

Stericycle[®]

**2022 Q4
INCINERATION
REPORT**



Stericycle, ULC

95 Deerhurst Drive
Brampton, ON
L6T 5R7

Tel.: (905) 789-6008

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January 30, 2023

District Manager
Ministry of the Environment, Conservation and Parks
Halton-Peel District Office
300-4145 North Service Road
Burlington, ON
L7L 6A3

Dear District Manager,

**Re: Stericycle, ULC.
Certificate of Approval for a Waste Disposal Site No. A680324**

As required by Condition 52 of the above-mentioned Certificate of Approval, please find attached the incinerator quarterly report for the forth quarter of 2022.

During October 2022 there were 17 occurrences of the 4-hour CO alarm & 3 occurrences of the 12-hour CO alarm. In November 2022 there were 14 occurrences of the 4-hour CO alarm and 1 occurrences of the 12-hour CO alarm. In December 2022 there were 11 occurrences of the 4-hour CO alarm and 3 occurrences of the 12-hour CO alarm. Stericycle will continue to work with the incinerator operators to further reduce the number of CO alarms.

There were 0 occurrences of the 24-hour NOX alarm triggered in Q4 of 2022.

Details on the above noted alarms are available in the body of the attached report.

FOURTH QUARTER 2022

INCINERATOR QUARTERLY REPORT - SUPPLEMENTAL INFORMATION

- The Emergency Bypass stack was used six (6) times during Q4 2022. A detailed description is provided in this report. Stericycle believes this was an electrical glitch that triggered the bypass alarm; however, no other indications of a bypass were present.
- Throughout the quarter, minor issues with either the waste feed or the proper operation of certain pieces of equipment caused alarm conditions. In all cases, the problems were fixed, and normal operations resumed. Corrective actions included adjustments to the waste feed mix and rate and corrective maintenance on affected systems.
- Throughout the fourth quarter of 2022, the incinerator was run by trained Stericycle operators Emilio Perez, Raminderpal Singh, Said M. Said & Lamek Abraha.
- There were no complaints received regarding the operation of the incinerator during the fourth quarter of 2022.
- Stericycle Inc. operated the incinerator on the following days during the third quarter:

Start-up	Shut Down
09/30/2022 @ 15:23	10/01/2022 @ 11:03
10/01/2022 @ 15:14	10/02/2022 @ 16:01
10/02/2022 @ 20:44	10/04/2022 @ 12:04
10/04/2022 @ 16:58	10/07/2022 @ 07:36
10/04/2022 @ 11:58	10/08/2022 @ 14:57
10/08/2022 @ 22:42	10/09/2022 @ 06:07
10/09/2022 @ 10:43	10/10/2022 @ 19:44
10/10/2022 @ 23:48	10/13/2022 @ 20:57
10/14/2022 @ 01:10	10/15/2022 @ 05:14
10/15/2022 @ 10:00	10/16/2022 @ 14:48
10/16/2022 @ 18:52	10/17/2022 @ 14:49
10/17/2022 @ 19:22	10/18/2022 @ 17:51
10/20/2022 @ 14:33	10/22/2022 @ 03:25
10/22/2022 @ 09:01	10/23/2022 @ 20:34
10/24/2022 @ 01:02	10/28/2022 @ 08:37
10/28/2022 @ 14:43	10/29/2022 @ 02:45
10/29/2022 @ 11:08	11/01/2022 @ 18:02
11/01/2022 @ 22:16	11/02/2022 @ 18:07
11/02/2022 @ 22:42	11/09/2022 @ 09:56
11/09/2022 @ 15:32	11/11/2022 @ 20:16
11/12/2022 @ 00:18	11/15/2022 @ 06:45
11/15/2022 @ 18:04	11/17/2022 @ 09:59
11/18/2022 @ 13:05	11/19/2022 @ 15:48
11/20/2022 @ 02:39	11/21/2022 @ 06:07
11/21/2022 @ 09:21	12/03/2022 @ 01:09

Start-up	Shut Down
12/03/2022 @ 05:34	12/04/2022 @ 01:52
12/05/2022 @ 13:38	12/07/2022 @ 16:31
12/07/2022 @ 17:17	12/08/2022 @ 08:17
12/08/2022 @ 10:26	12/12/2022 @ 05:13
12/12/2022 @ 07:27	12/16/2022 @ 20:45
12/16/2022 @ 21:33	12/17/2022 @ 03:24
12/17/2022 @ 03:44	12/18/2022 @ 11:26
12/18/2022 @ 17:13	12/20/2022 @ 04:50
12/20/2022 @ 09:58	12/22/2022 @ 14:36
12/22/2022 @ 21:06	12/30/2022 @ 22:51
12/31/2022 @ 04:03	12/31/2022 @ 10:30

During Q4 of 2022 routine maintenance was performed on the incinerator during the scheduled shutdowns along with the following:

- Refractory Repair
- Preplacement of pump seals on the APC system

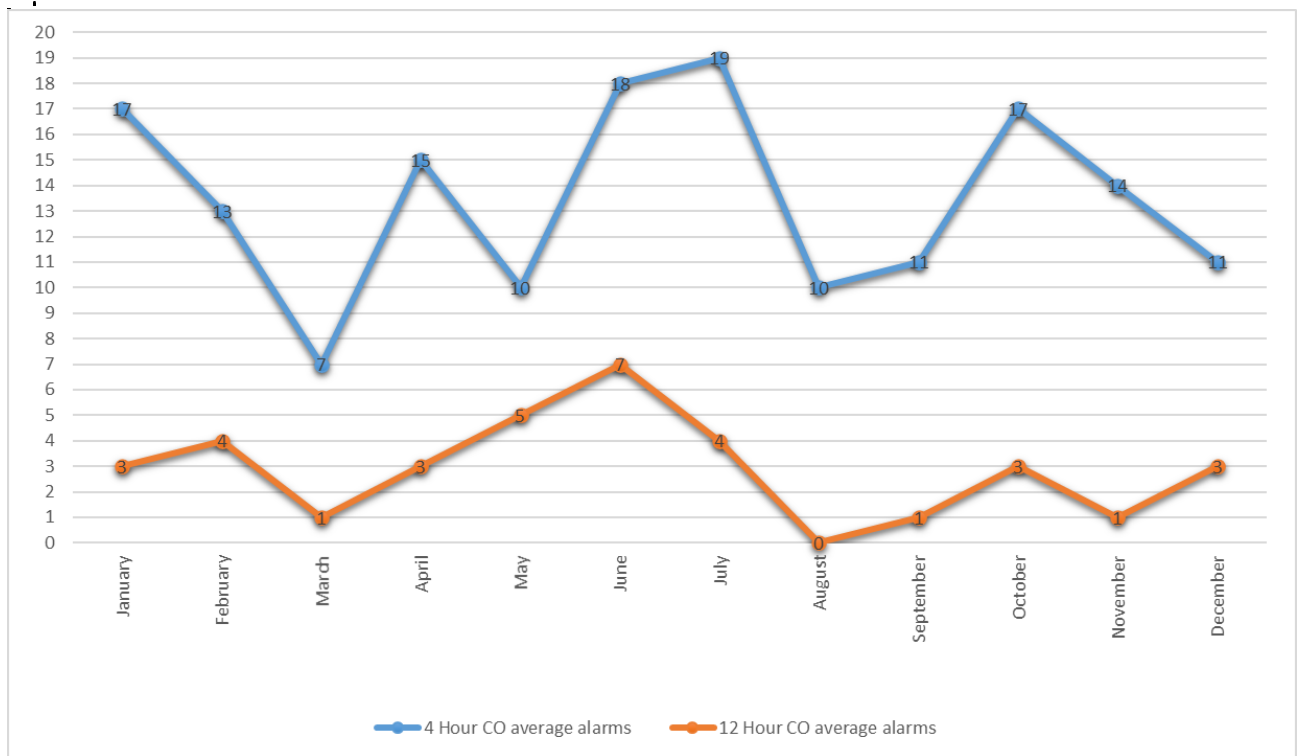
Emergency Bypass Summary

Date	Start Time	End Time	Duration	Emission Volume (m ³)	Reason	Corrective Action
12/2/2022	19:59	20:13	0:14	51.04	At approximately 19:59 the emergency bypass stack cap opened due to a failure of the facility air compressor. Stericycle maintenance trouble shot the air compressor failure and found that the unit had over-heated and subsequently shut down.	Stericycle maintenance trouble shot the air compressor failure and found that the unit had over-heated and subsequently shut down. restored to the system, the emergency bypass stack cap closed.
12/7/2022	3:33	3:42	0:09	32.81	At approximately 03:33 the emergency bypass stack cap opened due to a failure of the facility air compressor. Stericycle maintenance trouble shot the air compressor failure and found that the unit had over-heated and subsequently shut down	Stericycle maintenance cleaned the air compressors radiator unit and restarted the air compressor. Once air pressure was restored to the system, the emergency bypass stack cap closed. Stericycle ULC had a third party contactor on-site later at 08:30 to perform maintenance on the air compressor to resolve any subsequent overheating issues. A back-up air compressor is scheduled for installation on December 8, 2022.
12/7/2022	16:53	17:21	0:28	102.08	At approximately 16:53 the emergency bypass stack cap opened due to the emergency shutdown of the APC	Stericycle maintenance replaced the broken section of pipe; once the repair was

					system due to a ruptured cold water return pipe the feeds the quench and condenser tanks on the APC system.	completed the APC system was restarted and the emergency bypass stack cap was closed.
12/12/2022	4:22	4:26	0:04	14.58	At approximately 04:22 a failure of the uninterrupted power supply (UPS) attached to the incinerators PLC panel caused the incinerator to default into "off" mode which in turn triggered the opening of the emergency bypass stack cap	During this stack cap opening the air pollution control (APC) system remained functional and a negative pressure was maintained within the incinerator. The maintenance team trouble shot the UPS and restarted it. Once power was restored, the emergency bypass stack cap was closed
12/12/2022	5:54	8:11	2:17	499.48	While in shut-down mode, at 05:54 while maintenance inspections were taking place the rotary atomizer stopped working, at which time the APC system was shut-down to protect the equipment and the emergency bypass stack was opened	Stericycle maintenance assessed the rotary atomizer and once the necessary check were completed, the APC system was restarted and the emergency bypass stack cap was closed
12/16/2022	20:35	21:43	1:08	247.92	The incinerator was put into an emergency bypass due to the VFD failure on the ID fan causing smoke to build up in the plant.	Trouble shooting with 3rd party (Spark Power) found that communication was lost between the incinerators PLC control and the I.D. fan VFD causing the fan to idle at 20%. Communication between the incinerator PLC and the I.D. fan VFD was restored.

CO Alarm Chart Q3 2022

Month	4 Hour CO average alarms	12 Hour CO average alarms
January	17	3
February	13	4
March	7	1
April	15	3
May	10	5
June	18	7
July	19	4
August	10	0
September	11	1
October	17	3
November	14	1
December	11	3



2021 CO alarms vs. 2022 CO alarms

Month	2021		2022	
	4 Hr. Alarm	12 Hr. Alarm	4 Hr. Alarm	12 Hr. Alarm
January	13	0	17	3
February	11	0	13	4
March	19	2	7	1
April	18	2	15	3
May	5	0	10	5
June	5	1	18	7
July	10	0	19	4
August	6	0	10	0
September	8	2	11	1
October	7	0	17	3
November	7	0	14	1
December	9	1	11	3

Stericycle warrants that it has exercised best efforts to adhere to all the applicable Terms & Conditions of its Waste Disposal Site Certificate of Approval including all inspection and reporting requirements through Q4 of 2022.

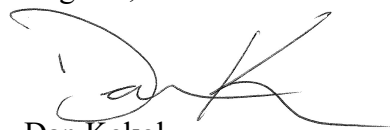
Stericycle is very committed to the full compliance with all conditions of its Provisional Certificate of Approval, throughout the year, whenever a situation of possible non-compliance was identified; immediate actions were taken to ensure full compliance. Stericycle has mechanisms in place to always ensure full compliance. Employees are aware of their responsibilities and are trained appropriately.

Stericycle believes that the current monitoring program is sufficient and enables both Stericycle and the MECF to have a good understanding of the Site operations and to assess its compliance with the Certificate of Approval and all the relevant regulations.

However, Stericycle is very committed to looking for ways to improve its operations through better procedures, training, inspections, and monitoring programs and will continue to do so.

I trust that this is the information required and that it meets with your approval. Should you have any questions or require additional information, please do not hesitate to contact me accordingly.

Regards,



Dan Kokol
ESH Specialist
Phone: 905-595-8532
Email: dkokol@stericycle.com



December 5th, 2022

Christelle Broux Senior Environmental Officer
Ministry of Environment, Conservation and Parks
Halton-Peel District Office
4145 North Service Road, Suite 300
Burlington, Ontario
L7L 6A3

Dear Christelle Broux,

RE: Stericycle Site Certificate of Approval No. A680324
Use of the Emergency Bypass Stack
Ref #: 1187-CLR53X

On December 2, 2022, at approximately 19:59 the emergency bypass stack cap was opened due to a failure of the air compressor at the facility.

As required by conditions 36 and 38(1) (b) & (2) of the above referenced ECA, the incinerator was brought into a controlled shutdown during this time. The emergency bypass stack was open for a duration of fourteen (14) minutes. During this period no waste was injected into the incinerator and the upper chamber was maintained at 1000°C by natural gas only.

On December 2, 2022, a call was placed to the Spills Action Control center at 21:33 by Stericycle Operational Environmental, Health & Safety Specialist Dan Kokol to report the use of the emergency bypass stack. At approximately 19:59 the emergency bypass stack cap opened due to a failure of the facility air compressor. Stericycle maintenance trouble shot the air compressor failure and found that the unit had over-heated and subsequently shut down. Stericycle maintenance cleaned the air compressors radiator unit and restarted the air compressor. Once air pressure was restored to the system, the emergency bypass stack cap closed.

During this stack cap opening event Stericycle believes were no emissions lost through the emergency bypass stack as the air pollution control system remained fully functional and operational, whereby the internal draft of the system and negative pressure drew air in through the open stack cap. This is demonstrated in the DAS data where differential pressures remained normal and the O2 levels increased indicating that ambient oxygen was being pulled through the scrubber via the open stack.

If you require any additional information, please do not hesitate to call me directly at (905) 595-8532.

