

Dr Johan Schoeman
Air Quality Management Services
Eden District Municipality
PO Box 12
GEORGE
6530

Date:
12 October 2023

Enquiries:
021 573 6162

Ref: GOU/2023/09

Dear Dr Schoeman

GOURIKWA POWER STATION'S MONTHLY EMISSIONS REPORT FOR THE MONTH OF SEPTEMBER 2023

This serves as the monthly report required in terms of Section 9 in Gourikwa Power Station's Atmospheric Emission License (WCED013). The report addresses the period from 1-30 September 2023 and covers Particulate Matter, CO, SO₂ and NO_x (as NO₂) emissions.

1. Raw Materials and Products

Table 1: Quantity of Raw Materials and Products used/produced in Normal Operation

Raw Materials and Products used	Raw Material Type	Unit	Maximum Permitted Consumption/ Rate (Quantity)	Total consumption for the Month in litres
	Fuel Oil/diesel	Tons/hour/unit	40	44 589 587.73
Production Rates	Product/ By-Product Name	Unit	Maximum Production Capacity Permitted (Quantity)	Total Production/Power sent out for the Month (MWh)
	Energy	MWh/unit	170	145 054.00
	Fuel use per hour per unit (L)	Fuel Efficiency: Litre per MWh		
	Unit 11: 35 987.05 Unit 12: 37 048.86 Unit 13: 33 304.61 Unit 21: 36 596.09 Unit 22: 36 640.83			Unit 11:314.08 Unit 12:299.66 Unit 13:305.00 Unit 21:308.12 Unit 22:311.27

2. Abatement Technology

Table 2: Abatement Equipment Control Technology utilisation for the month September

Associated Unit/Stack	Technology Type	Actual Utilisation (%) for the month
Unit 11	Low NOx burners	100%
Unit 12	Low NOx burners	100%
Unit 13	Low NOx burners	100%
Unit 21	Low NOx burners	100%
Unit 22	Low NOx burners	100%

3. Emissions Reporting

Table 3: Total monthly emission rates and Licence limits

	Date & time	CO (mg/N m ³)	NO _x (mg/Nm ³)	PM (mg/Nm ³)	SO ₂ (mg/Nm ³)
Hourly Licence Limit mg/Nm³			250	50	500
Unit 11	2023/09/01	1.22	153.77	0.16	1.93
	2023/09/02	1.53	130.73	0.15	1.94
	2023/09/03	1.04	125.94	0.14	1.39
	2023/09/04	1.01	127.32	0.16	1.39
	2023/09/05	0.91	128.88	0.15	0.98
	2023/09/06	0.88	138.72	0.16	1.26
	2023/09/07	0.98	132.7	0.17	0.59
	2023/09/08	1.26	128.33	0.13	0.33
	2023/09/11	0.52	138.67	0.15	0.13
	2023/09/12	0.8	136.26	0.16	1.54
	2023/09/13	0.75	132.52	0.2	0.15
	2023/09/22	0.58	138.2	0.12	0.3
	2023/09/23	1.02	158.71	0.14	0.51
	2023/09/24	0.79	132.54	0.12	1.32
	2023/09/25	0.5	124	0.2	0.9
	2023/09/26	0.83	129.33	0.13	1.17
	2023/09/27	0.74	137.85	0.13	1.18
	2023/09/28	0.86	134.71	0.17	2.21
Unit 12	2023/09/01	2.54	200.08	0	0.23
	2023/09/02	5.33	188.88	0	0.19

