

From: [Travis Ritchie](#)
To: ["Elizabeth.Barker@gov.yk.ca"](mailto:Elizabeth.Barker@gov.yk.ca)
Subject: Air Emissions Permit 60-010 Annual Report 2020
Date: March 31, 2021 4:42:32 PM
Attachments: [2020 Annual Emissions Permit Report.pdf](#)
[image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)
[image005.png](#)

Hello Elizabeth,

Please find our 2020 annual report for air emissions Permit 60-010 attached.

If, after your review, you have any questions, comments, or concerns with the report please let me know.

Thank you for your consideration.

Regards,

Travis



Travis Ritchie P.Biol.

Manager - Environment, Assessment, & Licensing

Telephone: 867-393-5350 | Mobile: 867-333-0300



SustainableElectricityCompany™



This message may contain confidential or privileged material. Any use of this information by anyone other than the intended recipient is prohibited. If you have received this message in error, please immediately reply to the sender and delete this information from your computer.



Please consider the environment before printing this e-mail

SM-YEC-20141008

March 31, 2021

File: 2515.03.01

Elizabeth Barker, Environmental Protection Analyst
Yukon Government, Department of Environment, Standards & Approvals Section
Box 2703
Whitehorse, Yukon Y1A 2C6

(via email to: elizabeth.barker@gov.yk.ca)

Dear Ms. Barker,

RE: AIR EMISSIONS PERMIT NO. 60-010 – PART 6 – 2020 ANNUAL OPERATIONAL REPORTING

Pursuant to the above referenced permit and its monitoring/reporting requirements I am pleased to provide the following information regarding our electricity generation using diesel and natural gas in 2020.

1. The attached table summarizes the total annual operating hours and electricity produced for all sources at each site, the emission rates for various common air contaminants, and the estimated total emissions from each unit based on their emission rates and hours operated.
2. The estimated percentage of operational hours where each source was operated, but where no electricity was produced is very difficult to estimate for various reasons. A rough estimate suggests up to 5% of the reported 2020 engine run times could account for average unit operation with no electricity generation.
3. All applicable maintenance conducted on the fleet in 2020 was in accordance with the unit manufacturer's instructions and recommendations. No overhauls were completed in 2020.
4. The accounting methodology for fuel inventory at the natural gas generating station is based on a mass balance of fuel delivered, fuel in storage, fuel utilized for power production and heating, and any fuel released during a venting episode or spill/release. For the purposes of monitoring and reporting under the air emissions permit, Yukon Energy considers all uncombusted fuel vented and/or otherwise released/spilled as fugitive emissions. Fugitive emissions of methane in 2020 associated with venting episodes and direct releases to onsite containment totalled approximately 437 kg and 0 kg, respectively (based on 505 deliveries totaling 8,015,891 kg of LNG delivered). All venting emissions were associated with fuel deliveries, which each result in an estimated release of roughly 0.8 kg of LNG depending on each discrete delivery volume.
5. Contingency diesel engines situated at the Whitehorse Rapids Generating Station and Faro Generating Station in 2020 are included in the attached summary of operations.

Please contact me by telephone at 867.393.5350 or by email: travis.ritchie@yec.yk.ca if you have any questions, comments, or concerns with this report.

Thank you for your time and consideration in this matter.

Yours Sincerely,



Travis Ritchie, P.Biol.
Manager – Environment, Assessment, & Licensing

Attachment: Table 1 - Summary of Yukon Energy 2020 Thermal Electricity Generation and Emissions Intensity

c. Chioma Izugbokwe, Manager, Oil and Gas Operations, Government of Yukon (via email)

Table 1 - Summary of Yukon Energy Corporation 2020 Electricity Generation and Gaseous Emissions from Diesel and Natural Gas Sources