Yours truly,

Dan Kokol

Operational EHS Specialist
Stericycle ULC
905-595-8532
dkokol@stericycle.com



December 8th, 2022

Christelle Broux Senior Environmental Officer
Ministry of Environment, Conservation and Parks
Halton-Peel District Office
4145 North Service Road, Suite 300
Burlington, Ontario
L7L 6A3

Dear Christelle Broux,

RE: Stericycle Site Certificate of Approval No. A680324
Use of the Emergency Bypass Stack
Ref #: 1811-CLVSZM

On December 7, 2022, at approximately 03:33 the emergency bypass stack cap was opened due to a failure of the air compressor at the facility.

As required by conditions 36 and 38(1) (b) & (2) of the above referenced ECA, the incinerator was brought into a controlled shutdown during this time. The emergency bypass stack was open for a duration of nine (9) minutes. During this period no waste was injected into the incinerator and the upper chamber was maintained at 1000°C by natural gas only.

On December 7, 2022, a call was placed to the Spills Action Control center at 16:15 by Stericycle Operational Environmental, Health & Safety Specialist Dan Kokol to report the use of the emergency bypass stack. At approximately 03:33 the emergency bypass stack cap opened due to a failure of the facility air compressor. Stericycle maintenance trouble shot the air compressor failure and found that the unit had over-heated and subsequently shut down. Stericycle maintenance cleaned the air compressors radiator unit and restarted the air compressor. Once air pressure was restored to the system, the emergency bypass stack cap closed. Stericycle ULC had a third party contactor on-site later at 08:30 to perform maintenance on the air compressor to resolve any subsequent overheating issues. A back-up air compressor is scheduled for installation on December 8, 2022.

During this stack cap opening event Stericycle believes were no emissions lost through the emergency bypass stack as the air pollution control system remained fully functional and operational, whereby the internal draft of the system and negative pressure drew air in through the open stack cap. This is demonstrated in the DAS data where differential pressures remained normal and the O2 levels increased indicating that ambient oxygen was being pulled through the scrubber via the open stack.

If you require any additional information, please do not hesitate to call me directly at (905) 595-8532.

Yours truly,

Dan Kokol

Operational EHS Specialist
Stericycle ULC
905-595-8532
dkokol@stericycle.com



December 8th, 2022

Christelle Broux Senior Environmental Officer
Ministry of Environment, Conservation and Parks
Halton-Peel District Office
4145 North Service Road, Suite 300
Burlington, Ontario
L7L 6A3

Dear Christelle Broux,

RE: Stericycle Site Certificate of Approval No. A680324
Use of the Emergency Bypass Stack
Ref #: 6855-CLVTZC

On December 7, 2022, at approximately 16:53 the emergency bypass stack cap was opened due to an emergency shutdown of the Air Pollution Control (APC) system due to a ruptured cold water return pipe on the APC system.

As required by conditions 36 and 38(1) (b) & (2) of the above referenced ECA, the incinerator was brought into a controlled shutdown during this time. The emergency bypass stack was open for a duration of twenty-eight (28) minutes. During this period no waste was injected into the incinerator and the upper chamber was maintained at 1000°C by natural gas only.

On December 7, 2022, a call was placed to the Spills Action Control center at 16:53 by Stericycle Operational Environmental, Health & Safety Specialist Dan Kokol to report the use of the emergency bypass stack. At approximately 16:53 the emergency bypass stack cap opened due to the emergency shutdown of the APC system due to a ruptured cold water return pipe the feeds the quench and condenser tanks on the APC system. Stericycle maintenance replaced the broken section of pipe; once the repair was completed the APC system was restarted and the emergency bypass stack cap was closed.

During the bypass, approximately 102.08m³ of flue gas was emitted from the emergency bypass stack.

If you require any additional information, please do not hesitate to call me directly at (905) 595-8532.

Yours truly,

Dan Kokol

Operational EHS Specialist
Stericycle ULC
905-595-8532
dkokol@stericycle.com



December 16th, 2022

Christelle Broux Senior Environmental Officer
Ministry of Environment, Conservation and Parks
Halton-Peel District Office
4145 North Service Road, Suite 300
Burlington, Ontario
L7L 6A3

Dear Christelle Broux,

RE: Stericycle Site Certificate of Approval No. A680324
Use of the Emergency Bypass Stack
Ref #: 6348-CM2TBS

On December 12, 2022, at approximately 04:22 and 5:54 the emergency bypass stack cap was opened due to an electrical fault on in the incinerator PLC panel followed by a shut-down of the rotary atomizer.

As required by conditions 36 and 38(1) (b) & (2) of the above referenced ECA, the incinerator was brought into a controlled shutdown during this time. The emergency bypass stack was open for a duration of four (4) minutes at 04:22 and two (2) hours and seventeen (17) minutes for the bypass that occurred at 05:54. During this period no waste was injected into the incinerator and the upper chamber was maintained at 1000°C by natural gas only.

On December 12, 2022, a call was placed to the Spills Action Control center at 16:35 by Stericycle Operational Environmental, Health & Safety Specialist Dan Kokol to report the use of the emergency bypass stack. At approximately 04:22 a failure of the uninterrupted power supply (UPS) attached to the incinerators PLC panel caused the incinerator to default into “off” mode which in turn triggered the opening of the emergency bypass stack cap. During this stack cap opening the air pollution control (APC) system remained functional and a negative pressure was maintained within the incinerator. The maintenance team trouble shot the UPS and restarted it. Once power was restored, the emergency bypass stack cap was closed. Stericycle placed the incinerator into “shut-down” mode and called in a 3rd party electrician to check the UPS for the PLC control panel. While in shut-down mode, at 05:54 while maintenance inspections were taking place the rotary atomizer stopped working, at which time the APC system was shut-down to protect the equipment and the emergency bypass stack was opened. Stericycle maintenance assessed the rotary atomizer and once the necessary check were completed, the APC system was restarted, and the emergency bypass stack cap was closed.

During the bypass, approximately 499.48m³ of flue gas was emitted from the emergency bypass stack.

If you require any additional information, please do not hesitate to call me directly at (905) 595-8532.

Yours truly,

Dan Kokol

Operational EHS Specialist
Stericycle ULC
905-595-8532
dkokol@stericycle.com



December 20th, 2022

Christelle Broux Senior Environmental Officer
Ministry of Environment, Conservation and Parks
Halton-Peel District Office
4145 North Service Road, Suite 300
Burlington, Ontario
L7L 6A3

Dear Christelle Broux,

RE: Stericycle Site Certificate of Approval No. A680324
Use of the Emergency Bypass Stack
Ref #: 6841-CM749Z

On December 16, 2022, at approximately 20:35 the emergency bypass stack cap was opened due to the failure of the I.D. fan VDF which caused the facility to fill with smoke.

As required by conditions 36 and 38(1) (b) & (2) of the above referenced ECA, the incinerator was brought into a controlled shutdown during this time. The emergency bypass stack was open for a duration of forty-eight (48) minutes at. During this period no waste was injected into the incinerator and the upper chamber was maintained at 1000°C by natural gas only.

On December 16, 2022, a call was placed to the Spills Action Control center at 20:50 by Stericycle Shift Supervisor Denver D'Cruz to report the use of the emergency bypass stack. At approximately 20:35 the emergency bypass stack was opened by plant personnel due to a failure of the I.D fan VDF which caused the fan to idle at 20% which in turn caused a loss of draft (negative pressure) and caused the plant to fill with smoke. Stericycle personnel called in a 3rd party technician to trouble shoot the I.D. fan VFD failure. The 3rd party technician found that the Incinerator's PLC panel had lost communication with the I.D. fan VFD. The 3rd party restored communication between the Incinerator PLC panel and the I.D. fan VFD and the emergency bypass stack cap was closed.

During the bypass, approximately 175.0m³ of flue gas was emitted from the emergency bypass stack.

If you require any additional information, please do not hesitate to call me directly at (905) 595-8532.

Yours truly,

Dan Kokol

Operational EHS Specialist
Stericycle ULC
905-595-8532
dkokol@stericycle.com

Kokol, Dan

From: Broux, Christelle (MECP) <Christelle.Broux@ontario.ca>
Sent: Friday, December 9, 2022 2:40 PM
To: Kokol, Dan
Subject: RE: Emergency Bypass Ref # 1187-CLR53X

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Thank you Dan, I have filed the report with the incident (ref # 1187-CLR53X) and will proceed to close it. Noted that there were no emissions from this one.

I have also received the other two reports for the Dec. 7 incidents (ref #'s 1811-CLVSZM & 6685-CLVTZC) and will be closing those as well. Confirming that despite some confusion from SAC, there are two separate reports in our database.

Thanks,

Christelle Broux

Senior Environmental Officer (P.O. #1896)

Halton Peel District Office | Ministry of Environment, Conservation and Parks (MECP)

4145 North Service Rd, Suite 300 | Burlington, ON | L7L 6A3

christelle.broux@ontario.ca | **289-208-5057**

Spills/After-Hours: 1-800-268-6060

Ontario

From: Kokol, Dan <DKokol@STERICYCLE.com>
Sent: December-06-22 9:57 AM
To: Broux, Christelle (MECP) <Christelle.Broux@ontario.ca>
Subject: Emergency Bypass Ref # 1187-CLR53X

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Good morning Christelle,

Attached is the follow up report for the opening of the emergency bypass stack cap on Friday December 2nd, 2022, reference # 1187-CLR52X.

Respect the unexpected, think through your risks; safety is a choice you make

Dan Kokol

EHS Specialist

O: +1 905-595-8532 | M: +1 416-702-5470 | stericycle.ca | shredit.ca [Stericycle's 10 Critical Safety Rules](#)

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Kokol, Dan

From: Broux, Christelle (MECP) <Christelle.Broux@ontario.ca>
Sent: Monday, December 19, 2022 12:56 PM
To: Kokol, Dan
Subject: RE: Emergency Bypass Follow-up Report ref# 6348-CM2TBS

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Thank you Dan, I have received the bypass report and will proceed to close this incident.

I will wait to receive another report from you re: incident # 6841-CM749Z from Friday (Dec. 16th) evening.

Regards,

Christelle Broux

Senior Environmental Officer (P.O. #1896)

Halton Peel District Office | Ministry of Environment, Conservation and Parks (MECP)
4145 North Service Rd, Suite 300 | Burlington, ON | L7L 6A3
christelle.broux@ontario.ca | **289-208-5057**

Spills/After-Hours: 1-800-268-6060

Ontario

From: Kokol, Dan <DKokol@STERICYCLE.com>
Sent: December-16-22 3:59 PM
To: Broux, Christelle (MECP) <Christelle.Broux@ontario.ca>
Subject: Emergency Bypass Follow-up Report ref# 6348-CM2TBS

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Good afternoon Christelle,

Attached is the follow-up report for the use of the emergency bypass stack on December 12th 2022 reference # 6348-CM2TBS.

Respect the unexpected, think through your risks; safety is a choice you make

Dan Kokol

EHS Specialist

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Kokol, Dan

From: Broux, Christelle (MECP) <Christelle.Broux@ontario.ca>
Sent: Thursday, December 22, 2022 9:44 AM
To: Kokol, Dan
Subject: RE: Emergency Bypass Follow-up Report ref # 6841-CM749Z

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Thank you Dan, I have filed the report and will proceed to close the incident.

Regards,

Christelle Broux

Senior Environmental Officer (P.O. #1896)

Halton Peel District Office | Ministry of Environment, Conservation and Parks (MECP)
4145 North Service Rd, Suite 300 | Burlington, ON | L7L 6A3
christelle.broux@ontario.ca | **289-208-5057**

Spills/After-Hours: 1-800-268-6060

Ontario

From: Kokol, Dan <DKokol@STERICYCLE.com>
Sent: December-22-22 9:20 AM
To: Broux, Christelle (MECP) <Christelle.Broux@ontario.ca>
Subject: Emergency Bypass Follow-up Report ref # 6841-CM749Z

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Good morning Christelle,

Attached is the follow-up report for the emergency bypass that occurred on December 16th 2022 reference no. 6841-CM749Z.

Respect the unexpected, think through your risks; safety is a choice you make

Dan Kokol

Manager Operational EHS

O: +1 905-595-8532 | M: +1 416-702-5470 | stericycle.ca | shredit.ca [Stericycle's 10 Critical Safety Rules](#)

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October 2022 Incinerator Averages and Ranges

