July 2020	ESP Poor Performance and Dust Handling Plant Problems
127	9	10 July 2020	ESP Poor Performance
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Exceedance	Unit	Exceedance Date	Reason for exceedance
128	9	11 July 2020	ESP Poor Performance
129	1	12 July 2020	LHI ESP Casing Outage
130	9	12 July 2020	ESP Poor Performance
131	9	13 July 2020	ESP Poor Performance
132	9	14 July 2020	ESP Poor Performance
133	9	15 July 2020	ESP Poor Performance
134	2	17 July 2020	Unit Light Up
135	2	18 July 2020	Unit Light Up
136	2	19 July 2020	Unit Light Up
137	2	20 July 2020	Unit Shut Down for Boiler Tube Leak
138	2	22 July 2020	Unit Light Up
139	3	22 July 2020	Monitor Opacity Meter Faulty
140	2	24 July 2020	Unit Light Up
141	3	24 July 2020	ESP Poor Performance
142	2	25 July 2020	Exceedances reported as NEMA Section 30 for extended start up conditions.
143	3	25 July 2020	ESP Poor Performance
144	2	26 July 2020	Exceedances reported as NEMA Section 30 for extended start up conditions.
145	2	27 July 2020	Exceedances reported as NEMA Section 30 for extended start up conditions.
146	2	28 July 2020	Exceedances reported as NEMA Section 30 for extended start up conditions.
147	3	29 July 2020	ESP Poor Performance
148	1	31 July 2020	ESP Poor Performance and Dust Handling Plant Problems
149	3	02 August 2020	ESP Poor Performance
150	3	08 August 2020	ESP Poor Performance
151	9	12 August 2020	ESP Poor Performance
152	3	13 August 2020	ESP Poor Performance
153	1	16 August 2020	ESP Poor Performance
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Exceedance	Unit	Exceedance Date	Reason for exceedance
154	3	16 August 2020	ESP Poor Performance
155	9	17 August 2020	ESP Poor Performance
156	3	18 August 2020	ESP Poor Performance and Dust Handling Plant Problems
157	ဗ	19 August 2020	ESP Poor Performance
158	9	20 August 2020	ESP Poor Performance
159	3	22 August 2020	ESP Casing Outage
160	3	23 August 2020	ESP Casing Outage
161	-	25 August 2020	SO ₃ Plant Challenges
162	2	25 August 2020	Unit Light Up
163	3	25 August 2020	ESP Poor Performance and Dust Handling Plant Problems
164	5	25 August 2020	SO ₃ Plant Challenges. Exceedances reported as NEMA Section 30 for extended start up conditions.
165	1	26 August 2020	SO ₃ Plant Challenges
166	2	26 August 2020	Unit Light Up
167	3	26 August 2020	ESP Poor Performance and Dust Handling Plant Problems
168	5	26 August 2020	SO ₃ Plant Challenges. Exceedances reported as NEMA Section 30 for extended start up conditions.
169	2	27 August 2020	Unit Light Up
170	5	27 August 2020	SO ₃ Plant Challenges. Exceedances reported as NEMA Section 30 for extended start up conditions.
171	9	27 August 2020	ESP Poor Performance
172	2	28 August 2020	ESP Poor Performance
173	3	28 August 2020	Unit Shut Down For GO Outage
174	5	28 August 2020	${\rm SO_3}$ Plant Challenges. Exceedances reported as NEMA Section 30 for extended start up conditions.
175	5	29 August 2020	SO ₃ Plant Challenges. Exceedances reported as NEMA Section 30 for extended start up conditions.

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Exceedance	Unit	Exceedance Date	Reason for exceedance
176	9	29 August 2020	ESP Poor Performance
177	2	30 August 2020	SO ₃ Plant Challenges. Exceedances reported as NEMA Section 30 for extended start up conditions.
178	2	31 August 2020	ESP Poor Performance
179	2	31 August 2020	SO ₃ Plant Challenges. Exceedances reported as NEMA Section 30 for extended start up conditions.
180	2	01 September 2020	ESP Poor Performance
181	_	03 September 2020	ESP Poor Performance
182	2	03 September 2020	SO ₃ Plant Challenges
183	_	05 September 2020	LHI ESP Casing Outage
184	2	06 September 2020	RHI ESP Casing Outage and SO ₃ Plant Challenges
185	2	10 September 2020	ESP Poor Performance
186	2	11 September 2020	ESP Poor Performance
187	2	13 September 2020	LHI ESP Casing Outage
188	9	16 September 2020	Unit Light Up
189	9	17 September 2020	Unit Light Up
190	2	19 September 2020	Unit Shut Down
191	2	22 September 2020	Unit Light Up
192	_	26 September 2020	ESP Poor Performance
193	2	27 September 2020	Unit Light Up
194	2	28 September 2020	ESP Poor Performance
195	2	03 October 2020	RHI ESP Casing Outage
196	_	08 October 2020	Monitor Opacity Meter Faulty
197	2	08 October 2020	RHO ESP Casing Outage
198	2	09 October 2020	LHO ESP Casing Outage
199	2	18 October 2020	RH ESP Casings Poor Performance