Facility	Unit ID	Total 2020 Operating Time (hrs)	Total 2020 Energy Produced (KWh)	Emission Rates ¹ (g/kWh)						Total Annual Emissions (tonnes)					
				NO ₂	SO ₂	CO	PM _{2.5}	VOC	GHG (CO ₂ eq)	NO ₂	SO ₂	CO	PM _{2.5}	VOC	GHG (CO ₂ eq)
Whitehorse	WD4	915	2,105	8.82	0.014	0.52	0.13	-	697.5	0.02	0.000	0.00	0.00	-	1.5
	WD5	922	2,132,202	8.82	0.014	0.52	0.13	-	697.5	18.81	0.030	1.10	0.29	-	1,487.2
	WD6	903	20,187	8.82	0.014	0.52	0.13	-	697.5	0.18	0.000	0.01	0.00	-	14.1
	WD7	737	437	8.82	0.014	0.52	0.13	-	697.5	0.00	0.000	0.00	0.00	-	0.3
	WG1	3,950	16,552	1.85	0.003	4.06	0.02	0.91	451.0	0.03	0.000	0.07	0.00	0.02	7.5
	WG2	2,965	12,388	1.85	0.003	4.06	0.02	0.91	451.0	0.02	0.000	0.05	0.00	4.55	5.6
	WG3	4,521	18,774	1.85	0.003	4.06	0.02	0.91	451.0	0.03	0.000	0.08	0.00	4.55	8.5
	YM10	738	1,105,510	8.82	0.014	0.52	0.13	-	697.5	9.76	0.015	0.57	0.15	-	771.1
	YM11	682	1,133,033	8.82	0.014	0.52	0.13	-	697.5	10.00	0.016	0.58	0.15	-	790.3
	YM12	468	778,069	8.82	0.014	0.52	0.13	-	697.5	6.87	0.011	0.40	0.10	-	542.7
	YM13	647	999,719	8.82	0.014	0.52	0.13	-	697.5	8.82	0.014	0.52	0.13	-	697.3
	YM14	701	1,003,760	8.82	0.014	0.52	0.13	-	698.5	8.86	0.014	0.52	0.13	-	700.1
	YM15	404	683,874	8.82	0.014	0.52	0.13	-	699.5	6.03	0.010	0.35	0.09	-	477.0
	YM16	551	913,359	8.82	0.014	0.52	0.13	-	700.5	8.06	0.013	0.47	0.12	-	637.1
	YM17	538	880,797	8.82	0.014	0.52	0.13	-	701.5	7.77	0.012	0.45	0.12	-	614.4
YM18	2,271	687,603	8.82	0.014	0.52	0.13	-	701.5	6.07	0.010	0.35	0.09	-	479.6	
YM19	93	161,876	8.82	0.014	0.52	0.13	-	702.5	1.43	0.002	0.08	0.02	-	112.9	
Plant Total		22,006	10,550,245	-	-	-	-	-	-	92.76	0.147	5.61	1.41	9.11	7,347.0
Faro	FD1	29	57,750	8.82	0.014	0.52	0.13	-	697.5	0.5096	0.0008	0.0298	0.0077	-	40
	FD7	497	747,938	8.82	0.014	0.52	0.13	-	697.5	6.5998	0.0105	0.3859	0.1002	-	522
	YM20	0	0	8.82	0.014	0.52	0.13	-	701.5	0.00	0.000	0.00	0.00	-	0
	YM21	0	0	8.82	0.014	0.52	0.13	-	701.5	0.00	0.000	0.00	0.00	-	0
	YM22	0	0	8.82	0.014	0.52	0.13	-	701.5	0.00	0.000	0.00	0.00	-	0
	YM23	0	0	8.82	0.014	0.52	0.13	-	701.5	0.00	0.000	0.00	0.00	-	0
	YM24	0	0	8.82	0.014	0.52	0.13	-	701.5	0.00	0.000	0.00	0.00	-	0
	YM25	0	0	8.82	0.014	0.52	0.13	-	701.5	0.00	0.000	0.00	0.00	-	0
	YM26	0	0	8.82	0.014	0.52	0.13	-	701.5	0.00	0.000	0.00	0.00	-	0
Plant Total		525	805,688	-	-	-	-	-	-	7.1094	0.0113	0.4157	0.1080		562
Mayo	MD1	357	134,000	8.82	0.014	0.52	0.13	-	697.5	1.1824	0.0019	0.0691	0.0180	-	93
	MD2	308	116,000	8.82	0.014	0.52	0.13	-	697.5	1.0236	0.0016	0.0599	0.0155	-	81
	MD3	217	81,000	8.82	0.014	0.52	0.13	-	697.5	0.7147	0.0011	0.0418	0.0109	-	56
Plant Total		882	331,000	-	-	-	-	-	-	2.9207	0.0046	0.1708	0.0444	-	231
Dawson	DD1	668	368,997	8.82	0.014	0.52	0.13	-	697.5	3.2560	0.0052	0.1904	0.0494	-	257
	DD2	757	550,825	8.82	0.014	0.52	0.13	-	697.5	4.8605	0.0077	0.2842	0.0738	-	384
	DD3	794	573,186	8.82	0.014	0.52	0.13	-	697.5	5.0578	0.0080	0.2958	0.0768	-	400
	DD4	817	700,106	8.82	0.014	0.52	0.13	-	697.5	6.1777	0.0098	0.3613	0.0938	-	488
	DD5	983	1,212,549	8.82	0.014	0.52	0.13	-	697.5	10.6995	0.0170	0.6257	0.1625	-	846
	YM1	150	61,000	8.82	0.014	0.52	0.13	-	697.5	0.5383	0.0009	0.0315	0.0082	-	43
Plant Total		4,169	3,466,663	-	-	-	-	-	-	30.5898	0.0485	1.7888	0.4645	-	2,418

Notes:

¹ Source of CAC emissions rates from diesel is the stack testing results prepared by Levelton Consultants Ltd on behalf of Yukon Energy in 2011 and previously submitted to Yukon Government. CAC emissions from the natural gas-fired generators is per manufacturer specifications. Emissions from diesel generation from the National Inventory Report (Environment Canada) average approximately 697.5 tonnes of CO₂e per GWh (or 697.5 g/kWh). Natural gas GHG emissions are approximately 451 tonnes of CO₂e per GWh (or 451 g/kWh). Nitrous Oxide emissions in the combustion of natural gas are negligible (i.e., 1.47x10⁻¹⁷ g/kWh)

From: [Travis Ritchie](#)
To: Sarah.Preiksaitis@yukon.ca
Cc: Aparna.Verma@yukon.ca; [Shannon Mallory \(shannon.mallory@yec.yk.ca\)](mailto:Shannon.Mallory@yec.yk.ca)
Subject: Air Emissions Permit 60-010 Annual Report 2021
Date: March 30, 2022 2:26:00 PM
Attachments: [2021 Annual Emissions Permit Report.pdf](#)
[image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)
[image005.png](#)

Hello Sarah,

Please find our 2021 annual report for Air Emissions Permit 60-010 attached.

If, after your review, you have any questions, comments, or concerns with the report please let me know.

Thank you for your consideration.