TheDate		OX6min	COmin	NOXmin	PrimTemp°C	SecTemp°C	SNCR	DemTemp°C	CarbTemp°C	DiffTemp°C	IDFanTemp°C	QuenchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
1-Oct-22	Average	13.41	1.59	46.65	892.92	1050.69	6.09	39.59	54.92	15.33	43.29	7.18	7.25	6.94	40.40	0.00	0.22	Normal(ON)/Shutdow
	Min	10.91	0.00	0.00	790.82	825.76	5.59	35.14	54.41	11.44	41.12	7.07	7.14	6.73	40.12	0.00	0.00	n/Off/Preheat/Normal
	Max	20.30	576.07	212.35	948.11	1112.80	6.50	45.06	56.53	19.36	48.89	7.30	7.34	7.16	40.55	0.00	1.00	(ON)
2-Oct-22	Average	13.92	5.26	40.80	907.26	1037.73	5.57	35.38	54.54	19.15	41.90	7.17	7.30	6.94	40.72	0.00	0.36	Normal(ON)/Shutdow
	Min	10.19	0.00	0.00	733.48	637.61	5.26	26.55	54.36	14.81	40.11	6.75	7.15	6.69	40.48	0.00	0.00	n/Off/Preheat/Normal
	Max	20.33	5181.00	123.98	981.24	1093.26	6.19	39.72	55.12	28.55	43.83	7.55	7.59	7.21	40.89	0.00	1.00	(ON)
3-Oct-22	Average	13.04	1.23	47.27	922.25	1049.09	5.48	35.94	54.42	18.47	42.00	7.26	7.33	6.82	40.77	0.00	0.25	Normal(ON)
	Min	10.81	0.00	17.61	762.75	947.00	5.07	32.87	53.73	15.64	40.36	6.78	7.25	6.67	40.52	0.00	0.00	
	Max	17.70	195.48	144.25	976.95	1092.56	5.81	38.81	54.69	21.47	44.44	7.91	7.49	6.98	40.99	0.00	1.00	
4-Oct-22	Average	13.59	0.94	50.83	891.71	1031.51	5.69	38.23	53.91	15.68	39.89	7.30	7.30	6.97	36.10	5.46	0.05	Normal(ON)/Shutdow
	Min	9.78	0.00	0.00	670.96	646.27	5.23	31.02	48.81	-13.76	30.72	7.18	7.15	6.66	4.72	0.00	0.00	n/Off/Preheat/Normal
	Max	20.37	251.80	197.90	972.59	1136.74	6.22	62.61	55.26	23.44	43.79	7.92	7.39	7.56	40.87	39.43	1.00	(ON)
5-Oct-22	Average	12.18	2.76	76.27	942.29	1057.04	6.11	37.17	54.75	17.58	43.10	7.21	7.34	6.85	40.09	39.69	0.21	Normal(ON)
	Min	10.16	0.00	20.57	817.74	969.62	5.77	34.76	54.41	15.50	41.08	7.18	7.27	6.69	39.47	38.57	0.00	
	Max	15.54	830.28	257.76	983.85	1138.26	6.57	39.05	55.72	19.94	44.75	7.23	7.41	7.29	41.03	41.16	1.00	
6-Oct-22	Average	12.20	3.90	70.05	978.65	1058.03	6.39	35.90	55.36	19.45	43.81	7.24	7.27	6.87	40.78	40.67	0.04	Normal(ON)
	Min	7.30	0.00	17.77	895.29	1005.97	6.12	28.60	54.63	15.68	42.49	7.19	7.16	6.77	40.60	40.38	0.00	
	Max	14.23	839.38	240.00	1012.81	1122.33	6.62	40.00	56.73	26.67	45.71	7.42	7.34	6.96	41.04	40.90	1.00	
7-Oct-22	Average	12.78	6.46	56.03	864.79	1040.64	5.82	36.09	54.73	18.64	42.91	7.28	7.32	6.91	40.58	40.35	0.46	Normal(ON)/Shutdow
	Min	7.30	0.00	0.00	624.41	602.44	5.27	27.91	53.93	14.36	39.44	7.19	7.00	6.77	40.31	40.07	0.00	n/Off/Preheat/Normal
	Max	20.36	2915.00	240.00	1012.81	1122.33	6.62	40.41	56.73	27.05	45.71	7.80	7.71	7.23	41.04	40.90	1.00	(ON)
8-Oct-22	Average	13.85	1.78	40.76	915.95	944.89	5.38	35.17	52.12	16.95	38.02	7.50	7.55	7.01	35.98	35.60	0.17	Normal(ON)/Shutdow
	Min	8.21	0.00	0.00	601.01	257.82	5.11	29.63	31.85	-29.49	15.57	7.20	7.22	6.70	0.10	0.00	0.00	n/Off/Preheat
	Max	20.37	464.20	122.31	989.22	1118.90	5.82	62.29	54.69	24.82	42.31	9.04	8.74	8.10	40.98	40.49	1.00	
9-Oct-22	Average	12.66	11.60	39.18	804.67	1024.19	5.82	37.54	54.09	16.55	42.56	7.52	7.65	7.22	38.27	39.09	0.77	Preheat/Normal(ON)/
	Min	7.22	0.00	0.00	600.92	596.27	5.46	28.29	38.15	-12.45	22.20	7.19	7.28	6.75	14.65	14.66	0.00	Shutdown/Off/Prehea
	Max	20.33	9179.50	158.28	932.15	1135.16	6.23	50.59	55.67	26.59	45.63	8.78	8.51	7.90	39.64	40.22	1.00	t/Normal(ON)
10-Oct-22	Average	12.65	6.14	49.61	955.20	1055.87	5.77	34.59	53.97	19.37	41.72	7.23	7.37	6.99	39.04	39.97	0.04	Normal(ON)/Shutdow
	Min	10.57	0.00	0.00	793.28	863.47	5.38	31.08	50.19	13.53	40.46	7.19	7.20	6.75	38.92	39.74	0.00	n/Off/Preheat
	Max	20.29	1724.69	182.36	988.29	1110.82	5.99	37.51	54.88	23.39	43.38	7.62	8.33	7.70	39.21	40.17	1.00	
11-Oct-22	Average	12.27	2.61	46.03	926.29	1055.77	5.98	36.98	54.93	17.95	43.61	7.29	7.39	7.02	38.93	40.05	0.18	Preheat/Normal(ON)
	Min	10.26	0.00	12.46	753.13	981.27	5.35	30.91	54.35	12.93	40.26	7.20	7.25	6.82	38.70	39.73	0.00	
	Max	14.94	730.53	172.56	977.97	1093.24	6.56	42.62	55.76	23.60	45.55	7.69	8.35	7.73	39.11	40.28	1.00	
12-Oct-22	Average	12.20	3.72	57.74	974.82	1058.60	6.48	38.16	55.31	17.14	44.33	7.26	7.31	7.03	38.61	39.83	0.20	Normal(ON)
	Min	10.62	0.00	10.58	927.59	1025.83	6.25	36.22	54.49	13.88	43.33	7.21	7.25	6.84	38.22	39.41	0.00	
	Max	14.59	739.63	166.86	1000.59	1099.54	6.74	41.79	56.07	18.97	45.82	7.39	7.39	7.96	38.76	39.97	1.00	
13-Oct-22	Average	11.99	3.64	69.01	959.25	1074.89	6.29	35.42	55.24	19.82	43.40	7.74	7.48	7.17	39.25	40.36	0.29	Normal(ON)/Shutdow
	Min	8.31	0.00	0.09	927.55	1006.17	5.63	29.84	54.40	17.32	41.06	7.19	7.27	6.67	38.42	39.68	0.00	n
	Max	14.60	913.50	370.99	997.64	1173.19	6.76	38.27	56.78	24.64	45.15	9.33	8.10	8.31	39.74	40.84	1.00	
14-Oct-22	Average	12.60	4.38	56.59	947.77	1061.10	5.52	32.69	54.43	21.74	41.21	9.21	7.64	7.09	39.66	40.61	0.91	Shutdown/Off/Normal
	Min	10.42	0.00	0.00	897.45	1003.98	5.37	28.62	54.22	17.08	39.67	7.88	7.17	6.75	39.55	40.35	0.00	(ON)
	Max	20.35	807.68	160.44	987.84	1113.80	5.71	37.40	54.57	25.82	42.69	9.86	8.28	7.51	39.73	40.91	1.00	
15-Oct-22	Average	13.01	7.21	49.45	931.12	1036.30	5.69	34.20	54.32	20.13	41.74	9.01	8.00	7.29	39.55	40.43	0.98	Normal(ON)Shutdown
	Min	10.65	0.00	0.00	737.96	508.44	5.20	19.39	50.04	13.17	37.87	3.74	7.65	7.02	39.41	40.34	0.00	/Off/Preheat/Normal(
	Max	20.39	4032.60	127.19	1004.33	1093.02	5.97	41.56	57.48	38.09	44.13	10.40	9.90	8.30	39.68	40.57	1.00	(ON)
16-Oct-22	Average	12.67	3.67	51.35	955.93	1055.58	5.57	31.63	54.46	22.83	42.07	9.38	8.01	7.21	39.58	40.61	0.82	Normal(ON)Shutdown
	Min	9.80	0.00	0.00	843.96	904.13	5.26	29.07	54.41	18.56	40.99	9.02	7.64	6.98	39.46	40.42	0.00	/Off/Preheat/Normal(
	Max	20.16	762.40	118.55	1000.20	1092.93	5.94	35.88	54.56	25.45	43.66	9.86	8.64	7.61	39.72	40.75	1.00	(ON)
17-Oct-22	Average	13.05	5.40	47.13	914.35	1037.27	5.60	33.55	54.51	20.95	42.64	9.40	8.14	7.35	39.55	40.68	1.00	Normal(ON)Shutdown
	Min	10.20	0.00	0.00	697.41	567.87	5.07	24.49	52.50	12.76	39.71	5.64	7.47	6.97	39.32	40.23	1.00	/Off/Preheat/Normal(
	Max	20.37	3008.78	126.56	963.17	1081.96	5.86	42.11	56.11	30.48	45.89	11.79	10.29	8.57	39.73	40.87	2.00	(ON)
18-Oct-22	Average	13.45	3.59	68.28	869.48	1017.46	5.37	35.76	54.19	18.43	41.40	9.20	7.69	7.46	38.55	39.27	0.97	Normal(ON)Shutdown
	Min	9.61	0.00	0.00	619.66	419.42	5.12	26.71	44.20	-8.14	25.72	8.27	6.72	6.74	15.81	15.97	0.00	/Off
	Max	20.37	829.10	252.03	962.57	1151.64	5.54	52.34	55.20	27.41	45.68	11.46	8.83	8.59	39.82	40.79	1.00	



October 2022 Incineration Feed Data

theDate	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DailySum	Monthly Sum
01-Oct-22	498.30	500.00	569.70	552.70	593.20	551.80	118.90	425.70	545.40	450.90	484.40	5.80	0.00	0.00	0.00	113.00	503.10	10.10	0.00	554.30	512.40	512.10	505.60	502.40	8509.80	259803.90
02-Oct-22	500.90	500.40	525.20	550.00	502.70	530.20	144.60	0.00	230.80	34.80	270.00	508.50	505.10	41.10	505.50	502.00	0.00	0.00	0.00	0.00	0.00	484.20	510.40	503.60	7350.00	
03-Oct-22	503.90	0.00	506.80	501.70	504.50	505.40	147.10	213.00	512.30	554.20	277.60	503.90	521.10	144.20	511.30	367.00	512.70	410.60	242.70	554.00	553.60	514.20	589.10	348.80	9999.70	
04-Oct-22	538.40	523.40	527.70	506.70	504.00	504.20	167.60	547.60	495.60	557.30	547.20	549.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	551.50	553.90	556.10	255.30	7886.30	
05-Oct-22	555.30	554.40	559.20	556.80	568.00	553.20	183.60	468.20	513.80	507.00	509.60	504.30	500.40	500.20	524.80	500.60	498.20	495.30	276.00	351.10	320.00	0.00	0.00	0.00	10000.00	
06-Oct-22	553.20	563.80	563.40	556.60	603.20	560.70	147.80	369.00	431.80	524.00	470.40	515.50	388.90	412.60	276.20	391.20	305.30	402.00	5.80	0.00	0.00	565.40	596.60	508.60	9712.00	
07-Oct-22	305.80	0.00	121.60	503.00	505.50	506.00	0.00	0.00	0.00	0.00	0.00	0.00	609.10	609.10	553.40	585.20	578.60	586.60	572.90	578.10	591.00	578.40	570.90	247.30	8602.50	
08-Oct-22	550.20	508.30	507.10	551.10	538.50	516.20	126.30	359.00	499.10	507.00	641.50	351.00	501.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6156.90	
09-Oct-22	557.20	559.50	551.40	577.70	516.50	278.40	0.00	0.00	0.00	0.00	0.00	199.40	251.10	303.20	325.90	387.60	304.70	401.90	341.80	549.00	503.30	558.50	551.80	254.10	7973.00	
10-Oct-22	549.40	462.80	555.60	566.30	561.10	590.80	212.60	366.60	504.70	504.50	503.40	474.70	504.70	505.00	503.80	503.00	501.20	503.00	233.00	304.50	0.00	0.00	0.00	0.00	9410.70	
11-Oct-22	561.30	556.20	571.00	560.00	556.40	568.20	230.80	453.90	510.60	180.80	523.50	327.80	542.50	201.30	503.60	502.90	536.40	509.00	533.20	626.40	440.30	1.90	2.00	0.00	10000.00	
12-Oct-22	553.30	563.00	530.70	509.20	524.20	535.70	151.40	470.20	516.70	562.50	341.70	505.70	444.70	230.20	509.40	492.10	467.30	374.90	327.00	507.90	502.10	380.10	0.00	0.00	10000.00	
13-Oct-22	483.00	501.20	267.90	508.20	504.70	551.20	243.80	503.30	501.50	498.00	504.20	500.70	503.80	504.90	529.60	502.70	503.60	500.90	200.80	425.90	607.10	0.00	0.00	0.00	9847.00	
14-Oct-22	0.00	217.10	459.20	601.40	348.40	561.80	230.60	501.00	506.00	502.40	501.80	501.40	505.10	502.50	522.70	500.10	502.50	501.40	208.80	232.70	396.10	270.20	437.30	0.00	9510.50	
15-Oct-22	502.30	501.80	506.00	285.60	304.70	0.00	0.00	0.00	0.00	0.00	511.90	546.30	427.30	503.60	578.70	507.30	511.00	601.10	606.20	500.10	506.60	508.60	500.20	202.40	9111.70	
16-Oct-22	382.20	548.80	506.60	510.90	502.30	471.50	69.20	551.00	558.20	604.20	554.00	602.10	613.70	607.90	607.40	0.00	0.00	0.00	0.00	310.90	348.50	537.90	556.70	205.20	9649.20	
17-Oct-22	501.00	501.40	520.60	507.20	505.70	500.30	206.50	502.80	521.90	556.40	563.50	547.40	566.00	570.20	582.80	0.00	0.00	0.00	0.00	0.00	0.00	603.30	548.40	130.40	8935.80	
18-Oct-22	459.90	504.60	605.50	557.80	506.50	484.30	142.80	425.10	500.70	0.00	500.90	500.50	508.00	500.20	457.00	454.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7107.90	
19-Oct-22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
20-Oct-22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	510.10	642.95	646.85	1799.90	
21-Oct-22	641.40	656.00	608.60	612.60	607.00	503.20	166.80	258.20	0.00	0.00	560.80	538.40	572.80	602.00	510.30	244.50	555.50	502.00	202.20	473.70	457.70	368.80	357.50	0.00	10000.00	
22-Oct-22	573.50	552.40	575.70	476.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	489.70	574.50	549.80	378.60	550.90	510.50	519.60	592.20	554.30	6898.00	
23-Oct-22	553.50	556.60	553.90	551.20	563.20	345.50	277.40	501.50	512.50	492.50	0.00	0.00	520.00	503.60	525.90	555.20	527.50	516.20	160.90	0.00	606.30	0.00	0.00	0.00	8823.40	
24-Oct-22	12.80	0.00	37.60	567.30	442.10	561.20	274.00	500.80	546.60	563.00	556.20	558.50	572.90	548.60	552.20	550.90	550.60	552.70	237.30	504.20	501.40	515.00	182.50	0.00	9888.40	
25-Oct-22	503.70	500.20	506.30	484.60	207.40	9.40	0.00	0.00	485.90	616.00	403.80	552.80	575.30	560.60	575.30	581.20	552.90	581.60	409.50	501.50	502.10	516.00	372.00	0.00	9998.10	
26-Oct-22	515.70	505.20	508.80	502.00	501.40	504.00	198.70	552.20	550.80	565.10	568.10	558.40	552.50	270.30	555.90	564.30	557.70	508.60	216.00	467.10	276.10	1.10	0.00	0.00	10000.00	
27-Oct-22	604.10	618.20	509.00	501.80	606.70	615.30	176.60	603.40	604.30	600.70	604.20	551.80	500.30	505.60	500.20	597.80	500.10	501.20	298.70	0.00	0.00	0.00	0.00	0.00	10000.00	
28-Oct-22	551.30	550.90	555.60	230.30	555.20	437.40	219.00	390.60	500.60	0.00	0.00	0.00	0.00	0.00	0.00	94.60	601.10	656.00	365.10	551.80	552.60	583.40	626.20	166.10	8187.80	
29-Oct-22	551.20	554.80	570.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.80	0.00	61.70	106.40	504.40	522.50	500.90	539.60	527.20	4445.30	
30-Oct-22	515.20	555.70	506.00	516.10	529.20	514.40	116.70	0.00	573.70	562.30	380.50	571.30	571.60	508.50	507.10	505.60	431.40	90.60	358.90	501.50	623.50	560.20	0.00	0.00	10000.00	
31-Oct-22	519.80	507.80	518.20	538.10	572.50	508.10	427.10	552.40	605.80	602.30	605.90	610.20	631.10	601.90	607.10	301.60	312.80	214.30	207.40	159.20	153.40	138.60	104.40	0.00	10000.00	