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Exceedance	Unit	Exceedance Date	Reason for exceedance
200	2	18 October 2020	RH ESP Casings Poor Performance
201	2	19 October 2020	RH ESP Casings Poor Performance
202	2	21 October 2020	LHO ESP Casing Outage
203	_	26 October 2020	RHO ESP Casing Poor Performance
204	_	28 October 2020	RHO ESP Casing Poor Performance
205	_	29 October 2020	RHO ESP Casing Outage
206	2	29 October 2020	RH ESP Casings Poor Performance
207	_	13 November 2020	ESP Poor Performance
208	4	13 November 2020	ESP Poor Performance
209	_	14 November 2020	RHO Casing Outage
210	1	15 November 2020	LHO Casing Outages
211	4	17 November 2020	ESP Poor Performance
212	2	19 November 2020	SO ₃ Plant Off For Repairs
213	4	19 November 2020	Unit Shut Down
214	2	23 November 2020	LHI and RHI Casings ESP Poor Performance
215	1	24 November 2020	LHO and LHI ESP Casings Poor Performance
216	2	24 November 2020	ESP Poor Performance
217	2	25 November 2020	ESP Poor Performance
218	4	25 November 2020	Unit Light Up
219	1	26 November 2020	ESP Poor Performance
220	2	26 November 2020	ESP Poor Performance
221	1	27 November 2020	ESP Poor Performance
222	9	27 November 2020	ESP Poor Performance
223	2	28 November 2020	RHI and LHI Casings Poor Performance
224	1	29 November 2020	LHO ESP Casing Outage
225	2	29 November 2020	RHI and LHI Casings Poor Performance

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SO₃ Plant Off. Exceedances reported as NEMA Section 30 for extended start up conditions. ESP Poor Performance and Dust Handling Plant Problems ESP Poor Performance and SO₃ Plant Challenges ESP Poor Performance and SO₃ Plant Off ESP Poor Performance and SO₃ Plant Off **LHO and LHI Casings Poor Performance** LHI Casing Poor Performance Reason for exceedance ESP Poor Performance **ESP Poor Performance ESP Poor Performance** ESP Poor Performance. ESP Poor Performance ESP Poor Performance **ESP Poor Performance** ESP Poor Performance **ESP Poor Performance ESP Poor Performance** ESP Poor Performance ESP Poor Performance Unit Shut Down (Trip) ESP Casing Outage ESP Casing Outage 02 December 2020 02 December 2020 05 December 2020 05 December 2020 05 December 2020 06 December 2020 06 December 2020 08 December 2020 08 December 2020 08 December 2020 09 December 2020 11 December 2020 11 December 2020 11 December 2020 12 December 2020 12 December 2020 14 December 2020 14 December 2020 **Exceedance Date** 29 November 2020 02 December 2020 08 December 2020 09 December 2020 10 December 2020 11 December 2020 11 December 2020 12 December 2020 Chit 2 9 9 2 9 α 4 \sim 4 $^{\circ}$ 4 \sim 4 2 \sim 4 2 \sim 4 2 2 Exceedance 236 245 246 228 229 234 235 238 239 240 243 248 249 250 230 232 233 241 242 244 231 247 227 237 251