	2023/09/03	2.42	200.41	0	0.45
	2023/09/04	2.71	203.16	0	0.22
	2023/09/05	2.05	207.65	0	0.1
	2023/09/06	1.92	200.73	0	0.19
	2023/09/07	2.94	188.88	0	0.75
	2023/09/08	5.05	178.25	0	0.4
	2023/09/11	0.87	214.86	0	0.17
	2023/09/12	2.95	210.89	0	0.34
	2023/09/13	8.75	174.5	0	0
	2023/09/19	1.6	199	0	0.4
	2023/09/22	2.4	200.2	0	0.04
	2023/09/23	1.74	205.71	0	0.014
	2023/09/24	3.31	189.5	0	0.49
	2023/09/25	0	193	0	0
	2023/09/26	1.57	202.67	0	0.17
	2023/09/27	7.13	184.69	0	0.62
	2023/09/28	3.98	203.64	0	0.9
Unit 13	2023/09/01	0.35	145	0	1.05
	2023/09/02	0.98	132.44	0	1.61
	2023/09/03	1.07	135.22	0	0.84
	2023/09/04	0.8	134.59	0	0.9
	2023/09/05	1.5	138.67	0	1.32
	2023/09/06	1.7	146.67	0	1.23
	2023/09/07	1.32	141.67	0	1.03
	2023/09/08	2.2	139.5	0	1.03
	2023/09/10	3.04	147.56	0	1.09
	2023/09/11	7.19	147	0	2.7
	2023/09/12	5.99	147.94	0	1.62
	2023/09/19	4.5	166	0	2
	2023/09/22	3.78	152	0	0.22
	2023/09/23	2.8	157.57	0	0.9
	2023/09/24	3.19	147.07	0	1.42
	2023/09/25	3.8	140	0	0.6
	2023/09/26	3.63	149	0	1.03
	2023/09/27	8.98	142.23	0	1.09
	2023/09/28	2.95	156.4	0	0.83

Unit 21	2023/09/01	21.4	220.63	0.25	0.5
	2023/09/02	23.86	204	0.36	1.03
	2023/09/03	26.46	219.21	0.35	0.34
	2023/09/04	30.09	208.61	0.44	1.06
	2023/09/05	27.36	228	0.09	1.08
	2023/09/06	23.72	225.27	0.24	0.93
	2023/09/07	25.03	222.9	0.38	1
	2023/09/08	26.97	220.33	0.37	0.7
	2023/09/11	9.5	212.29	0.3	0.94
	2023/09/12	14.81	207.31	0.38	0.51
	2023/09/13	19.9	218	0	0.4
	2023/09/22	16.58	200	0.32	1.66
	2023/09/23	13.14	195	0.23	0.53
	2023/09/24	12.86	184.42	0.15	0.46
	2023/09/25	13.4	195	0	1
	2023/09/26	11.8	205	0.3	0.5
	2023/09/27	16.6	177.62	0.35	0.45
	2023/09/28	16.42	211	0.39	1.55
Unit 22	2023/09/01	1.28	169.46	0	1.04
	2023/09/02	1.5	144.47	0	0.86
	2023/09/03	1.63	146.42	0	0.68
	2023/09/04	1.63	149.13	0	0.82
	2023/09/05	1.08	149	0	0.56
	2023/09/06	0.83	157.09	0	0.35
	2023/09/07	0.93	153.77	0	0.33
	2023/09/08	1.18	140	0	0.73
	2023/09/10	1.49	157.4	0	1.1
	2023/09/11	1.2	153.57	0	0.59
	2023/09/12	1.27	160.33	0	0.67
	2023/09/13	1.1	167	0	0.65
	2023/09/24	1.26	156.27	0	0.55
Total Emission mass (tons)		10.77	153.464	0	0.541

Table 4: Each unit and respective days operating under normal operation

Unit	Hours operating under normal operation	Hours of start-up and shut-down	Total
11	189	74	263
12	189	70	259
13	189	74	263
21	181	71	252
22	153	53	206
Total	901	342	1243

Table 5: Monitoring Equipment-Continuous Emission Monitoring System (CEMS) availability

Associated Unit/Stack	Technology Type	Actual Utilisation (%) for the month
Unit 11	CEMS	100%
Unit 12	CEMS	100%
Unit 13	CEMS	100%
Unit 21	CEMS	100%
Unit 22	CEMS	100%

Note: Continuous Emission Monitoring System (CEMS) is always online unless a fault is reported. The system auto calibrates every four (4) hours and raises an alarm if auto calibration is out of spec. Onsite technicians calibrate the system with calibration gas annually.

Table 6: Average Point Source Emissions released during start-up, maintenance and shut-down for the month of September 2023 in mg/Nm³

Unit	NO _x	SO ₂
11	126.08	1.95
12	176.6	1.62
13	140.41	2.06
21	175.25	1.95
22	155.45	1.71

4. Comments on the performance and availability of each unit

- All 5 units were available to generate power for the month of September 2023
- **Leak Detection and Repair programme-** No leaks were reported during September 2023.

5. Load Factor: 27.27%

6. Complaints Register

Table 7: Complaints

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
<i>None</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>

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

For any related queries, please do not hesitate to contact me on 021 573 6162

Yours sincerely



Pamela Mrubata
GOURIKWA POWER STATION