October 2022 CEM Calibration Log

TheDate	COSpanRes	CO Calgas	COSpan%Drift	NOxSpanRes	NOX Calgas	NOxSpan%drift	O2SpanRes	O2 Calgas	O2SpanDrift	COZeroRes	COZero%Drift	NOxZeroRes	NOxZero%Drift	O2ZeroRes	O2 Zerogas	O2ZeroDrift	Comment
10/13/2022 22:00	0	90.4	0	0	779	0	0	8.08	0	0	0	57	5.7	12.3	0	12.3	
10/13/2022 22:14	0	90.4	0	0	779	0	0	8.08	0	0	0	0	0	0	0	0	
10/13/2022 22:18	91	90.4	0.05999985	0	779	0	0	8.08	0	0	0	0	0	0	0	0	
10/13/2022 22:22	0	90.4	0	779	779	0	0	8.08	0	0	0	0	0	0	0	0	
10/13/2022 22:26	0	90.4	0	0	779	0	25.8	8.08	17.72	0	0	0	0	0	0	0	
10/13/2022 22:34	0	90.4	0	0	779	0	0	8.08	0	0	0	0	0	0.3	0	0.3	
10/13/2022 22:36	0	90.4	0	0	779	0	8.2	8.08	0.1199999	0	0	0	0	0	0	0	
10/24/2022 8:07	0	90.4	0	0	779	0	0	8.08	0	0	0	0	0	0	0	0	
10/24/2022 8:10	89	90.4	0.1400001	0	779	0	0	8.08	0	0	0	0	0	0	0	0	
10/24/2022 8:13	0	90.4	0	780	779	0.1	0	8.08	0	0	0	0	0	0	0	0	
10/24/2022 8:16	0	90.4	0	0	779	0	8.1	8.08	0.02000046	0	0	0	0	0	0	0	
10/27/2022 10:38	0	90.4	0	0	779	0	0	8.08	0	0	0	-1	-0.1	0.1	0	0.1	
10/27/2022 10:41	91	90.4	0.05999985	0	779	0	0	8.08	0	0	0	0	0	0	0	0	
10/27/2022 10:46	0	90.4	0	780	779	0.1	0	8.08	0	0	0	0	0	0	0	0	
10/27/2022 10:50	0	90.4	0	0	779	0	8.2	8.08	0.1199999	0	0	0	0	0	0	0	



Stericycle®

O2 6 minute average < 7.5

O2 < 7.5

	Start	Stop		Op.	Stack		Actions
Date	Time	Time	Duration	Mode	O2 %	Explanation	Taken
10/6/2022	21:15	21:17	0:02	Normal	7.3	O2% dropped after a CO spike.	No waste was fed until the O2 levels returned to the normal operating range.
10/27/2022	10:47	10:48	0:01	Normal	7.2	O2% dropped during a NOx spike.	No waste was fed until the O2 levels returned to the normal operating range.

Carbon Monoxide > 8ppm 4 hour alarm



Carbon Monoxide > 8ppm 4 hour alarm

	Start	Stop		Op.	Stack CO	Stack CO		Actions
Date	Time	Time	Duration	Mode	@ 11% O2	as mg/m ³	Explanation	Taken
10/5/2022	14:00	17:00	3:00	Normal	10.9	12.6	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
10/6/2022	16:00	20:00	4:00	Normal	11.83	13.7	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
10/7/2022	4:30	11:00	6:30	Normal	15.8	18.2	The bracket that holds the ram encoder broke, resulting in the unit siting idle from 17:00 to 21:00 on Oct 6 2022 due to the internal rams not being able to cycle. Maintenance repaired the encoder bracket and normal oeperations resumed. Due to the unit siting idle for a time, when the rams cycled, multiple CO spikes occurred and caused a high 12hour average.	The incinerator was brought to a controlled shut-down. Operations resumed when the CO average returned to the normal operating range.
10/9/2022	2:00	3:00	1:00	Normal	8.9	10.3	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
10/9/2022	4:00	8:00	4:00	Normal/Shutdown	13.83	16.0	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
10/10/2022	11:00	15:00	4:00	Normal	13.06	15.1	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
10/10/2022	18:00	21:00	3:00	Normal/Shutdown	12.25	14.1	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.

Carbon Monoxide > 8ppm 4 hour alarm

10/11/2022	0:00	4:00	4:00	Normal	9.66	11.1	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
10/12/2022	12:00	15:00	3:00	Normal	8.31	9.6	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
10/13/2022	21:00	0:00	3:00	Normal	9.47	10.9	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
10/14/2022	11:30	13:00	1:30	Normal	8.31	9.6	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
10/14/2022	14:00	15:00	1:00	Normal	8.36	9.6	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
10/15/2022	2:00	8:00	6:00	Normal	9.8	11.3	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
10/16/2022	12:30	17:00	4:30	Normal	8.78	10.1	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
10/17/2022	3:00	6:00	3:00	Normal	8.87	10.2	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
10/23/2022	14:00	18:00	4:00	Normal	8.78	10.1	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
10/25/2022	4:00	8:00	4:00	Normal	11.4	13.2	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.

Carbon Monoxide > 8ppm 12 hour alarm



Carbon Monoxide > 8ppm 12 hour alarm

	Start	Stop		Op.	Stack CO	Stack CO		Actions
Date	Time	Time	Duration	Mode	@ 11% O2	as mg/m ³	Explanation	Taken
10/7/2022	7:00	16:00	9:00	Normal/Shutdown	9.07	10.5	The bracket that holds the ram encoder broke, resulting in the unit sitting idle from 17:00 to 21:00 on Oct 6 2022 due to the internal rams not being able to cycle. Maintenance repaired the encoder bracket and normal operations resumed. Due to the unit sitting idle for a time, when the rams cycled, multiple CO spikes occurred and caused a high 12hour average.	The incinerator was brought to a controlled shut-down. Operations resumed when the CO average returned to the normal operating range.
10/10/2022	18:00	23:00	5:00	Normal/Shutdown	8.71	10.1	High CO levels caused by two (2) large CO spikes during the cycling of the internal rams. A build up on the hearths of the lower chamber fell over during the cycling of the internal rams causing a spike in the CO levels.	The operator reduced his feed rate until the CO level returned to the normal operating range.
10/15/2022	5:00	8:00	3:00	Normal	8.42	9.7	High CO levels caused by large CO spikes during the cycling of the internal rams. A build up on the hearths of the lower chamber fell over during the cycling of the internal rams causing a spike in the CO levels.	The operator reduced his feed rate until the CO level returned to the normal operating range.

Secondary Chamber Temperature < 1000°C

Date	Start Time	Stop Time	Duration	Op. Mode	Temp. °C	Explanation	Actions Taken
10/9/2022	6:28	8:26	1:58	Shutdown	934	Low upper chamber temperatures were caused by an incorrect flame port air setting during shutdown.	No waste was fed during this period. The operator adjusted the flameport air setting.
10/21/2022	7:49	8:31	0:42	Normal	990	Low upper chamber temperatures were caused by an incorrect flame port air setting while the incinerator was idle.	No waste was fed during this period. The operator adjusted the flameport air setting.
10/21/2022	9:13	9:45	0:32	Normal	993	Low upper chamber temperatures were caused by an incorrect flame port air setting while the incinerator was idle.	No waste was fed during this period. The operator adjusted the flameport air setting.
10/21/2022	9:58	10:47	0:49	Normal	983	Low upper chamber temperatures were caused by an incorrect flame port air setting while the incinerator was idle.	No waste was fed during this period. The operator adjusted the flameport air setting.
10/28/2022	11:22	12:11	0:49	Shutdown	977	Low upper chamber temperatures were caused by an incorrect flame port air setting during shutdown.	No waste was fed during this period. The operator adjusted the flameport air setting.
10/29/2022	3:19	6:25	3:06	Shutdown	878	Low upper chamber temperatures were caused by an incorrect flame port air setting during shutdown.	No waste was fed during this period. The operator adjusted the flameport air setting.

Atomizer Amps < 36

	Start	Stop		Op.	Atom. A	Atom. B		Action
Date	Time	Time	Duration	Mode	amps	amps	Explanation	Taken
10/29/2022	3:30:00	6:45:00	3:15:00	Shutdown	0.0	14.7	Low atomizer amperage occurred during a controlled shut-down.	The incinerator was brought to a controlled shut-down.

Differential from Demister < 10 C



Differential from Demister < 10°C

	Start	Stop		Op.	Differential Temp		Actions
Date	Time	Time	Duration	Mode	Outlet °C	Explanation	Taken
10/21/2022	2:15	7:49	5:34	Normal	8.2	Low differential temperature was caused by a high demister temperature coupled with a low carbon inlet temperature at start-up.	The operator paused feeding while adjustments were made to bring the differential temperature back into the normal operating range.
10/29/2022	3:44	6:46	3:02	Shutdown	0	Low differential temperature was caused by a high demister temperature coupled with a low carbon inlet temperature during shutdown.	No waste was fed during this period.