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Exceedance	Unit	Exceedance Date	Reason for exceedance
252	4	14 December 2020	ESP Poor Performance
253	5	14 December 2020	SO ₃ Plant off. Exceedances reported as NEMA Section 30 for extended start up conditions.
254	_	15 December 2020	ESP Poor Performance
255	2	15 December 2020	ESP Poor Performance and Dust Handling Plant Problems
256	4	15 December 2020	ESP Poor Performance and Dust Handling Plant Problems
257	5	15 December 2020	SO ₃ Plant off. Exceedances reported as NEMA Section 30 for extended start up conditions.
258	9	15 December 2020	ESP Poor Performance
259	_	17 December 2020	LHI ESP Casing Outage
260	2	17 December 2020	ESP Casing Outage
261	9	17 December 2020	SO ₃ Plant Challenges
262	l	18 December 2020	ESP Poor Performance
263	2	18 December 2020	ESP Casing Outage
264	4	18 December 2020	Unit Light Up
265	4	19 December 2020	ESP Poor Performance
566	9	19 December 2020	SO ₃ Plant Challenges
267	2	20 December 2020	ESP Poor Performance
268	4	20 December 2020	ESP Poor Performance. Exceedances reported as NEMA Section 30 for extended start up conditions.
569	2	20 December 2020	ESP Poor Performance
270	2	21 December 2020	ESP Poor Performance
271	4	21 December 2020	ESP Poor Performance. Exceedances reported as NEMA Section 30 for extended start up conditions.
272	4	22 December 2020	ESP Poor Performance. Exceedances reported as NEMA Section 30 for extended start up conditions.
273	9	22 December 2020	ESP Poor Performance
274	_	23 December 2020	ESP Poor Performance
275	_	24 December 2020	ESP Poor Performance
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Exceedance	Unit	Exceedance Date	Reason for exceedance
276	2	26 December 2020	Unit Shut Down (Trip)
277	_	27 December 2020	ESP Poor Performance and Dust Handling Plant Problems
278	5	27 December 2020	Unit Shut Down (Trip)
279	-	30 December 2020	RHO ESP Casing Off
280	2	30 December 2020	Unit Light Up
281	9	30 December 2020	ESP Poor Performance
282	2	31 December 2020	Unit Light Up
283	9	31 December 2020	ESP Poor Performance
284	2	01 January 2021	Unit Light Up
285	2	02 January 2021	ESP Poor Performance. Exceedances reported as NEMA Section 30 for extended start up conditions.
286	9	02 January 2021	SO ₃ Plant Challenges
287	5	03 January 2021	ESP Poor Performance and SO ₃ Plant Challenges
288	_	04 January 2021	Unit Light Up
289	2	04 January 2021	ESP Poor Performance. Exceedances reported as NEMA Section 30 for extended start up conditions.
290	4	04 January 2021	Unit Light Up
291	9	04 January 2021	Poor ESP Performance
292	_	05 January 2021	SO ₃ Plant Challenges
293	2	05 January 2021	ESP Poor Performance
294	9	05 January 2021	Poor ESP Performance
295	2	06 January 2021	ESP Poor Performance and SO ₃ Plant Tripping
296	9	07 January 2021	Poor ESP Performance
297	1	08 January 2021	SO ₃ Plant Challenges. Exceedances reported as NEMA Section 30 for extended start up conditions.
298	2	08 January 2021	ESP Poor Performance

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Exceedance	Unit	Exceedance Date	Reason for exceedance
299	_	09 January 2021	SO ₃ Plant Challenges. Exceedances reported as NEMA Section 30 for extended start up conditions.
300	9	09 January 2021	Poor ESP Performance
301	_	10 January 2021	SO ₃ Plant Challenges. Exceedances reported as NEMA Section 30 for extended start up conditions.
302	2	10 January 2021	ESP Poor Performance
303	3	10 January 2021	Unit Light Up
304	9	10 January 2021	Poor ESP Performance
305	_	11 January 2021	ESP Poor Performance
306	က	11 January 2021	Unit Light Up
307	9	11 January 2021	Unit Light Up
308	_	12 January 2021	Unit Shut Down for Mini GO Outage
309	2	12 January 2021	ESP Poor Performance
310	3	13 January 2021	SO ₃ Plant Challenges
311	9	13 January 2021	ESP Poor Performance and Manual Rapping Implemented
312	3	14 January 2021	SO ₃ Plant Challenges
313	2	15 January 2021	RHO and LHI Casing Poor Performance
314	9	15 January 2021	ESP Poor Performance and Manual Rapping Implemented
315	2	16 January 2021	ESP Poor Performance
316	3	16 January 2021	Unit Light Up
317	3	17 January 2021	Unit Light Up and SO ₃ Plant Off
318	2	17 January 2021	LHO ESP Casing Outage
319	က	18 January 2021	Unit Light Up and SO ₃ Plant Off
320	9	18 January 2021	LHO Casing Poor Performance and RHI ESP Casing Outage
321	9	19 January 2021	RHI ESP Casing Outage
322	2	20 January 2021	ESP Poor Performance