Regards,

Travis



Travis Ritchie

Manager - Environment, Assessment, & Licensing

Telephone: 867-393-5350 | Mobile: 867-333-0300



SustainableElectricityCompany™



This message may contain confidential or privileged material. Any use of this information by anyone other than the intended recipient is prohibited. If you have received this message in error, please immediately reply to the sender and delete this information from your computer.



Please consider the environment before printing this e-mail

SM-YEC-20141008

March 30, 2022

File: 2515.03.01

Sarah Preiksaitis, Environmental Protection Analyst
Yukon Government, Department of Environment, Standards & Approvals Section
Box 2703
Whitehorse, Yukon Y1A 2C6

(via email to: sarah.preiksaitis@gov.yk.ca)

Dear Ms. Preiksaitis,

RE: AIR EMISSIONS PERMIT NO. 60-010 – PART 6 – 2022 ANNUAL OPERATIONAL REPORTING

Pursuant to the above referenced permit and its monitoring/reporting requirements I am pleased to provide the following information regarding our electricity generation using diesel and natural gas in 2021.

1. The attached table summarizes the total annual operating hours and electricity produced for all sources at each site, the emission rates for various common air contaminants, and the estimated total emissions from each unit based on their emission rates and hours operated.
2. The estimated percentage of operational hours where each source was operated, but where no electricity was produced is very difficult to estimate for various reasons. A rough estimate suggests up to 5% of the reported 2021 engine run times could account for average unit operation with no electricity generation.
3. All applicable maintenance conducted on the fleet in 2021 was in accordance with the unit manufacturer's instructions and recommendations. No overhauls were completed in 2021.
4. The accounting methodology for fuel inventory at the natural gas generating station is based on a mass balance of fuel delivered, fuel in storage, fuel utilized for power production and heating, and any fuel released during a venting episode or spill/release. For the purposes of monitoring and reporting under the air emissions permit, Yukon Energy considers all uncombusted fuel vented and/or otherwise released/spilled as fugitive emissions. Fugitive emissions of methane in 2021 associated with venting episodes and direct releases to onsite containment totalled approximately 191 kg and 0 kg, respectively (based on 211 deliveries totaling 3,645,552 kg of LNG delivered). All venting emissions were associated with fuel deliveries, which each result in an estimated release of roughly 0.8 kg of LNG depending on each discrete delivery volume.
5. Contingency generators located at the Whitehorse Rapids Generating Station and Faro Generating Station are included in the attached summary of operations. All sites operated within approved capacity limits.

Please contact me by telephone at 867.393.5350 or by email: travis.ritchie@yec.yk.ca if you have any questions, comments, or concerns with this report.

Thank you for your time and consideration in this matter.

Yours Sincerely,



Travis Ritchie
Manager – Environment, Assessment, & Licensing

Attachment: Table 1 - Summary of Yukon Energy 2021 Thermal Electricity Generation and Emissions Intensity

c. Aparna Verma, Manager, Oil and Gas Operations, Government of Yukon (via email)

Table 1 - Summary of Yukon Energy Corporation 2022 Electricity Generation and Gaseous Emissions from Diesel and Natural Gas Sources