November 2022 Incinerator Averages and Ranges

TheDate		OX6min	COmin	NOXmin	PrimTemp°C	SecTemp°C	SNCR	DemTemp°C	CarbTemp°C	DiffTemp°C	IDFanTemp°C	QuenchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
11/01/22	Average	13.23	5.04	45.72	929.52	1044.49	6.44	37.03	54.43	17.40	42.53	8.32	7.15	6.61	0.10	40.10	1.43	Normal(ON)/Shutdow
	Min	10.68	0.00	0.00	780.63	762.77	6.09	31.64	54.09	13.18	39.13	7.55	6.92	6.18	0.09	39.83	1.00	n/Off/Preheat/Norma
	Max	20.30	3019.50	127.81	971.84	1139.61	6.70	41.37	54.67	22.53	45.64	8.88	8.17	7.04	0.10	40.29	2.00	l(ON)
11/02/22	Average	13.46	4.37	67.02	921.34	1052.64	6.06	37.60	54.42	16.82	41.41	8.04	7.55	6.72	0.09	39.87	1.58	Normal(ON)/Shutdow
	Min	11.42	0.00	0.00	746.12	618.27	5.56	26.31	53.45	13.00	36.77	7.58	5.54	5.86	0.05	39.72	1.00	n/Off/Preheat
	Max	20.37	2725.80	180.95	965.31	1104.62	6.47	41.38	55.00	27.16	44.11	8.62	10.44	7.07	0.10	40.06	2.00	
11/03/22	Average	12.82	2.52	63.21	892.67	1065.81	6.11	38.00	54.42	16.42	42.44	7.64	6.40	6.54	0.08	40.05	1.49	Preheat/Normal(ON)
	Min	10.26	0.00	0.00	701.48	618.27	5.55	26.24	51.11	12.38	36.73	3.07	4.84	5.86	0.04	39.72	1.00	
	Max	20.37	2725.80	180.95	965.31	1116.07	6.47	42.20	55.00	27.23	45.39	9.86	10.44	7.15	0.10	40.17	2.00	
11/04/22	Average	12.85	0.48	47.99	930.44	1072.33	6.37	37.39	54.56	17.17	42.40	8.13	7.74	6.62	0.09	39.98	1.98	Normal(ON)
	Min	10.76	0.00	13.55	875.55	1007.90	5.91	33.27	54.28	13.58	39.47	7.82	7.03	6.42	0.05	39.78	1.00	
	Max	15.05	241.32	123.89	954.75	1164.68	6.81	41.38	55.11	21.07	45.67	8.51	9.25	6.93	0.10	40.15	2.00	
11/05/22	Average	12.81	0.32	44.94	941.01	1063.85	6.74	39.52	55.07	15.55	43.86	8.08	7.11	6.46	0.10	39.89	1.54	Normal(ON)
	Min	11.12	0.00	10.92	916.88	988.13	6.35	36.19	54.40	12.22	41.55	7.65	7.00	6.30	0.10	39.74	1.00	
	Max	14.87	14.67	196.10	967.97	1115.97	7.16	44.22	56.52	18.25	46.99	8.52	7.50	6.61	0.12	40.17	2.00	
11/06/22	Average	12.63	2.32	72.82	928.36	1070.72	6.40	38.30	54.85	16.55	41.88	8.42	7.01	6.37	0.10	39.69	1.87	Normal(ON)
	Min	9.88	0.00	19.59	885.66	957.14	5.91	30.00	54.31	13.38	38.73	7.79	6.96	6.07	0.10	39.50	1.00	
	Max	14.81	777.95	166.82	951.27	1122.73	7.15	43.48	56.96	24.41	46.62	8.84	7.20	6.52	0.10	39.79	2.00	
11/07/22	Average	12.91	0.29	68.04	959.01	1069.27	5.63	31.96	53.89	21.93	39.65	8.24	6.98	6.58	0.10	39.49	2.19	Normal(ON)
	Min	11.36	0.00	12.36	915.33	1017.02	5.24	28.92	51.95	19.59	38.02	7.69	6.97	6.50	0.08	39.35	2.00	
	Max	14.96	288.82	221.30	1007.20	1127.90	6.06	34.84	54.50	25.35	40.99	8.77	7.01	6.72	0.10	39.62	3.00	
11/08/22	Average	13.23	2.41	61.91	963.40	1083.41	5.17	29.16	52.35	23.19	38.69	7.88	6.97	6.55	0.06	39.61	2.90	Normal(ON)
	Min	11.38	0.00	15.30	936.25	1025.28	5.03	25.56	50.95	21.30	36.88	7.64	6.92	6.35	0.01	39.46	2.00	
	Max	14.83	905.51	225.23	1007.30	1173.23	5.32	30.50	53.70	25.42	41.02	8.12	7.00	6.71	0.10	39.75	3.00	
11/09/22	Average	13.60	0.31	28.31	876.30	1007.61	5.32	32.11	51.62	19.52	39.14	6.23	6.46	6.58	0.10	37.15	2.21	Normal(ON)/Shutdow
	Min	9.95	0.00	0.00	672.26	320.79	5.04	22.41	44.77	-7.11	29.15	0.00	2.54	4.66	0.10	18.83	1.00	n/Off/Preheat/Norma
	Max	20.37	45.57	92.81	969.13	1089.43	5.66	52.04	54.33	30.07	43.12	8.87	8.65	7.34	0.10	40.12	4.00	l(ON)
11/10/22	Average	12.38	0.74	57.72	920.33	1074.01	5.99	31.28	53.66	22.38	41.86	7.61	6.97	6.54	0.10	39.93	1.11	Normal(ON)
	Min	10.71	0.00	10.27	874.78	1038.62	5.57	28.40	52.47	19.57	40.34	1.88	3.61	4.73	0.10	39.66	1.00	
	Max	14.69	167.69	186.21	945.14	1144.41	6.66	34.93	54.50	25.88	44.10	8.53	7.92	6.90	0.10	40.21	2.00	
11/11/22	Average	12.43	4.31	46.97	891.49	1072.97	6.54	34.46	54.43	19.97	42.89	7.55	7.82	6.84	0.10	39.80	1.88	Normal(ON)/Shutdow
	Min	10.70	0.00	13.05	798.71	1022.56	6.18	27.93	53.30	15.87	41.57	7.30	7.33	6.68	0.10	39.61	1.00	n
	Max	14.77	964.97	100.23	927.54	1145.27	6.83	38.74	55.00	26.32	44.41	7.66	10.54	7.31	0.10	39.97	2.00	
11/12/22	Average	12.32	0.43	34.06	896.73	1068.30	6.09	34.54	54.23	19.69	42.11	7.55	7.66	6.81	0.09	39.87	2.26	Shutdown/Off/Prehea
	Min	9.11	0.00	0.00	758.24	982.91	5.56	28.67	52.65	16.28	39.35	7.33	7.06	6.58	0.06	39.76	2.00	t/Normal(ON)
	Max	17.99	105.63	81.57	949.75	1132.89	6.68	38.22	54.54	24.02	43.91	7.67	10.36	7.33	0.10	40.00	3.00	
11/13/22	Average	12.60	0.61	23.46	940.06	1062.97	5.40	31.06	52.96	21.90	41.42	7.51	7.64	6.95	0.10	39.90	2.80	Normal(ON)
	Min	10.67	0.00	8.65	855.75	1023.31	5.01	24.90	50.35	19.53	38.97	7.34	7.32	6.85	0.10	39.75	2.00	
	Max	14.80	423.89	57.84	991.09	1113.74	5.68	34.75	54.48	25.47	43.14	7.63	8.04	7.05	0.10	40.19	3.00	
11/14/22	Average	12.84	3.25	32.61	983.60	1085.67	5.33	30.25	51.85	21.60	41.53	7.57	7.41	6.94	0.10	40.24	3.20	Normal(ON)
	Min	10.14	0.00	7.58	933.74	1041.78	5.03	25.13	48.33	15.74	39.95	7.43	6.99	6.80	0.10	39.95	2.00	
	Max	14.71	466.43	113.54	1008.09	1204.96	5.76	36.49	54.50	25.36	44.25	8.07	7.80	7.06	0.10	40.44	4.00	
11/15/22	Average	15.36	3.78	21.09	741.23	753.20	5.55	43.91	45.09	1.18	32.05	8.00	7.98	7.20	0.07	28.45	2.95	Normal(ON)/Shutdow
	Min	7.80	0.00	0.00	404.81	55.47	5.33	28.60	23.12	-49.02	7.21	7.33	6.96	6.62	0.00	0.00	0.00	n/Off/Preheat/Norma
	Max	20.41	699.94	81.12	970.57	1095.99	6.21	72.33	55.14	24.37	45.33	9.09	9.00	7.60	0.10	41.48	5.00	l(ON)
11/16/22	Average	12.10	2.34	44.92	864.27	1067.44	5.86	30.92	53.81	22.89	40.82	7.70	7.05	6.65	0.10	41.05	1.88	Normal(ON)
	Min	10.12	0.00	10.33	708.60	1033.16	5.52	25.37	52.99	19.60	38.98	7.33	6.82	6.46	0.09	40.90	1.00	
	Max	13.61	462.86	190.29	938.14	1082.23	6.04	34.58	54.49	27.62	43.69	7.95	7.32	6.88	0.10	41.24	3.00	
11/17/22	Average	15.86	0.72	22.88	804.00	717.72	5.56	41.94	43.23	1.29	29.47	7.88	7.43	7.13	0.07	27.06	1.72	Normal(ON)/Shutdow
	Min	10.82	0.00	0.00	381.80	93.88	5.21	21.21	22.72	-48.38	7.90	4.52	5.12	6.09	0.00	0.00	0.00	n/Off
	Max	20.40	133.57	98.00	993.97	1115.72	5.92	74.64	52.99	30.41	40.85	9.80	8.50	8.00	0.10	41.21	3.00	
11/18/22	Average	16.22	2.45	17.62	409.15	526.02	6.09	59.34	41.52	-17.83	25.58	6.97	6.91	6.85	0.02	18.28	1.16	Off/Preheat/Normal(
	Min	8.14	0.00	0.00	163.98	52.88	4.90	25.56	25.91	-50.24	6.72	0.00	2.75	4.94	0.00	0.00	0.00	ON)
	Max	20.42	561.41	122.45	874.67	1079.38	6.48	79.68	57.78	22.99	50.07	10.77	8.60	7.83	0.10	41.42	4.00	



November 2022 Incinerator Averages and Ranges

TheDate		OX6min	COMin	NOXmin	PrimTemp°C	SecTemp°C	SNCR	DemTemp°C	CarbTemp°C	DiffTemp°C	IDFanTemp°C	QuenchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
11/19/22	Average	13.96	0.63	25.07	863.19	926.00	5.60	36.45	52.61	16.16	39.15	7.75	7.33	6.85	0.09	37.09	1.66	Normal(ON)/Shutdown/Off
	Min	10.78	0.00	0.00	588.25	65.18	5.01	22.12	30.97	-33.44	10.86	7.19	6.19	5.93	0.01	0.00	0.00	
	Max	20.37	72.24	106.73	974.87	1102.71	6.11	64.51	54.61	31.79	45.27	9.13	8.02	7.34	0.10	40.76	3.00	
11/20/22	Average	12.54	2.62	46.15	710.81	907.89	5.77	41.91	49.96	8.05	35.61	8.24	7.28	6.92	0.04	32.55	1.75	Off/Preheat/Normal(ON)
	Min	8.81	0.00	0.00	451.85	56.86	5.36	32.55	27.18	-35.35	8.25	7.75	6.96	6.67	0.00	0.00	0.00	
	Max	20.39	777.50	106.76	831.71	1090.83	6.08	64.39	56.05	21.42	45.50	9.13	8.70	7.40	0.10	40.49	3.00	
11/21/22	Average	12.54	1.87	49.32	867.56	1076.90	5.94	37.24	54.73	17.49	42.41	7.78	7.05	6.73	0.10	41.53	2.79	Normal(ON)/Shutdown/Normal(ON)
	Min	10.33	0.00	13.31	800.59	1008.61	5.33	32.72	54.15	12.51	39.29	3.15	4.73	5.70	0.07	40.51	2.00	
	Max	15.01	779.87	128.17	925.40	1156.52	6.67	43.66	56.18	21.57	46.80	8.28	7.73	7.03	0.10	41.90	3.00	
11/22/22	Average	13.08	7.73	36.30	901.85	1054.05	5.87	33.15	54.33	21.18	41.54	2.25	5.11	5.90	0.10	41.40	2.68	Normal(ON)
	Min	9.75	0.00	10.86	761.95	696.14	5.21	23.42	53.18	15.41	38.34	0.00	2.53	4.37	0.09	41.24	2.00	
	Max	18.73	1119.38	109.42	977.86	1155.74	6.27	39.24	56.23	29.80	43.77	7.48	8.32	7.11	0.10	41.62	3.00	
11/23/22	Average	12.49	0.25	42.57	903.32	1061.36	6.05	35.72	54.44	18.72	43.28	5.12	7.94	6.21	0.10	41.46	2.83	Normal(ON)
	Min	11.04	0.00	16.66	860.84	1021.07	5.47	31.69	53.23	13.94	41.89	0.14	5.08	5.16	0.10	41.38	2.00	
	Max	14.29	38.70	92.87	932.78	1084.64	6.19	40.82	55.00	22.03	45.47	10.02	12.47	7.04	0.10	41.58	4.00	
11/24/22	Average	12.82	2.92	52.64	906.51	1064.36	6.07	35.48	54.58	19.11	43.49	6.20	6.45	6.44	0.10	41.60	3.20	Normal(ON)
	Min	10.94	0.00	17.86	854.37	1017.11	5.44	30.68	53.69	13.45	42.02	0.16	2.92	5.07	0.10	41.38	2.00	
	Max	14.79	653.30	141.49	936.42	1103.81	6.62	41.50	55.61	23.61	45.47	10.33	9.72	6.95	0.10	41.82	4.00	
11/25/22	Average	12.43	3.13	62.61	897.77	1076.81	6.31	37.47	54.36	16.89	43.01	10.06	8.81	6.44	0.10	41.56	3.51	Normal(ON)
	Min	8.79	0.00	-0.05	791.88	1018.62	5.79	29.66	51.93	13.13	37.46	9.43	7.23	6.15	0.10	41.18	2.00	
	Max	15.96	646.20	376.38	957.44	1172.37	6.75	42.19	55.35	22.34	45.58	10.59	11.09	6.71	0.10	41.70	4.00	
11/26/22	Average	12.37	4.95	55.98	867.83	1073.06	6.20	37.07	54.41	17.35	41.33	9.87	9.93	6.56	0.10	41.30	1.01	Normal(ON)
	Min	9.72	0.00	13.63	700.85	1015.96	5.67	28.62	52.01	12.05	35.72	8.98	7.17	6.23	0.10	41.11	1.00	
	Max	15.56	807.63	158.32	988.58	1195.12	6.62	42.97	55.03	24.19	45.60	10.62	13.08	6.80	0.10	41.44	2.00	
11/27/22	Average	12.08	1.62	37.78	940.69	1047.03	6.46	41.32	54.75	13.42	45.50	9.80	7.56	6.67	0.10	41.14	1.33	Normal(ON)
	Min	10.02	0.00	0.00	881.17	985.91	6.24	36.42	54.41	9.59	42.01	9.54	6.11	6.26	0.10	40.89	1.00	
	Max	14.63	24.12	94.35	968.57	1067.30	6.70	46.25	55.96	18.02	49.01	10.00	8.10	6.81	0.10	41.34	2.00	
11/28/22	Average	12.64	3.04	46.78	969.83	1052.64	6.04	38.56	54.60	16.04	44.34	9.09	6.69	6.32	0.10	41.23	1.74	Normal(ON)
	Min	8.67	0.00	0.00	720.66	1009.33	5.41	28.29	54.34	12.26	39.58	7.35	3.04	5.31	0.10	41.03	1.00	
	Max	15.46	524.35	116.91	1142.23	1082.93	6.37	42.55	54.91	26.08	47.51	9.86	7.68	6.57	0.10	41.33	2.00	
11/29/22	Average	12.63	1.86	63.47	905.49	1052.12	6.15	38.76	54.70	15.95	45.14	7.76	6.33	6.01	0.10	41.21	1.88	Normal(ON)
	Min	9.85	0.00	17.35	556.50	966.03	5.63	32.13	54.33	9.44	41.99	3.75	3.42	4.72	0.10	41.12	1.00	
	Max	15.29	545.14	187.39	1154.99	1167.66	6.60	49.44	58.89	22.31	52.78	10.25	10.50	6.82	0.10	41.50	2.00	
11/30/22	Average	11.95	0.91	72.87	1034.86	1072.09	6.27	37.29	54.45	17.16	43.40	8.48	8.17	6.32	0.10	41.22	2.00	Normal(ON)
	Min	9.64	0.00	0.00	833.41	1004.38	5.97	33.22	54.18	14.36	41.18	7.72	5.22	5.47	0.10	40.97	2.00	
	Max	15.41	98.57	233.14	1154.87	1156.39	6.78	40.30	54.67	21.01	45.42	9.73	11.05	6.56	0.10	41.31	2.00	