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Exceedance	Unit	Exceedance Date	Reason for exceedance
323	2	22 January 2021	ESP Poor Performance
324	4	22 January 2021	ESP Poor Performance and Manual Rapping Implemented
325	5	22 January 2021	Poor ESP Performance
326	9	22 January 2021	ESP Poor Performance and Manual Rapping Implemented
327	2	23 January 2021	RHI ESP Casing Poor Performance
328	2	23 January 2021	Poor ESP Performance
329	2	26 January 2021	ESP Poor Performance and Manual Rapping Implemented
330	9	26 January 2021	ESP Poor Performance
331	2	27 January 2021	ESP Poor Performance and Manual Rapping Implemented
332	9	28 January 2021	ESP Poor Performance and Manual Rapping Implemented
333	3	29 January 2021	Unit Light Up
334	9	29 January 2021	ESP Poor Performance
335	2	30 January 2021	ESP Poor Performance
336	3	30 January 2021	Unit Light Up
337	3	31 January 2021	Unit Light Up. Exceedances reported as NEMA Section 30 for extended start up conditions.
338	3	01 February 2021	Unit Light Up. Exceedances reported as NEMA Section 30 for extended start up conditions.
339	5	01 February 2021	ESP Poor Performance and Manual Rapping Implemented
340	9	01 February 2021	ESP Poor Performance and Manual Rapping Implemented
341	9	02 February 2021	ESP Poor Performance
342	3	03 February 2021	ESP Poor Performance, Manual Rapping Implemented and Dust Handling Plant Problems
343	2	04 February 2021	ESP Poor Performance
344	9	04 February 2021	ESP Poor Performance
345	2	05 February 2021	ESP Poor Performance and Manual Rapping Implemented
346	3	05 February 2021	ESP Poor Performance and Manual Rapping Implemented
347	5	05 February 2021	ESP Poor Performance and Manual Rapping Implemented
348	9	05 February 2021	ESP Poor Performance and Manual Rapping Implemented