Facility	Unit ID	Total 2021 Operating Time (hrs)	Total 2021 Energy Produced (KWh)	Emission Rates ¹ (g/kWh)						Total Annual Emissions (tonnes)					
				NO ₂	SO ₂	CO	PM _{2.5}	VOC	GHG (CO ₂ eq)	NO ₂	SO ₂	CO	PM _{2.5}	VOC	GHG (CO ₂ eq)
Whitehorse	WD4	53	95,000	8.82	0.014	0.52	0.13	-	697.5	0.84	0.001	0.05	0.01	-	66
	WD5	178	380,481	8.82	0.014	0.52	0.13	-	697.5	3.36	0.005	0.20	0.05	-	265
	WD6	190	401,300	8.82	0.014	0.52	0.13	-	697.5	3.54	0.006	0.21	0.05	-	280
	WD7	233	574,350	8.82	0.014	0.52	0.13	-	697.5	5.07	0.008	0.30	0.08	-	401
	WG1	982	4,077,600	1.85	0.003	4.06	0.02	0.91	451.0	7.54	0.012	16.56	0.08	3.71	1,839
	WG2	2,169	8,747,400	1.85	0.003	4.06	0.02	0.91	451.0	16.18	0.026	35.51	0.17	7.96	3,945
	WG3	2,115	8,720,400	1.85	0.003	4.06	0.02	0.91	451.0	16.13	0.026	35.40	0.17	7.94	3,933
	YM10	677	1,123,969	8.82	0.014	0.52	0.13	-	697.5	9.92	0.016	0.58	0.15	-	784
	YM11	946	1,487,338	8.82	0.014	0.52	0.13	-	697.5	13.12	0.021	0.77	0.20	-	1,037
	YM12	894	1,513,080	8.82	0.014	0.52	0.13	-	697.5	13.35	0.021	0.78	0.20	-	1,055
	YM13	827	1,335,705	8.82	0.014	0.52	0.13	-	697.5	11.79	0.019	0.69	0.18	-	932
	YM14	1,097	1,732,553	8.82	0.014	0.52	0.13	-	698.5	15.29	0.024	0.89	0.23	-	1,208
	YM15	488	846,250	8.82	0.014	0.52	0.13	-	699.5	7.47	0.012	0.44	0.11	-	590
	YM16	856	1,458,017	8.82	0.014	0.52	0.13	-	700.5	12.87	0.020	0.75	0.20	-	1,017
	YM17	720	1,051,724	8.82	0.014	0.52	0.13	-	701.5	9.28	0.015	0.54	0.14	-	734
YM18	2,868	3,919,284	8.82	0.014	0.52	0.13	-	701.5	34.58	0.055	2.02	0.53	-	2,734	
YM19	656	1,143,551	8.82	0.014	0.52	0.13	-	702.5	10.09	0.016	0.59	0.15	-	798	
Plant Total		15,949	38,608,002	-	-	-	-	-	-	190.42	0.304	96.28	2.72	19.61	21,618
Faro	FD1	105	189,456	8.82	0.014	0.52	0.13	-	697.5	1.67	0.003	0.10	0.03	-	132
	FD7	261	422,100	8.82	0.014	0.52	0.13	-	697.5	3.72	0.006	0.22	0.06	-	294
	YM20	101	163,265	8.82	0.014	0.52	0.13	-	701.5	0.00	0.000	0.00	0.00	-	114
	YM21	97	153,283	8.82	0.014	0.52	0.13	-	701.5	0.00	0.000	0.00	0.00	-	107
	YM22	37	56,555	8.82	0.014	0.52	0.13	-	701.5	0.00	0.000	0.00	0.00	-	39
	YM23	165	274,110	8.82	0.014	0.52	0.13	-	701.5	0.00	0.000	0.00	0.00	-	191
	YM24	24	23,628	8.82	0.014	0.52	0.13	-	701.5	0.00	0.000	0.00	0.00	-	16
	YM25	200	353,682	8.82	0.014	0.52	0.13	-	701.5	0.00	0.000	0.00	0.00	-	247
	YM26	271	440,412	8.82	0.014	0.52	0.13	-	701.5	0.00	0.000	0.00	0.00	-	307
Plant Total		1,261	2,076,491	-	-	-	-	-	-	5.40	0.009	0.32	0.08		1,448
Mayo	MD1	34	23,352	8.82	0.014	0.52	0.13	-	697.5	0.21	0.000	0.01	0.00	-	16
	MD2	35	22,890	8.82	0.014	0.52	0.13	-	697.5	0.20	0.000	0.01	0.00	-	16
	MD3	44	31,080	8.82	0.014	0.52	0.13	-	697.5	0.27	0.000	0.02	0.00	-	22
Plant Total		113	77,322	-	-	-	-	-	-	0.68	0.001	0.04	0.01	-	54
Dawson	DD1	217	115,954	8.82	0.014	0.52	0.13	-	697.5	1.02	0.002	0.06	0.02	-	81
	DD2	748	506,268	8.82	0.014	0.52	0.13	-	697.5	4.47	0.007	0.26	0.07	-	353
	DD3	560	379,770	8.82	0.014	0.52	0.13	-	697.5	3.35	0.005	0.20	0.05	-	265
	DD4	422	358,475	8.82	0.014	0.52	0.13	-	697.5	3.16	0.005	0.18	0.05	-	250
	DD5	333	374,286	8.82	0.014	0.52	0.13	-	697.5	3.30	0.005	0.19	0.05	-	261
	YM1	31	27,300	8.82	0.014	0.52	0.13	-	697.5	0.24	0.000	0.01	0.00	-	19
Plant Total		2,310	1,762,053	-	-	-	-	-	-	15.55	0.025	0.91	0.24	-	1,229
System Total		19,633	42,523,868	-	-	-	-	-	-	212.05	0.338	97.54	3.05	19.61	24,349

Notes:

¹ Source of CAC emissions rates from diesel is the stack testing results prepared by Levelton Consultants Ltd on behalf of Yukon Energy in 2011 and previously submitted to Yukon Government. CAC emissions from the natural gas-fired generators is per manufacturer specifications. Emissions from diesel generation from the National Inventory Report (Environment Canada) average approximately 697.5 tonnes of CO₂e per GWh (or 697.5 g/kWh). Natural gas GHG emissions are approximately 451 tonnes of CO₂e per GWh (or 451 g/kWh). Nitrous Oxide emissions in the combustion of natural gas are negligible (i.e., 1.47x10⁻¹⁷ g/kWh)

From: [Travis Ritchie](#)
To: [Elizabeth.Barker](#)
Cc: aparna.verma@gov.yk.ca
Subject: Annual Reports for Air Emissions Permits 60.010.01-04
Date: March 31, 2023 10:25:48 PM
Attachments: [2022 Operational Summary for Air Emissions Permit Report.pdf](#)
[2022 Annual Emissions Permit Report Permits 60.010.01,02,03,04 .pdf](#)

Hello Elizabeth,

Please find the annual report for YEC's four air emissions permits attached. I compiled the required information for each permit into a single report. I hope this suits your needs, but if not please let me know.

Thank you.

Regards,

Travis

March 31, 2023

File: 2515.03.01

Elizabeth Barker, Environmental Protection Analyst
Yukon Government, Department of Environment, Standards & Approvals Section
Box 2703
Whitehorse, Yukon Y1A 2C6

(via email to: elizabeth.barker@gov.yk.ca)

Dear Ms. Barker,

RE: AIR EMISSIONS PERMITS NO. 60-010-01 THROUGH 60-010-04 – PART 6 – 2022 ANNUAL OPERATIONAL REPORTING

Pursuant to the above referenced permits and their respective monitoring and reporting requirements I am pleased to provide the following information regarding our electricity generation using diesel and natural gas from the Faro, Mayo, Dawson City, and Whitehorse Rapids generating stations in 2022.