November 2022 Incinerator Feed Data

TheDate	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DailySum	Monthly Sum	
01-Nov-22	520.20	504.30	502.20	504.60	547.60	544.50	146.30	521.40	503.80	202.30	602.40	607.70	564.90	612.90	601.90	601.50	602.90	603.50	0.00	0.00	12.20	0.00	594.00	98.90	10000.0	256321.8	
02-Nov-22	554.80	560.30	553.80	556.10	553.90	305.50	229.90	559.50	607.60	558.70	609.30	587.40	603.40	561.00	601.60	604.70	602.40	424.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00		9636.0
03-Nov-22	555.00	557.60	552.10	570.20	551.60	333.50	182.30	601.60	626.00	628.00	618.60	616.60	611.00	240.20	602.10	553.40	560.50	359.60	119.00	204.30	0.00	0.00	0.10	0.00	9643.3		
04-Nov-22	602.50	615.40	604.20	589.20	631.10	627.00	288.70	561.30	510.40	371.00	130.90	509.00	515.60	411.90	338.10	430.30	337.40	318.80	300.60	302.60	308.40	309.20	386.40	0.00	10000.0		
05-Nov-22	451.50	496.00	466.80	457.40	501.90	467.10	423.20	503.00	503.60	503.00	504.80	499.40	504.00	501.10	503.70	0.00	0.00	0.00	0.00	313.40	561.90	225.30	188.00	659.80	9234.9		
06-Nov-22	602.30	603.00	597.00	625.40	600.50	575.70	0.00	403.90	465.40	453.10	510.60	527.40	511.30	615.30	503.10	501.50	510.10	502.20	117.00	272.80	103.30	129.30	265.20	0.00	9995.4		
07-Nov-22	500.30	509.00	320.20	501.50	508.10	584.40	213.20	199.50	345.70	446.40	443.00	550.70	600.60	601.60	288.30	600.50	598.80	404.20	372.90	449.00	291.60	246.70	278.40	0.00	9854.6		
08-Nov-22	520.90	550.10	550.80	517.40	546.00	575.80	242.70	355.80	502.30	504.80	345.50	516.80	503.60	505.20	505.30	432.80	527.80	301.20	306.80	262.90	368.80	465.60	91.10	0.00	10000.0		
09-Nov-22	503.20	523.80	505.40	506.40	515.20	517.90	203.50	504.70	524.20	615.10	0.00	0.00	0.00	0.00	0.00	0.00	202.40	475.20	312.60	606.70	601.10	605.60	610.70	610.10	8943.8		
10-Nov-22	606.20	602.90	606.00	604.40	611.60	616.50	442.20	328.40	368.10	330.00	558.50	521.10	602.40	520.90	527.20	551.80	580.00	532.60	66.50	236.40	186.30	0.00	0.00	0.00	10000.0		
11-Nov-22	599.20	599.20	606.70	602.00	603.10	600.90	171.10	498.10	509.30	455.30	499.70	501.20	497.00	502.40	507.20	507.30	504.70	473.70	254.90	349.30	157.70	0.00	0.00	0.00	10000.0		
12-Nov-22	601.00	601.80	603.00	602.50	602.00	601.30	140.00	552.20	551.20	552.80	555.60	577.60	502.40	550.30	510.60	506.40	306.80	204.40	203.20	175.10	282.30	175.20	42.30	0.00	10000.0		
13-Nov-22	516.60	519.90	501.80	510.80	548.50	525.40	210.00	504.80	502.60	506.00	281.40	409.30	401.40	409.90	552.90	518.50	213.70	0.00	0.00	410.70	375.80	9.60	378.50	0.00	8808.1		
14-Nov-22	569.50	496.00	500.40	130.10	509.80	403.20	357.10	0.00	125.00	510.00	526.70	502.30	0.00	103.80	530.30	513.10	508.90	556.80	656.00	0.00	10.70	507.60	552.20	502.20	9071.7		
15-Nov-22	512.40	511.00	501.10	501.80	0.00	504.20	275.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	432.20	502.60	606.20	607.70	433.30	5388.2		
16-Nov-22	607.50	602.70	621.10	610.20	602.90	554.00	202.60	475.70	426.80	553.00	565.80	502.80	500.20	520.90	524.60	535.60	486.60	557.10	426.20	123.70	0.00	0.00	0.00	0.00	10000.0		
17-Nov-22	600.80	606.60	601.30	605.90	656.80	615.20	346.50	508.40	501.60	71.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5115.0		
18-Nov-22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	75.50	533.00	508.70	505.80	339.20	524.60	512.90	512.60	510.10	505.00	4527.4		
19-Nov-22	503.40	505.20	502.00	505.00	508.80	505.50	178.00	486.00	0.00	0.00	174.00	373.80	522.50	570.20	554.20	560.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6449.3		
20-Nov-22	0.00	0.00	0.00	0.00	459.10	323.60	283.30	504.40	508.90	514.40	509.20	502.80	502.20	560.50	501.00	503.00	503.20	512.20	176.90	611.10	601.80	497.60	295.40	493.80	9364.4		
21-Nov-22	319.60	432.80	400.70	368.40	403.80	349.70	0.00	0.00	0.00	0.00	564.40	550.50	525.60	501.10	514.00	500.40	507.50	514.20	304.00	500.20	247.30	505.80	505.00	268.60	8783.6		
22-Nov-22	500.30	503.80	510.00	209.30	1.10	0.00	0.00	418.80	461.40	250.50	576.20	180.60	133.00	0.00	0.00	0.00	0.00	505.80	288.10	505.00	508.80	502.00	507.40	304.20	6866.3		
23-Nov-22	501.80	502.20	502.50	501.90	440.40	510.10	104.40	510.30	532.80	602.90	433.40	502.30	515.40	30.60	550.10	522.80	406.70	412.40	419.40	477.90	610.40	170.80	238.50	0.00	10000.0		
24-Nov-22	502.60	500.20	501.70	503.80	502.40	501.70	156.60	481.80	527.00	524.20	518.70	410.80	609.70	606.40	602.40	608.40	617.10	592.20	165.00	482.70	0.00	84.60	0.00	0.00	10000.0		
25-Nov-22	580.50	597.30	600.20	602.60	602.30	606.40	212.30	412.80	503.80	517.80	510.40	506.00	504.20	105.20	509.30	538.10	502.60	321.20	531.50	659.80	75.70	0.00	0.00	0.00	10000.0		
26-Nov-22	606.40	607.30	601.10	601.20	603.50	484.80	165.20	506.50	508.70	318.20	0.00	0.00	0.00	0.00	0.00	0.00	400.40	244.70	152.20	501.00	503.00	501.60	473.60	209.10	7988.5		
27-Nov-22	414.70	504.80	502.60	505.70	508.60	510.70	103.80	0.00	418.80	416.40	0.00	415.80	405.20	253.00	0.00	451.40	265.00	401.40	403.40	426.50	337.80	421.60	470.00	69.30	8206.5		
28-Nov-22	501.80	501.20	314.40	205.10	183.80	99.40	213.70	172.20	302.50	511.40	335.80	502.00	148.60	0.00	0.00	0.00	0.00	0.00	404.50	500.20	506.30	496.10	144.80	0.00	6043.8		
29-Nov-22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	353.60	506.20	512.50	419.60	214.60	439.60	420.40	481.70	506.50	513.40	205.20	524.00	506.30	337.30	21.20	285.20	6247.3		
30-Nov-22	257.60	269.80	285.60	308.40	278.40	192.60	53.80	147.60	508.20	506.80	528.40	0.00	0.00	0.00	0.00	502.60	601.50	609.40	198.00	422.20	207.70	24.90	28.60	221.60	6153.7		



November 2022 CEM Calibration Log

TheDate	COSpanRes	CO Calgas	COSpan%Drift	NOxSpanRes	NOX Calgas	NOxSpan%drift	O2SpanRes	O2 Calgas	O2SpanDrift	COZeroRes	COZero%Drift	NOxZeroRes	NOxZero%Drift	O2ZeroRes	O2 Zerogas	O2ZeroDrift	Comment
11/25/2022 23:23	0	90.4	0	0	779	0	0	8.08	0	0	0	0	0	0.4	0	0.4	
11/25/2022 23:27	91	90.4	0.05999985	0	779	0	0	8.08	0	0	0	0	0	0	0	0	
11/25/2022 23:31	0	90.4	0	779	779	0	0	8.08	0	0	0	0	0	0	0	0	
11/25/2022 23:34	0	90.4	0	0	779	0	8.1	8.08	0.02000046	0	0	0	0	0	0	0	

Secondary Chamber Temperature < 1000°C

Date	Start Time	Stop Time	Duration	Op. Mode	Temp. °C	Explanation	Actions Taken
11/6/2022	7:01	7:31	0:30	Normal	975	Low upper chamber temperatures were caused by an incorrect flame port air setting while the incinerator was idle.	No waste was fed during this period. The operator adjusted the flameport air setting.
11/15/2022	4:42	5:18	0:36	Normal	973	Low upper chamber temperatures were caused by an incorrect flame port air setting while the incinerator was idle.	No waste was fed during this period. The operator adjusted the flameport air setting.
11/22/2022	5:52	7:31	1:39	Normal	800	Low upper chamber temperatures were caused by an incorrect flame port air setting while the incinerator was idle.	No waste was fed during this period. The operator adjusted the flameport air setting.
11/29/2022	6:36	9:43	3:07	Normal	993	Low upper chamber temperatures were caused by an incorrect flame port air setting while the incinerator was idle.	No waste was fed during this period. The operator adjusted the flameport air setting.

Carbon Monoxide > 8ppm 4 hour alarm



Carbon Monoxide > 8ppm 4 hour alarm

	Start	Stop		Op.	Stack CO	Stack CO		Actions
Date	Time	Time	Duration	Mode	@ 11% O2	as mg/m ³	Explanation	Taken
11/1/2022	16:00	19:00	3:00	Normal	9.42	10.9	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
11/2/2022	17:00	18:00	1:00	Normal	9.25	10.7	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
11/8/2022	18:00	21:00	3:00	Normal	10.27	11.9	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
11/11/2022	21:00	1:00	4:00	Shutdown	26.1	30.1	High CO levels caused by a large CO spike during the cycling of the internal rams.	No waste was fed during this period. The incinerator was brought to a controlled shutdown.
11/14/2022	12:00	15:00	3:00	Normal	8.6	9.9	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
11/15/2022	6:00	10:00	4:00	Normal	12.66	14.6	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
11/20/2022	21:30	2:00	4:30	Normal	11.57	13.4	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
11/21/2022	9:00	13:00	4:00	Normal	14.37	16.6	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
11/22/2022	9:00	13:00	4:00	Normal	14.37	16.6	High CO levels caused by two (2) large CO spikes during the cycling of the internal rams.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
11/22/2022	15:00	21:00	6:00	Normal	15.09	17.4	High CO levels caused by two (2) large CO spikes during the cycling of the internal rams.	The operator reduced his feed rate until the CO level reurned to the normal operating range.

Carbon Monoxide > 8ppm 4 hour alarm

11/24/2022	12:30	17:00	4:30	Normal	9.32	10.8	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
11/25/2022	17:00	20:00	3:00	Normal	9.52	11.0	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
11/26/2022	9:30	14:00	4:30	Normal	10.67	12.3	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
11/26/2022	17:00	21:00	4:00	Normal	8.48	9.8	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.

Carbon Monoxide > 8ppm 12 hour alarm



Carbon Monoxide > 8ppm 12 hour alarm

	Start	Stop		Op.	Stack CO	Stack CO		Actions
Date	Time	Time	Duration	Mode	@ 11% O ₂	as mg/m ³	Explanation	Taken
11/22/2022	15:00	3:00	12:00	Normal	10.22	11.8	High CO levels caused by two (2) large CO spikes during the cycling of the internal rams. A build up on the hearths of the lower chamber fell over during the cycleing of the internal rams causing a spike in the CO levels.	The operator reduced his feed rate until the CO level returned to the normal operating range.

Quench pH out of Range (<6.4pH / >10.4pH)



Quench pH out of Range (<6.4pH / >10.4pH)

	Start	Stop		Op.	Quench		Action
Date	Time	Time	Duration	Mode	pH	Explanation	Taken
11/22/2022	18:23	12:00	17:37	Normal	1.1	Low pH levels were caused by a malfunction of the pH control.	Maintenance corrected the pH control values.
11/24/2022	12:46	22:49	10:03	Normal	2	Low pH levels were caused by a malfunction of the pH control.	Maintenance corrected the pH control values.
11/29/2022	11:53	15:11	3:18	Normal	4.8	Low pH levels were caused by a malfunction of the pH control.	Maintenance corrected the pH control values.

Condenser pH out of range (<6.4pH / >10.4pH)



Condenser pH out of range (<6.4pH / >10.4pH)

	Start	Stop		Op.	Condenser		Action
Date	Time	Time	Duration	Mode	pH	Explanation	Taken
11/23/2022	17:10	23:10	6:00	Normal	11.26	High pH levels were caused by a malfunction of the pH control.	Maintenance corrected the pH control values.
11/26/2022	9:55	19:17	9:22	Normal	11.84	High pH levels were caused by a malfunction of the pH control.	Maintenance corrected the pH control values.
11/29/2022	9:56	16:07	6:11	Normal	4.4	Low pH levels were caused by a malfunction of the pH control.	Maintenance corrected the pH control values.