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Exceedance	Unit	Exceedance Date	Reason for exceedance
349	9	06 February 2021	ESP Poor Performance
350	5	07 February 2021	ESP Poor Performance
351	2	08 February 2021	Poor ESP Performance
352	3	08 February 2021	ESP Poor Performance
353	4	08 February 2021	SO ₃ Plant Challenges
354	9	08 February 2021	ESP Poor Performance
355	2	09 February 2021	ESP Poor Performance and manual rapping
356	4	09 February 2021	SO ₃ Plant Challenges
357	9	09 February 2021	ESP Poor Performance
358	4	10 February 2021	SO ₃ Plant Challenges
329	2	10 February 2021	ESP Poor Performance and Dust Handling Plant Problems
360	2	11 February 2021	ESP Poor Performance
361	5	11 February 2021	ESP Poor Performance
362	3	12 February 2021	ESP Poor Performance and Dust Handling Plant Problems
363	3	13 February 2021	Unit Shut Down (Trip)
364	3	14 February 2021	Unit Light Up
365	2	15 February 2021	ESP Poor Performance and Manual Rapping Implemented
366	2	16 February 2021	ESP Poor Performance and Manual Rapping Implemented
367	2	17 February 2021	ESP Poor Performance and Manual Rapping Implemented
368	2	18 February 2021	ESP Poor Performance and Manual Rapping Implemented
369	3	18 February 2021	ESP Poor Performance and Manual Rapping Implemented
370	2	18 February 2021	Unit Shut Down
371	2	19 February 2021	ESP Poor Performance
372	4	19 February 2021	ESP Poor Performance
373	2	19 February 2021	Unit Shut Down
374	9	19 February 2021	ESP Poor Performance
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Exceedance	Unit	Exceedance Date	Reason for exceedance
375	2	21 February 2021	LHO ESP Casing Outage
376	3	21 February 2021	ESP Poor Performance and HFT Optimisation
377	9	21 February 2021	ESP Poor Performance
378	ဂ	22 February 2021	ESP Poor Performance
379	2	24 February 2021	ESP Poor Performance
380	3	24 February 2021	ESP Poor Performance and Manual Rapping Implemented
381	2	25 February 2021	ESP Poor Performance and Manual Rapping Implemented
382	3	25 February 2021	ESP Poor Performance
383	5	26 February 2021	Unit Light Up
384	2	27 February 2021	ESP Poor Performance
385	3	27 February 2021	ESP Casing Outage
386	5	27 February 2021	Unit Light Up
387	3	28 February 2021	ESP Casing Outage
388	5	28 February 2021	Unit Light Up
389	9	01 March 2021	Unit Light Up
390	9	02 March 2021	Unit Light Up
391	2	03 March 2021	ESP Poor Performance
392	3	03 March 2021	SO ₃ Plant Tripped
393	2	04 March 2021	LHI and RHI ESP Casings Poor Performance
394	2	06 March 2021	LHI ESP Casing Outage
395	9	06 March 2021	ESP Poor Performance
396	2	07 March 2021	RHI ESP Casing Outage
397	2	09 March 2021	LHI ESP Casing Outage
398	3	09 March 2021	ESP Poor Performance and Manual Rapping Implemented
399	2	10 March 2021	ESP Poor Performance
400	2	12 March 2021	ESP Poor Performance and SO ₃ Plant Challenges
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Exceedance	Unit	Exceedance Date	Reason for exceedance
401	2	13 March 2021	ESP Poor Performance and Manual Rapping Implemented
402	င	14 March 2021	ESP Poor Performance
403	2	15 March 2021	ESP Poor Performance and Manual Rapping Implemented
404	က	15 March 2021	RH Casings Tripped
405	ဗ	16 March 2021	SO ₃ Plant Challenges
406	3	18 March 2021	SO ₃ Plant Challenges and Manual Rapping Implemented
407	2	20 March 2021	ESP Poor Performance
408	က	20 March 2021	ESP Poor Performance
409	5	20 March 2021	SO ₃ Plant Off For Gasket Repair
410	2	21 March 2021	ESP Poor Performance and Manual Rapping Implemented
411	3	21 March 2021	ESP Poor Performance
412	5	21 March 2021	SO ₃ Plant Off For Gasket Repair
413	2	23 March 2021	ESP Poor Performance and Manual Rapping Implemented
414	5	23 March 2021	SO ₃ Plant Off For Gasket Repair
415	3	24 March 2021	SO ₃ Plant Challenges
416	5	24 March 2021	SO ₃ Plant Off For Gasket Repair
417	2	25 March 2021	ESP Poor Performance and SO ₃ Plant Challenges
418	3	25 March 2021	SO ₃ Plant Challenges and Manual Rapping Implemented
419	9	25 March 2021	ESP Poor Performance
420	2	26 March 2021	ESP Poor Performance and Manual Rapping Implemented
421	4	26 March 2021	ESP Poor Performance
422	2	26 March 2021	SO ₃ Plant Tripped
423	4	27 March 2021	ESP Poor Performance
424	2	27 March 2021	SO ₃ Plant Off For Repairs
425	3	29 March 2021	ESP Poor Performance
426	4	29 March 2021	SO ₃ Plant Challenges and Manual Rapping Implemented
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Table 6: Overview of NOx daily average limit exceedances for 2020/2021 financial year

Table 6: NO_x Exceedances

NB: Remediation measure and effectiveness - Load losses and Plant repairs were carried out were taken where possible.

Exceedance Thit Exceedance Date	Excodance Date		Dosean for exceedance
\dashv	EXCECU	IIIce Dale	Neason 101 exceedance
5 10 A	10 A	10 April 2020	No NOx abatement technology installed
29 /	767	29 April 2020	No NOx abatement technology installed
6 29	29	29 April 2020	No NOx abatement technology installed
6 12	12	12 May 2020	No NOx abatement technology installed
4 17	17	17 May 2020	No NOx abatement technology installed
0 9	, O	01 June 2020	No NOx abatement technology installed
70 9	0	02 June 2020	No NOx abatement technology installed
0 9	0	03 June 2020	No NOx abatement technology installed
9	0	04 June 2020	No NOx abatement technology installed
9		05 June 2020	No NOx abatement technology installed
9		06 June 2020	No NOx abatement technology installed
9		07 June 2020	No NOx abatement technology installed
0 9	0	08 June 2020	No NOx abatement technology installed
3		01 July 2020	CEMS Monitor Faulty