1. The attached table summarizes the total annual operating hours and electricity produced for all sources at each site, the emission rates for various common air contaminants, and the estimated total emissions from each unit based on their emission rates and hours operated.
2. The estimated percentage of operational hours where each source was operated, but where no electricity was produced is very difficult to estimate for various reasons. A rough estimate suggests up to 5% of the reported 2022 engine run times could account for average unit operation with no electricity generation.
3. All applicable maintenance conducted on the fleet in 2022 was in accordance with the unit manufacturer's instructions and recommendations. No overhauls were completed in 2022.
4. The accounting methodology for fuel inventory at the natural gas generating station is based on a mass balance of fuel delivered, fuel in storage, fuel utilized for power production and heating, and any fuel released during a venting episode or spill/release. For the purposes of monitoring and reporting under the air emissions permit, Yukon Energy considers all uncombusted fuel vented and/or otherwise released/spilled as fugitive emissions. Fugitive emissions of methane in 2022 associated with venting episodes and direct releases to onsite containment totalled approximately 203 kg and 0 kg, respectively (based on 234 fuel deliveries totaling 4,343,177 kg of LNG delivered). All venting emissions were associated with fuel deliveries, which each result in an estimated release of roughly 0.8 kg of LNG depending on each discrete delivery volume.
5. Mobile generators located at the Whitehorse Rapids Generating Station and Faro Generating Station are included in the attached summary of operations. All sites operated within approved capacity limits, except for the Whitehorse Rapids Generating Station, which had five (5) temporary exceedances of authorized site capacity in 2022, as detailed below.
 - The generating capacity exceedances at the Whitehorse Rapids Generating Station (WRGS) occurred during a period of very cold temperatures in late December 2022, per Part 7 of our Air Emissions Permit (AEP 60.010.04) this was reported earlier to YG Environment.
 - Background: On December 19 and 20, 2022 Yukon Energy was facing very high system/customer demand, with temperatures in the Yukon ranging from -50°C to -40°C. As a normal course of action the System Operator looked to balance generation across the various stations on the system to ensure compliance with the requirements of our various permits. Under the harsh conditions, however, we experienced temporary failures of some units on the system to respond to calls for generation. As such, Yukon Energy was forced to utilize some of its back up thermal generating capacity at the WRGS to meet demand. This operational response to ensure continued service to our customers resulted in a few short-term exceedances of the permitted generating capacity at the facility.

- o Exceedance Details: The periodic generating capacity exceedances at WRGS during this time is summarized below:

Date	Start Time (hh:mm)	End Time (hh:mm)	Capacity Average Exceedance (MW)	Duration (hrs)
December 19, 2022	12:10	12:15	~ 1	0.1
December 19, 2022	18:00	23:00	~ 4	5
December 20, 2022	02:00	05:30	~1	3.5
December 20, 2022	07:10	23:10	~ 4	16
December 20-21, 2022	23:45	00:05	~ 1	0.3

Please contact me by telephone at 867.393.5350 or by email: travis.ritchie@yec.yk.ca if you have any questions, comments, or concerns with this report.

Thank you for your time and consideration in this matter.

Yours Sincerely,



Travis Ritchie
Director – Risk & Compliance

Attachment: Table 1 - Summary of Yukon Energy 2022 Thermal Electricity Generation and Emissions Intensity

c. Aparna Verma, Manager, Geothermal & Petroleum Resources, Government of Yukon (via email)

Table 1 - Summary of Yukon Energy Corporation 2022 Electricity Generation and Gaseous Emissions from Diesel and Natural Gas Sources