Atomizer pH out of Range (<6.4pH / > 10.4pH)



Atomizer pH out of Range (<6.4pH / > 10.4pH)

[illegible]



December 2022 Incinerator Averages and Ranges

TheDate		OX6min	COmin	NOXmin	PrimTemp°C	SecTemp°C	SNCR	DemTemp°C	CarbTemp°C	DiffTemp°C	IDFanTemp°C	QuenchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
12/1/2022	Average	12.08	5.99	46.96	971.14	1074.80	5.74	33.76	53.95	20.19	42.90	8.14	7.44	6.54	0.10	41.40	1.93	Normal(ON)
	Min	9.94	0.00	15.53	776.86	1029.61	5.22	25.94	52.11	14.74	38.58	7.34	5.23	6.14	0.10	41.27	1.00	
	Max	15.20	913.93	91.93	1065.36	1173.76	6.06	39.69	54.51	26.28	45.90	8.96	8.05	6.97	0.10	41.61	2.00	
12/2/2022	Average	12.00	1.41	45.77	1023.18	1059.38	5.93	35.45	54.22	18.77	44.39	7.38	9.33	6.67	0.10	41.30	2.34	Normal(ON)
	Min	10.03	0.00	0.00	970.65	992.62	5.45	31.47	53.11	13.77	42.21	7.26	8.01	6.50	0.09	41.06	2.00	
	Max	20.30	77.24	107.40	1040.80	1088.92	6.32	40.70	54.55	22.95	46.66	7.75	10.51	6.82	0.10	41.43	3.00	
12/3/2022	Average	12.58	19.08	46.41	910.28	1024.44	6.09	32.22	54.00	21.78	43.62	8.29	9.94	6.12	0.10	41.13	2.11	Normal(ON)/Shutd own/Off/Normal(O N)
	Min	8.02	0.00	0.00	653.10	617.16	5.01	19.61	50.04	16.13	38.85	7.70	8.61	5.22	0.10	40.92	1.00	
	Max	20.37	2959.44	149.16	1031.19	1110.51	6.90	38.68	54.87	30.43	46.65	10.10	10.22	6.90	0.10	41.43	3.00	
12/4/2022	Average	19.86	7.36	3.96	344.56	177.87	6.21	61.67	38.41	-23.26	20.09	9.71	7.67	7.24	0.06	6.15	0.20	Normal(ON)/Shutd own/Off
	Min	10.48	0.00	0.00	119.91	38.19	5.01	18.16	21.70	-47.01	5.81	9.04	7.27	6.65	0.01	0.00	0.00	
	Max	20.41	813.33	118.16	954.80	1047.36	6.80	80.96	64.04	31.29	38.83	10.26	8.59	7.40	0.10	41.20	2.00	
12/5/2022	Average	17.47	1.45	8.98	248.61	406.60	6.57	63.38	36.04	-27.34	23.13	8.68	7.85	7.02	0.02	9.68	0.17	Off/Preheat/Norma l(ON)
	Min	8.97	0.00	0.00	70.87	31.67	6.10	30.12	21.53	-46.71	16.46	1.86	7.78	5.04	0.00	0.00	0.00	
	Max	20.42	553.12	57.62	760.38	1086.39	6.80	77.30	55.79	24.09	44.35	10.40	7.90	7.40	0.10	39.60	1.00	
12/6/2022	Average	12.27	0.25	32.33	922.10	1060.53	6.31	32.41	54.21	21.79	39.79	6.53	6.76	5.77	0.10	39.41	0.85	Normal(ON)
	Min	10.46	0.00	8.52	761.07	997.60	6.08	28.30	53.01	17.39	36.02	1.73	6.17	4.96	0.10	39.03	0.00	
	Max	15.13	77.66	118.76	989.15	1108.49	6.54	37.13	54.58	24.71	42.57	9.25	7.78	6.54	0.10	39.82	1.00	
12/7/2022	Average	12.81	2.47	27.93	955.26	1056.45	6.20	31.96	54.55	22.59	44.31	8.70	7.13	6.41	0.10	40.05	1.00	Normal(ON)/Shutd own/Preheat/Norm al(ON)
	Min	9.52	0.00	0.00	756.60	889.28	5.36	23.00	51.21	10.93	38.45	6.24	6.76	5.42	0.10	33.64	1.00	
	Max	20.32	770.27	128.36	1046.60	1108.49	7.25	67.96	79.37	28.76	69.42	10.90	10.00	7.75	0.10	42.20	1.00	
12/8/2022	Average	13.84	2.72	37.40	904.95	1039.10	5.81	28.57	51.93	23.36	42.08	9.06	7.66	8.60	0.10	42.00	0.90	Normal(ON)/Shutd own/Preheat/Norm al(ON)
	Min	10.77	0.00	0.00	618.45	793.11	4.99	14.01	43.74	18.37	37.00	5.24	5.16	7.75	0.09	41.08	0.00	
	Max	20.37	625.10	150.34	997.22	1163.01	6.17	35.91	54.99	30.21	45.28	11.92	9.57	9.08	0.10	42.56	1.00	
12/9/2022	Average	13.08	1.90	36.83	943.73	1058.15	5.56	29.72	51.43	21.71	41.72	10.70	7.95	8.38	0.10	41.33	1.00	Normal(ON)
	Min	10.45	0.00	15.18	741.03	996.82	5.29	25.83	33.33	7.22	35.98	8.92	6.59	6.56	0.09	41.21	1.00	
	Max	15.54	641.87	90.09	1021.68	1117.33	5.77	34.33	54.52	27.06	44.75	12.08	9.29	9.03	0.10	41.42	1.00	
12/10/2022	Average	12.92	1.56	33.47	1011.25	1056.13	5.30	27.31	51.75	24.44	41.57	9.20	7.92	6.88	0.10	41.27	1.00	Normal(ON)
	Min	10.84	0.00	11.91	939.11	1012.67	5.10	23.98	43.90	16.00	38.54	5.40	5.52	5.15	0.10	40.96	1.00	
	Max	15.40	459.25	90.58	1085.82	1115.14	5.59	31.70	54.22	28.56	44.20	11.09	9.50	7.80	0.10	41.48	1.00	
12/11/2022	Average	13.67	2.15	22.62	845.03	1033.87	5.46	28.52	53.59	25.07	43.41	9.11	7.56	7.39	0.10	41.30	1.25	Normal(ON)
	Min	9.49	0.00	10.29	654.87	966.68	5.08	21.70	52.00	20.89	39.77	6.71	6.00	6.49	0.10	41.03	1.00	
	Max	15.95	676.41	67.41	979.78	1077.57	5.82	33.61	54.50	30.33	46.13	11.39	9.50	8.05	0.10	41.41	2.00	
12/12/2022	Average	13.94	1.47	32.21	969.26	1018.42	6.04	32.64	54.18	21.54	42.60	9.03	7.24	6.61	0.09	39.97	1.18	Normal(ON)/Shutd own/Off/Preheat/ Normal(ON)
	Min	10.75	0.00	0.00	659.93	468.09	5.02	16.67	47.78	-10.65	35.65	6.71	5.00	5.50	0.03	17.67	0.00	
	Max	20.37	530.66	127.22	1055.77	1089.11	12.31	75.54	72.24	31.11	61.77	11.54	8.39	7.84	0.10	41.83	2.00	
12/13/2022	Average	13.30	4.69	31.01	932.19	1052.53	5.22	25.96	51.29	25.33	40.58	7.91	7.20	6.26	0.10	41.47	1.46	Normal(ON)
	Min	0.13	0.00	-0.54	755.96	984.12	5.02	22.35	49.52	22.84	38.29	7.19	6.33	5.80	0.10	41.35	1.00	
	Max	19.98	822.66	473.79	1036.29	1092.37	5.43	29.77	52.70	27.53	42.58	8.69	7.73	6.72	0.10	41.68	2.00	
12/14/2022	Average	13.33	4.69	39.30	929.53	1062.28	5.25	25.27	50.90	25.63	40.48	7.74	7.30	6.75	0.10	40.90	1.80	Normal(ON)
	Min	11.67	0.00	10.15	830.67	1028.33	5.05	21.32	49.55	23.87	38.54	7.41	7.22	6.51	0.10	39.31	1.00	
	Max	15.28	593.51	170.26	984.16	1109.32	5.39	27.60	52.42	28.31	42.02	7.98	7.38	7.13	0.10	41.65	2.00	
12/15/2022	Average	13.08	6.60	42.87	915.36	1059.31	5.66	28.51	52.61	24.11	42.59	7.87	7.12	6.83	0.10	39.41	2.04	Normal(ON)
	Min	9.85	0.00	0.00	750.44	1018.03	5.27	22.78	50.36	20.38	40.03	7.41	5.62	6.39	0.09	39.25	1.00	
	Max	18.31	991.03	152.41	984.05	1134.07	5.96	33.75	54.30	30.47	45.13	9.96	7.60	7.40	0.10	39.58	3.00	
12/16/2022	Average	14.76	3.10	19.49	934.06	1026.24	5.98	29.72	52.26	22.54	42.23	8.38	7.07	7.15	0.10	39.41	2.70	Normal(ON)/Off/Pr eheat/Normal(ON)
	Min	10.87	0.00	-2.20	696.94	487.36	5.01	16.57	44.20	17.53	34.14	7.67	4.70	6.72	0.10	38.69	1.00	
	Max	20.37	1720.43	59.16	994.72	1092.64	7.93	36.85	54.51	31.43	45.58	10.47	7.64	8.43	0.10	40.00	4.00	
12/17/2022	Average	13.24	9.96	29.38	720.88	1039.63	6.50	30.32	55.85	25.53	42.41	8.03	7.08	6.81	0.04	37.38	1.31	Normal(ON)/Shutd own/Normal(ON)
	Min	9.29	0.00	-6.60	616.56	691.94	5.24	21.55	51.85	14.48	37.59	4.58	5.39	5.73	0.00	22.19	1.00	
	Max	20.36	1070.30	90.62	882.71	1086.13	11.58	57.99	72.62	31.61	60.12	9.92	7.81	8.88	0.10	39.91	3.00	
12/18/2022	Average	13.47	2.32	25.46	782.53	1041.35	5.48	26.56	53.49	26.94	41.28	7.90	7.19	6.78	0.09	38.95	1.51	Normal(ON)/Shutd own/Normal(ON)
	Min	8.50	0.00	10.14	577.01	996.51	5.19	21.72	51.75	23.39	38.83	5.71	5.96	6.57	0.06	38.46	1.00	
	Max	15.36	676.31	67.60	934.60	1082.52	5.73	31.05	54.50	30.05	43.78	8.25	7.34	7.04	0.10	39.48	2.00	



December 2022 Incinerator Averages and Ranges

TheDate		OX6min	COmin	NOXmin	PrimTemp°C	SecTemp°C	SNCr	DemTemp°C	CarbTemp°C	DiffTemp°C	IDFanTemp°C	QuenchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
12/19/2022	Average	13.46	0.15	34.66	675.38	1010.01	5.34	27.82	51.53	23.70	38.68	6.13	5.78	6.85	0.07	36.43	1.05	Normal(ON)/Shutd
	Min	9.89	0.00	0.00	545.29	488.33	5.05	21.97	42.39	-3.53	22.82	0.84	2.78	6.03	0.03	17.49	0.00	own/Off/Preheat/
	Max	20.37	66.95	71.75	857.05	1076.61	5.67	47.73	54.49	30.01	43.52	9.31	7.86	7.31	0.10	41.76	2.00	Normal(ON)
12/20/2022	Average	13.08	0.45	40.38	813.80	1036.94	6.97	35.99	57.55	21.56	47.47	8.19	7.33	7.06	0.10	41.05	1.30	Normal(ON)/Shutd
	Min	9.73	0.00	-1.73	665.52	567.90	5.16	19.98	50.88	10.18	39.81	6.67	6.75	6.51	0.08	39.03	1.00	own/Off/Preheat/
	Max	20.37	309.99	99.00	1006.20	1100.52	9.95	57.46	70.48	32.75	61.87	9.68	8.58	7.36	0.10	42.05	2.00	Normal(ON)
12/21/2022	Average	13.00	0.13	46.34	976.49	1058.43	5.89	33.62	53.86	20.24	42.90	8.19	7.29	6.92	0.10	41.05	2.00	Normal(ON)
	Min	10.56	0.00	22.56	770.45	998.46	5.10	29.04	51.57	16.68	40.19	6.91	6.73	6.51	0.10	40.79	2.00	
	Max	15.58	77.42	100.42	1039.93	1166.12	6.49	37.79	54.57	23.12	45.09	9.39	8.26	7.34	0.10	41.25	2.00	
12/22/2022	Average	13.51	0.99	45.25	950.37	1006.46	6.46	35.81	53.58	17.77	42.12	8.73	7.69	7.98	0.10	38.80	2.17	Normal(ON)/Shutd
	Min	9.43	0.00	0.00	670.44	408.48	6.16	30.07	43.46	-8.85	25.14	6.88	6.75	7.34	0.10	17.17	0.00	own/Off/Preheat/
	Max	20.37	479.27	102.29	1039.61	1151.93	6.61	52.39	57.22	24.30	44.97	11.00	9.45	8.43	0.10	41.10	3.00	Normal(ON)
12/23/2022	Average	12.23	0.04	41.24	954.56	1058.36	6.48	35.70	54.46	18.75	44.02	9.03	7.23	7.75	0.10	39.76	3.33	Normal(ON)
	Min	10.08	0.00	17.62	813.70	1022.29	6.41	30.86	54.37	15.60	41.71	7.71	6.57	6.87	0.10	39.58	2.00	
	Max	14.69	17.03	87.52	1027.20	1103.61	6.52	38.85	54.59	23.58	45.76	9.95	7.49	8.13	0.10	40.09	4.00	
12/24/2022	Average	12.52	0.89	48.89	1012.77	1070.88	6.42	33.92	54.36	20.43	41.96	8.14	7.24	7.86	0.10	39.55	3.87	Normal(ON)
	Min	10.18	0.00	20.90	944.36	1028.50	6.39	31.13	54.08	18.21	41.16	6.39	6.45	7.16	0.08	39.40	3.00	
	Max	14.59	269.05	105.11	1062.94	1195.36	6.46	36.14	54.53	22.96	42.59	9.60	7.65	8.57	0.10	39.66	4.00	
12/25/2022	Average	12.86	0.19	47.44	938.31	1054.80	6.47	34.55	54.28	19.72	41.85	7.52	7.22	7.78	0.10	39.57	3.18	Normal(ON)
	Min	10.69	0.00	22.24	784.49	985.86	6.44	32.34	53.21	17.42	40.47	6.11	6.52	7.10	0.10	39.38	2.00	
	Max	15.33	87.81	123.23	1015.59	1098.53	6.51	37.05	54.53	21.92	42.84	8.64	7.69	8.24	0.10	39.70	6.00	
12/26/2022	Average	12.95	0.57	56.34	985.74	1063.16	6.46	33.12	54.34	21.22	42.34	7.99	7.19	7.06	0.10	39.57	3.42	Normal(ON)
	Min	10.81	0.00	20.86	928.68	989.04	6.43	28.45	53.28	17.81	40.96	6.28	6.66	6.31	0.10	39.41	2.00	
	Max	15.39	322.86	130.94	1031.57	1123.43	6.50	36.65	54.51	24.89	43.48	9.24	7.58	7.85	0.10	39.71	5.00	
12/27/2022	Average	13.25	0.65	46.05	941.46	1068.63	6.48	33.84	54.28	20.44	42.54	8.23	7.47	6.95	0.10	39.69	4.64	Normal(ON)
	Min	10.00	0.00	19.83	778.27	1020.11	6.45	28.43	53.19	17.30	38.99	7.18	6.59	6.38	0.10	39.45	1.00	
	Max	16.11	343.53	108.99	1009.63	1201.39	6.55	37.12	54.55	24.93	44.17	11.21	8.92	7.66	0.12	39.98	6.00	
12/28/2022	Average	12.37	2.63	51.63	986.55	1089.17	6.52	35.99	54.44	18.45	40.31	7.70	7.16	6.74	0.10	39.58	1.94	Normal(ON)
	Min	9.43	0.00	20.24	853.49	998.68	6.50	34.37	54.19	15.98	39.36	6.26	6.51	6.21	0.10	39.42	1.00	
	Max	14.89	524.62	120.77	1061.78	1231.90	6.54	38.49	54.57	20.09	41.78	8.54	7.64	7.00	0.10	39.74	2.00	
12/29/2022	Average	11.60	1.48	54.21	1055.63	1076.23	6.51	34.67	54.38	19.71	42.37	8.06	7.33	6.62	0.10	39.44	2.78	Normal(ON)
	Min	9.08	0.00	19.43	1003.64	1032.38	6.49	32.88	54.02	16.80	40.53	6.55	6.59	6.21	0.10	39.26	2.00	
	Max	13.50	557.97	129.50	1105.87	1166.42	6.53	37.45	54.55	21.56	45.30	8.50	8.14	6.75	0.10	39.56	5.00	
12/30/2022	Average	12.84	1.16	54.01	994.68	1067.70	6.53	34.21	53.49	19.28	41.86	7.99	7.61	6.70	0.10	37.55	1.95	Normal(ON)/Shutd own
	Min	8.59	0.00	0.00	791.67	961.01	6.25	27.96	37.78	2.15	35.18	5.47	6.06	6.34	0.10	11.43	0.00	
	Max	20.37	328.61	123.19	1085.92	1161.83	6.66	45.08	54.54	25.14	46.37	9.66	10.38	7.01	0.10	39.57	6.00	
12/31/2022	Average	18.13	1.30	8.19	601.93	571.74	6.65	49.17	38.62	-10.55	26.12	8.31	7.18	6.79	0.07	19.20	0.20	Shutdown/Off/Preh
	Min	9.94	0.00	0.00	234.84	100.24	6.02	21.08	18.11	-47.03	8.58	0.00	2.46	4.20	0.00	0.00	0.00	eat/Normal(ON)/Sh
	Max	20.41	1695.84	76.96	968.81	1086.59	7.05	66.24	55.59	33.71	45.66	10.33	7.64	7.23	0.10	41.11	1.00	utdown/Off