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Exceedance	Unit	Exceedance Date	Reason for exceedance
15	3	02 July 2020	CEMS Monitor Faulty
16	2	15 July 2020	No NOx abatement technology installed
17	9	27 July 2020	No NOx abatement technology installed
18	2	28 July 2020	No NOx abatement technology installed
19	9	09 August 2020	No NOx abatement technology installed
20	9	10 August 2020	No NOx abatement technology installed
21	9	11 August 2020	No NOx abatement technology installed
22	9	12 August 2020	No NOx abatement technology installed
23	9	31 January 2021	No NOx abatement technology installed
24	9	01 February 2021	No NOx abatement technology installed
25	3	06 February 2021	No NOx abatement technology installed
56	3	07 February 2021	No NOx abatement technology installed
27	က	08 February 2021	No NOx abatement technology installed
28	3	09 February 2021	No NOx abatement technology installed
29	3	16 February 2021	No NOx abatement technology installed
30	3	17 February 2021	No NOx abatement technology installed
31	3	17 March 2021	No NOx abatement technology installed
32	9	24 March 2021	No NOx abatement technology installed
33	3	25 March 2021	No NOx abatement technology installed
34	9	25 March 2021	No NOx abatement technology installed
35	9	26 March 2021	No NOx abatement technology installed
36	9	27 March 2021	No NOx abatement technology installed
37	9	28 March 2021	No NOx abatement technology installed
38	9	29 March 2021	No NOx abatement technology installed
39	9	30 March 2021	No NOx abatement technology installed
40	9	31 March 2021	No NOx abatement technology installed

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10 ABBREVIATIONS

Abbreviation	Description
CEMS	Continuous Emissions Monitoring System
CO ₂	Carbon Dioxide
DFFE	Department of Forestry, Fisheries and the Environment
DHP	Dust Handling Plant
ESP	Electrostatic Precipitator
FD	Forced Draft
FY	Financial Year
GHG	Green House Gases
ID	Induced Draft
LH	Left Hand
LHI	Left Hand Inner
LHO	Left Hand Outer
N ₂ O	Nitrous Oxide (dinitrogen oxide)
NAEIS	Nation Atmospheric Emissions Inventory System
NEMA	National Environmental Management Act
NO _x	Nitrogen Oxides
O ₂	Oxygen
PF	Pulverised Fuel
PLC	Programmable Logic Controller
PM	Particulate Matter
PTW	Permit To Work
RH	Right Hand
RHI	Right Hand Inner
RHO	Right Hand Outer
RT&D	Research, Testing and Development Department
SO ₂	Sulphur Dioxide
SO ₃	Sulphur Trioxide
S30	NEMA Section 30 Incident
SSC	Submerged Scraper Conveyor
VSD	Variable Speed Drive

11 List of Annexures

Annexure A	DEA GHG Reporting and AELs Exclusion of CO2 from monthly
	reports

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Annexure A - DEA GHG Reporting and AELs Exclusion of CO2 from monthly reports



Atmospheric Licensing Authorities Atmospheric Emission License Holders

Dear All,

RE: Clarity on Greenhouse Gas Emission Reporting - According to the National Environmental Management: Air Quality Act. 39 of 2004 (AQA).

This letter serves to Inform Atmospheric Emission License (AEL) holders and remind Atmospheric Emission Licensing Authorities (AELA) about the agreement reached on reporting of greenhouse gas emissions for the purpose of meeting AEL reporting requirements and the country's reporting requirements to national climate change obligations.

Section 43 of the AQA stipulates the contents of a provisional atmospheric emission license and an atmospheric emission license. In this regard S43 (1)(i); states that — A provisional atmospheric emission license and an atmospheric emission license must specify: greenhouse gas emission measurement and reporting requirements. In the first quarter of the financial year 2017/18 MINTEC and MINMEC management meetings, it was agreed that all AELs shall stipulate the following "Reporting in terms of S43 (1)(i) shall be done in accordance with the National Greenhouse Gas Reporting Regulations".

In light of this, AELs will be reviewed (according to the schedule prepared by the AELs) to include this same reporting phrase. The reporting phrase will be inserted into existing AELs that are due for renewal during the renewal process. Finally, the AEL application template has been amended to include this phrase.

Yours Sincerely,

Dr Thuli Khumalo

National Air Quality Officer

Date: 15 May 2019