Facility	Unit ID	Total 2022 Operating Time (hrs)	Total 2022 Energy Produced (KWh)	Emission Rates ¹ (g/kWh)							Total Annual Emissions (tonnes)						
				NO ₂	N ₂ O	SO ₂	CO	PM _{2.5}	VOC	GHG (CO ₂ eq)	NO ₂	N ₂ O	SO ₂	CO	PM _{2.5}	VOC	GHG (CO ₂ eq)
Whitehorse	WD4	191	413,000	8.82	0.0045	0.014	0.52	0.13	-	697.5	3.64	0.0019	0.006	0.21	0.06	-	288
	WD5	192	426,016	8.82	0.0045	0.014	0.52	0.13	-	697.5	3.76	0.0019	0.006	0.22	0.06	-	297
	WD6	190	415,500	8.82	0.0045	0.014	0.52	0.13	-	697.5	3.67	0.0019	0.006	0.21	0.06	-	290
	WD7	317	828,030	8.82	0.0045	0.014	0.52	0.13	-	697.5	7.31	0.0037	0.012	0.43	0.11	-	578
	WG1	2,042	8,158,100	1.85	0.0017	0.003	4.06	0.02	0.91	451.0	15.09	0.0139	0.024	33.12	0.16	7.42	3,679
	WG2	1,886	7,694,800	1.85	0.0017	0.003	4.06	0.02	0.91	451.0	14.24	0.0131	0.023	31.24	0.15	7.00	3,470
	WG3	2,420	9,699,400	1.85	0.0017	0.003	4.06	0.02	0.91	451.0	17.94	0.0165	0.029	39.38	0.19	8.83	4,374
	YM10	427	741,609	8.82	0.0045	0.014	0.52	0.13	-	697.5	6.54	0.0033	0.010	0.38	0.10	-	517
	YM11	413	626,345	8.82	0.0045	0.014	0.52	0.13	-	697.5	5.53	0.0028	0.009	0.32	0.08	-	437
	YM12	287	489,209	8.82	0.0045	0.014	0.52	0.13	-	697.5	4.32	0.0022	0.007	0.25	0.07	-	341
	YM13	384	669,690	8.82	0.0045	0.014	0.52	0.13	-	697.5	5.91	0.0030	0.009	0.35	0.09	-	467
	YM14	430	767,634	8.82	0.0045	0.014	0.52	0.13	-	697.5	6.77	0.0035	0.011	0.40	0.10	-	535
	YM15	252	444,647	8.82	0.0045	0.014	0.52	0.13	-	697.5	3.92	0.0020	0.006	0.23	0.06	-	310
	YM16	443	788,302	8.82	0.0045	0.014	0.52	0.13	-	697.5	6.96	0.0035	0.011	0.41	0.11	-	550
	YM17	318	567,629	8.82	0.0045	0.014	0.52	0.13	-	697.5	5.01	0.0026	0.008	0.29	0.08	-	396
YM18	427	737,159	8.82	0.0045	0.014	0.52	0.13	-	697.5	6.50	0.0033	0.010	0.38	0.10	-	514	
YM19	275	490,571	8.82	0.0045	0.014	0.52	0.13	-	697.5	4.33	0.0022	0.007	0.25	0.07	-	342	
Plant Total		10,893	33,957,641	-	-	-	-	-	-	121.44	0.0813	0.194	108.08	1.64	23.25	17,387	
Faro	FD1	28	58,862	8.82	0.0045	0.014	0.52	0.13	-	697.5	0.52	0.0003	0.001	0.03	0.01	-	41
	FD7	645	900,040	8.82	0.0045	0.014	0.52	0.13	-	697.5	7.94	0.0041	0.013	0.46	0.12	-	628
	YM20	384	679,331	8.82	0.0045	0.014	0.52	0.13	-	697.5	5.99	0.0031	0.010	0.35	0.09	-	474
	YM21	265	437,325	8.82	0.0045	0.014	0.52	0.13	-	697.5	3.86	0.0020	0.006	0.23	0.06	-	305
	YM22	210	341,431	8.82	0.0045	0.014	0.52	0.13	-	697.5	3.01	0.0015	0.005	0.18	0.04	-	238
	YM23	480	860,156	8.82	0.0045	0.014	0.52	0.13	-	697.5	7.59	0.0039	0.012	0.45	0.11	-	600
	YM24	179	297,206	8.82	0.0045	0.014	0.52	0.13	-	697.5	2.62	0.0013	0.004	0.15	0.04	-	207
	YM25	245	433,839	8.82	0.0045	0.014	0.52	0.13	-	697.5	3.83	0.0020	0.006	0.23	0.06	-	303
	YM26	417	746,249	8.82	0.0045	0.014	0.52	0.13	-	697.5	6.58	0.0034	0.010	0.39	0.10	-	521
Plant Total		2,851	4,754,438	-	-	-	-	-	-	41.94	0.0214	0.067	2.47	0.62		3,316	
Mayo	MD1	114	85,890	8.82	0.0045	0.014	0.52	0.13	-	697.5	0.76	0.0004	0.001	0.04	0.01	-	60
	MD2	51	34,860	8.82	0.0045	0.014	0.52	0.13	-	697.5	0.31	0.0002	0.000	0.02	0.00	-	24
	MD3	86	63,210	8.82	0.0045	0.014	0.52	0.13	-	697.5	0.56	0.0003	0.001	0.03	0.01	-	44
Plant Total		251	183,960	-	-	-	-	-	-	1.62	0.0008	0.003	0.09	0.02	-	128	
Dawson	DD1	427	271,970	8.82	0.0045	0.014	0.52	0.13	-	697.5	2.40	0.0012	0.004	0.14	0.04	-	190
	DD2	516	385,281	8.82	0.0045	0.014	0.52	0.13	-	697.5	3.40	0.0017	0.005	0.20	0.05	-	269
	DD3	676	509,775	8.82	0.0045	0.014	0.52	0.13	-	697.5	4.50	0.0023	0.007	0.26	0.07	-	356
	DD4	824	675,093	8.82	0.0045	0.014	0.52	0.13	-	697.5	5.96	0.0030	0.009	0.35	0.09	-	471
	DD5	839	1,001,205	8.82	0.0045	0.014	0.52	0.13	-	697.5	8.83	0.0045	0.014	0.52	0.13	-	698
	YM1	110	94,500	8.82	0.0045	0.014	0.52	0.13	-	697.5	0.83	0.0004	0.001	0.05	0.01	-	66
Plant Total		3,392	2,937,824	-	-	-	-	-	-	25.92	0.0132	0.041	1.52	0.39	-	2,049	
System Total		17,388	41,833,863	-	-	-	-	-	-	190.93	0.1167	0.305	112.16	2.68	23.25	22,880	

Notes:

¹ Source of CAC emissions rates from diesel is the stack testing results prepared by Levelton Consultants Ltd on behalf of Yukon Energy in 2011 and previously submitted to Yukon Government. CAC emissions from the natural gas-fired generators is per manufacturer specifications. Emissions from diesel generation from the National Inventory Report (Environment Canada) average approximately 697.5 tonnes of CO₂e per GWh (or 697.5 g/kWh). Natural gas GHG emissions are approximately 451 tonnes of CO₂e per GWh (or 451 g/kWh).

From: [Travis Ritchie](#)
To: Sarah.Preiksaitis@yukon.ca
Subject: RE: GPS coordinates for Dawson and Mayo
Date: April 12, 2022 9:23:00 AM
Attachments: [image001.png](#)

Hi Sarah,

Sure thing...

Approximate coordinates of the Dawson City Generating Station:

UTM Zone 7
Northing: 7104026.7685
Easting: 576156.199

Street Address:
113 Fifth Avenue

Approximate coordinates of the Village of Mayo (Diesel) Generating Station:

UTM Zone 8
Northing: 7052505.0275
Easting: 455892.8273

There is no street address other than "Mayo Road"

-

Lot Info:
Lot 1000, Quad 105 M/12, Group 1004, Plan 61437 LTO DCT No. 93Y378 - registered to Yukon Energy Corporation.

Approximate coordinates of the Whitehorse Rapids Generating Station:

UTM Zone 8
Northing: 6729200.0
Easting: 497522.99

Street Address:
No. 2 Miles Canyon Road

Regards,

Travis

From: Sarah.Preiksaitis@yukon.ca <Sarah.Preiksaitis@yukon.ca>
Sent: April 12, 2022 8:29 AM
To: Travis Ritchie <Travis.Ritchie@yec.yk.ca>
Subject: GPS coordinates for Dawson and Mayo

Hi Travis,

Finalizing last details of the new permits, and it looks like we should be able to amend and separate all permits at once. Would you be able to confirm the GPS coordinates and addresses for the Mayo and Dawson sites?

Thank you,



Sarah Preiksaitis
Environmental Protection Analyst
Environment | Standards and Approvals
T 867-667-5456 | Yukon.ca

From: [Travis Ritchie](#)
To: Brad.Heron@yukon.ca
Cc: [Darrell Johnson](#)
Subject: RE: Permit# 60-010-03
Date: June 29, 2022 4:08:00 PM
Attachments: [image002.png](#)
[60-010-03 Dawson \(2014-2024\) - signed.pdf](#)

Hi Brad,

Thanks for your message.

I expect it will be no problem to have the inspection conducted on either day you indicate. By copy of this email I will ask Darrell Johnson, YEC's Supervisor of Thermal Operations, to confirm what would be the best date and time to do the inspection visit in the window you have provided and to share contact info for our operator in charge in Dawson City.

Regards,

Travis

From: Brad.Heron@yukon.ca <Brad.Heron@yukon.ca>
Sent: June 29, 2022 3:44 PM
To: Travis Ritchie <Travis.Ritchie@yec.yk.ca>
Subject: Permit# 60-010-03

Hello Travis,

I'll be in Dawson July 11 & 12 and I would like to conduct an inspection of Air Emissions permit #60-010-03. I've attached a copy of the permit for your reference. Please let me know when would be a good time for me to stop in at YEC in Dawson on those days and if there will be someone there to accompany me.

Thanks,

Brad Heron

Environmental Compliance Officer (TA)
Department of Environment | Environmental Assessment and Protection Branch
P 867-667-3436 | Yukon.ca

From: Brad.Heron@yukon.ca
To: [Travis Ritchie](#)
Cc: [Darrell Johnson](#)
Subject: RE: Permit# 60-010-03
Date: June 30, 2022 2:28:56 PM
Attachments: [image001.png](#)
[image003.png](#)
[image004.png](#)
[image005.png](#)
[image006.png](#)
[image007.png](#)

Travis,

Thanks for getting back to me, I'm busy in the afternoon on July 11th but am free Monday morning and all day Tuesday.

Brad Heron

Environmental Compliance Officer (TA)
Department of Environment | Environmental Assessment and Protection Branch
P 867-667-3436 | Yukon.ca

From: Travis Ritchie <Travis.Ritchie@yec.yk.ca>
Sent: June 29, 2022 4:08 PM
To: Brad.Heron <Brad.Heron@yukon.ca>
Cc: Darrell Johnson <Darrell.Johnson@yec.yk.ca>
Subject: RE: Permit# 60-010-03

Hi Brad,

Thanks for your message.

I expect it will be no problem to have the inspection conducted on either day you indicate. By copy of this email I will ask Darrell Johnson, YEC's Supervisor of Thermal Operations, to confirm what would be the best date and time to do the inspection visit in the window you have provided and to share contact info for our operator in charge in Dawson City.

Regards,

Travis

Travis Ritchie
Manager - Environment, Assessment, & Licensing



Telephone: 867-393-5350 | Mobile: 867-333-0300



Sustainable Electricity Company™



This message may contain confidential or privileged material. Any use of this information by anyone other than the intended recipient is prohibited. If you have received this message in error, please immediately reply to the sender and delete this information from your computer.

 Please consider the environment before printing this e-mail

From: Brad.Heron@yukon.ca <Brad.Heron@yukon.ca>

Sent: June 29, 2022 3:44 PM

To: Travis Ritchie <Travis.Ritchie@yec.yk.ca>

Subject: Permit# 60-010-03

Hello Travis,

I'll be in Dawson July 11 & 12 and I would like to conduct an inspection of Air Emissions permit #60-010-03. I've attached a copy of the permit for your reference. Please let me know when would be a good time for me to stop in at YEC in Dawson on those days and if there will be someone there to accompany me.

Thanks,

Brad Heron

Environmental Compliance Officer (TA)

Department of Environment | Environmental Assessment and Protection Branch

P 867-667-3436 | Yukon.ca



Environmental Protection and Assessment Branch

Environment Act
INSPECTION REPORT

Permit No.:60-010-03

Inspection Report No.:2022-054

GENERAL INFORMATION

PERMITTEE: Yukon Energy Corporation

PERSON CONTACTED:
Darrell Johnson

ACCOMPANIED BY:
Brent Macdonald

INSPECTED BY:
Brad Heron

MAILING ADDRESS:
Box 5920, Whitehorse, Yukon

LOCATION:
113th Fifth Avenue, Dawson City, YT

INSPECTION DATE & TIME:
August 2, 2022 1330hrs

PERMIT EXPIRY DATE:
December 31, 2024

LAST INSPECTED:
NA

PERMIT TYPE

- | | | |
|--|--|---|
| <input type="checkbox"/> Air Emissions | <input type="checkbox"/> Ministerial Authorization | <input type="checkbox"/> Solid Waste Management |
| <input type="checkbox"/> Beverage Containers | <input type="checkbox"/> Pesticides | <input type="checkbox"/> Special Waste |
| <input type="checkbox"/> Designated Materials | <input type="checkbox"/> Relocation | <input type="checkbox"/> Ozone Depleting Substances & Other Halocarbons |
| <input type="checkbox"/> Land Treatment Facility | <input type="checkbox"/> Risk-Based Restoration | |

INSPECTED ACTIVITIES

CONDITIONS: A – Acceptable C – Concerns U – Unacceptable N/A – Not Applicable N/I – Not Inspected

Activities	Condition	Comment	Activities	Condition	Comment	Activities	Condition	Comment
Closure/ Decommissioning	NA		Management of Contaminated Water	NA		Signage & Segregation	NA	
Construction	NA		Opacity	NI		Site Conditions	NA	
Emissions Monitoring	U	*1	Pesticide Appendix	NA		Soil Handling & Stockpiling	NA	
Facility Maintenance	A		Pesticide Application	NA		Spills	A	
Facility Operations	A		Pesticide Applicator Certifications	NA		Storage & Disposal	NA	
Facility Specifications	A		Pesticide Transportation	NA		Storage & Handling	NA	
Fencing & Security	NA		Release of Contaminants	NI		Testing & Emissions Management	U	*1
Incineration/ Burning	NA		Relocation of Contaminated Material	NA		Transport & Transfer	NA	
Inspections, Record Keeping & Reporting	U,C	*2, *3	Removal of Remediated Soil	NA		Unauthorized Emissions	A	
Cell coverage	NA		Sampling & Analysis	NA		Other		

ENFORCEMENT ACTION

- Written Warning Inspector's Direction Non-Compliance

INSPECTION COMMENTS

On August 2, 2022 Environmental Compliance Officer B. Heron conducted an inspection of the Yukon Energy Corporations generator station in Dawson City. This inspection was done to determine compliance with Air Emissions permit #60-010-03. Permittee representative Darrell Johnson was unable to attend the inspection but site operator Brent Macdonald was present. This report outlines all areas of concern and non-compliance, any condition not addressed were either compliant or not inspected. Please take note of the following observations:

INSPECTOR

Signature: 

Printed Name: Brad Heron

RECEIVED BY

Signature: _____

Printed Name: _____

Environmental Protection and Assessment Branch

***1 Monitoring Emissions**

- Permittee is not compliant with condition 5.1. If any diesel generator has exceeded 3% of its annual potential to emit in a calendar year, and, in that same calendar year, if the total operating time of all the generators at that site exceeds 3% of their total annual potential to emit, the permittee shall create an emissions management plan to be submitted to the analyst for approval. **See figure 1 and corrective action 1.**

Figure 1. Annual Potential to Emit.


	Unit ID	Total 2021 Operating Time (hrs)	Annual Potential to Emit (hrs)	% of Annual Potential to Emit
Dawson	DD1	217	8760	2.5
	DD2	748	8760	8.5
	DD3	560	8760	6.4
	DD4	422	8760	4.8
	DD5	333	8760	3.8
	YM1	31	8760	0.4
Plant Total		2,311	52560	4.4

***2 Reporting**

- Permittee is not compliant with condition 6.1 (b) to submit to an environmental protection analyst a report which identifies (b) the estimated total annual emission of SO₂, PM_{2.5}, CO, NO₂, and N₂O from each source at each of the sites.
 - * Permittee has failed to report on emissions of N₂O. **See corrective action 2.**

***3 Records**

- Permittee appears to be in compliance with condition 8.2 (b), to keep records of all inspections carried out under this permit.
 - * It was stated on inspection that during operating time, rounds and logging are completed each hour. Records all go to system control center where they are stored and monitored. At the time of the inspection no records could be produced by the operator on site.

INSPECTOR
Signature: 
Printed Name: Brad Heron

RECEIVED BY
Signature: _____
Printed Name: _____

Environmental Protection and Assessment Branch

Corrective Actions

1. Permittee is required to create an emissions management plan and submit it to Environmental Protection Analyst as per condition 5.1.
2. Permittee is required to provide total annual emission of N₂O as required in condition 6.1(b) or, a better understanding if this is being tracked in a different format.

Corrective actions are to be completed no later than **December 1, 2022**. Confirmation of actions taken are to be provided to brad.heron@yukon.ca.

INSPECTOR

Signature:  _____

Printed Name: Brad Heron

RECEIVED BY

Signature: _____

Printed Name: _____

From: [Brad.Heron](#)
To: [Travis Ritchie](#)
Cc: [Philippe.Thibert-Leduc](#); [Sarah.Preiksaitis](#)
Subject: Dawson Inspection Report
Date: October 6, 2022 9:35:46 AM
Attachments: [image001.png](#)
[20220824-insp-rprt-6001003-bh.pdf](#)

Please find your inspection report attached, if you have any questions feel free to contact me.

Brad Heron

Environmental Compliance Officer (TA)
Department of Environment | Environmental Assessment and Protection Branch
P 867-667-3436 | Yukon.ca