December 2022 Incineration Feed Data

TheDate	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DailySum	Monthly Sum
01-Dec-22	452.40	466.10	459.20	452.50	471.90	605.40	389.10	64.90	482.20	521.40	0.00	0.00	0.00	0.00	502.30	455.60	508.60	501.60	549.40	547.50	546.30	540.90	551.10	487.20	9555.6	224238.6
02-Dec-22	378.10	479.70	454.30	498.70	412.40	474.20	464.60	522.30	519.20	544.80	511.40	501.20	513.00	146.90	588.40	521.00	514.90	323.70	0.00	531.40	410.40	301.40	339.40	48.60	10000.0	
03-Dec-22	521.40	0.00	0.00	0.00	0.00	341.80	493.80	504.40	501.50	422.80	516.20	509.80	527.20	510.30	510.80	515.70	504.90	510.70	166.80	523.20	101.20	0.00	0.00	0.00	7682.5	
04-Dec-22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
05-Dec-22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	389.00	276.30	585.00	560.20	551.40	548.60	254.00	3164.5	
06-Dec-22	552.20	562.00	553.00	559.60	555.70	562.70	211.60	218.60	511.80	536.40	187.50	518.40	513.70	374.20	513.50	508.70	526.00	537.60	554.40	606.50	335.90	0.00	0.00	0.00	10000.0	
07-Dec-22	0.00	567.40	552.30	550.90	550.10	553.30	255.30	336.00	446.80	502.70	531.90	328.60	509.00	214.60	418.40	322.70	0.00	142.50	244.70	603.50	595.50	607.50	600.30	566.00	10000.0	
08-Dec-22	588.20	602.20	600.20	603.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	128.00	508.00	504.60	518.30	514.10	510.40	53.00	0.00	457.70	577.90	353.40	552.40	251.60	7323.6	
09-Dec-22	553.00	555.60	551.50	553.60	552.10	553.20	190.80	0.00	503.30	241.80	503.50	507.00	509.60	506.80	513.40	0.00	0.00	0.00	0.00	239.80	362.50	527.40	532.60	133.40	8590.9	
10-Dec-22	201.00	545.70	117.50	549.90	618.80	230.60	277.70	500.10	515.00	539.20	518.80	429.20	505.40	0.00	505.60	505.40	510.10	507.10	107.50	543.00	566.80	125.60	0.00	0.00	8920.0	
11-Dec-22	503.20	307.60	292.20	517.10	0.00	0.00	300.20	0.00	32.80	0.00	0.00	0.00	531.40	0.00	0.00	285.40	0.00	509.70	148.30	0.00	501.00	416.90	609.20	493.00	5448.0	
12-Dec-22	508.30	505.10	539.10	503.70	139.20	0.00	0.00	0.00	100.60	502.30	107.80	0.00	0.00	0.00	0.00	0.00	112.40	424.12	306.00	203.40	0.00	0.00	523.70	153.00	4628.7	
13-Dec-22	414.20	397.70	453.40	346.70	486.40	375.40	183.90	14.80	253.90	114.10	0.00	0.00	0.00	0.00	211.60	177.20	65.30	514.70	145.60	245.40	401.90	452.40	108.60	170.20	5533.4	
14-Dec-22	551.40	231.30	263.20	57.20	0.00	0.00	0.00	548.10	390.20	411.10	475.10	475.90	240.90	260.90	300.00	292.60	206.00	613.10	359.40	478.30	222.40	0.00	0.00	0.00	6377.1	
15-Dec-22	66.30	496.20	301.00	245.00	263.50	214.60	139.60	473.30	514.90	515.50	521.60	440.50	214.30	316.10	0.00	0.00	0.00	0.00	160.00	467.20	452.20	262.00	548.30	571.50	7183.6	
16-Dec-22	388.80	188.20	255.20	334.90	334.30	245.80	76.70	104.90	256.50	64.80	78.80	71.80	59.90	245.90	399.10	272.30	354.10	106.40	0.00	68.50	242.40	0.00	0.00	0.00	4149.3	
17-Dec-22	0.00	0.00	0.00	128.80	355.80	412.30	179.00	462.30	119.00	380.00	419.00	394.30	348.00	325.10	353.90	354.40	342.20	7.90	0.00	0.00	0.00	0.00	354.90	179.20	5116.1	
18-Dec-22	154.50	292.90	373.20	371.00	0.00	0.00	0.00	0.00	110.70	193.40	188.00	198.50	78.60	244.20	100.90	179.80	118.60	171.00	87.00	106.00	0.00	71.00	53.60	0.00	3092.9	
19-Dec-22	81.20	171.30	194.80	105.80	244.70	274.30	280.10	368.40	474.30	502.10	439.10	496.00	128.00	3.20	69.20	300.00	127.00	43.60	213.00	513.40	510.70	504.00	557.00	261.60	6862.8	
20-Dec-22	506.80	510.00	510.20	523.20	530.70	0.00	0.00	0.00	206.80	96.90	246.80	218.80	603.60	617.80	639.70	639.00	611.70	560.60	223.80	604.60	600.80	294.60	0.00	103.30	8849.7	
21-Dec-22	557.60	562.60	514.80	545.60	502.60	580.80	168.00	586.20	602.70	600.90	503.00	325.50	502.60	442.60	608.60	192.20	604.40	0.00	0.00	0.00	0.00	600.40	603.80	395.10	10000.0	
22-Dec-22	503.90	503.20	505.10	500.50	508.60	551.60	291.10	554.30	558.50	557.70	559.90	558.50	551.30	605.10	670.00	0.00	0.00	0.00	0.00	0.00	0.00	47.70	552.10	71.10	8650.2	
23-Dec-22	509.60	503.80	500.80	502.10	510.20	501.70	477.30	502.60	503.10	501.90	515.00	502.70	501.70	510.60	504.80	493.60	500.10	512.10	125.20	379.50	437.80	0.00	0.00	0.00	9996.2	
24-Dec-22	516.10	512.40	515.10	506.50	542.70	558.50	327.80	551.70	553.90	561.70	481.60	504.00	213.40	551.40	558.60	202.30	557.20	186.30	106.50	513.90	532.80	398.80	0.00	0.00	9953.2	
25-Dec-22	509.70	516.80	514.10	502.20	0.00	0.00	0.00	154.40	550.30	562.50	550.60	517.50	556.70	559.40	555.90	551.40	551.80	552.40	313.10	505.00	500.90	501.70	473.60	0.00	10000.0	
26-Dec-22	504.70	502.80	508.90	614.00	507.70	508.40	281.50	557.90	550.80	508.90	502.40	500.50	502.80	502.80	504.70	243.80	501.60	223.10	0.00	335.90	546.00	590.80	0.00	0.00	10000.0	
27-Dec-22	537.00	550.90	534.40	609.90	609.30	257.00	0.00	0.00	0.00	102.00	525.00	547.60	504.50	505.40	238.50	565.50	180.40	387.60	127.20	0.00	0.00	507.30	506.10	217.70	8013.3	
28-Dec-22	357.40	507.00	500.80	308.40	115.40	200.80	242.20	181.40	191.40	534.50	500.20	229.70	0.00	0.00	0.00	0.00	184.00	581.30	260.70	500.20	406.60	409.80	400.00	240.60	6852.4	
29-Dec-22	432.90	427.00	403.80	459.80	610.30	540.60	97.50	383.80	453.10	308.40	524.00	506.90	243.20	162.20	508.80	501.20	504.50	506.10	506.60	505.10	502.00	508.10	404.00	0.00	9999.9	
30-Dec-22	570.10	605.10	614.30	609.40	0.00	81.60	19.60	0.00	0.00	0.00	300.30	237.40	530.10	606.30	604.40	606.50	604.20	600.40	178.00	107.60	0.00	0.00	0.00	0.00	6875.3	
31-Dec-22	0.00	0.00	0.00	0.00	332.40	602.60	484.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1419.4	



Stericycle®

O2 6 minute average < 7.5

O2 < 7.5

	Start	Stop		Op.	Stack		Actions
Date	Time	Time	Duration	Mode	O2 %	Explanation	Taken
12/13/2022	12:03	12:26	0:23	Normal	3.4	O2% dropped during a NOx spike.	No waste was fed until the O2 levels returned to the normal operating range.

Carbon Monoxide > 8ppm 4 hour alarm



Carbon Monoxide > 8ppm 4 hour alarm

	Start	Stop		Op.	Stack CO	Stack CO		Actions
Date	Time	Time	Duration	Mode	@ 11% O2	as mg/m ³	Explanation	Taken
12/1/2022	7:00	11:00	4:00	Normal	11.7	13.5	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
12/1/2022	14:00	19:00	5:00	Normal	11.1	12.8	High CO levels caused by large CO spikes during the cycling of the internal rams. A build up on the hearths of the lower chamber fell over during the cycleing of the internal rams causing a spike in the CO levels.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
12/3/2022	1:00	6:00	5:00	Normal	55.8	64.4	High CO levels were caused by low upper chamber temperatures	No waste was fed until the CO levels returned to the normal operating range.
12/3/2022	21:00	6:00	9:00	Normal	32.6	37.6	High CO levels were caused by low upper chamber temperatures	No waste was fed until the CO levels returned to the normal operating range.
12/11/2022	21:00	1:00	4:00	Normal	10.8	12.5	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
12/13/2022	5:01	9:00	3:59	Normal	15.3	17.7	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
12/14/2022	4:00	7:00	3:00	Normal	9.7	11.2	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
12/15/2022	12:00	18:00	6:00	Normal	15.9	18.3	High CO levels caused by large CO spikes during the cycling of the internal rams. A build up on the hearths of the lower chamber fell over during the cycleing of the internal rams causing a spike in the CO levels.	The operator reduced his feed rate until the CO level reurned to the normal operating range.

Carbon Monoxide > 8ppm 4 hour alarm

12/17/2022	3:34	13:00	9:26	Shutdown	21.86	25.2	High CO levels were caused by low upper chamber temperatures during shutdown	No waste was fed at this time. The incinerator was brought to a controlled shutdown.
12/18/2022	4:00	8:00	4:00	Normal	13.3	15.3	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
12/28/2022	2:00	3:00	1:00	Normal	8.5	9.8	High CO levels occurred after the operator harged a load of waste into the incinerator.	The operator reduced his feed rate until the CO level reurned to the normal operating range.

Carbon Monoxide > 8ppm 12 hour alarm



Carbon Monoxide > 8ppm 12 hour alarm

	Start	Stop		Op.	Stack CO	Stack CO		Actions
Date	Time	Time	Duration	Mode	@ 11% O2	as mg/m ³	Explanation	Taken
12/1/2022	15:00	19:00	4:00	Normal	9.74	11.2	High CO levels caused by large CO spikes during the cycling of the internal rams. A build up on the hearths of the lower chamber fell over during the cycleing of the internal rams causing a spike in the CO levels.	The operator reduced his feed rate until the CO level reurned to the normal operating range.
12/3/2022	1:00	6:00	5:00	Normal	21.21	24.5	High CO levels were caused by low upper chamber temperatures	No waste was fed until the CO levels returned to the normal operating range.
12/15/2022	14:00	2:00	12:00	Normal	9.75	11.3	High CO levels caused by large CO spikes during the cycling of the internal rams. A build up on the hearths of the lower chamber fell over during the cycleing of the internal rams causing a spike in the CO levels.	The operator reduced his feed rate until the CO level reurned to the normal operating range.

Secondary Chamber Temperature < 1000°C

Date	Start Time	Stop Time	Duration	Op. Mode	Temp. °C	Explanation	Actions Taken
12/3/2022	0:32	1:21	0:49	Normal	842	Low upper chamber temperatures were caused by an incorrect flame port air setting while the incinerator was idle.	No waste was fed during this period. The operator adjusted the flameport air setting.
12/3/2022	21:01	1:04	4:03	Normal	756	Low upper chamber temperatures were caused by an incorrect flame port air setting while the incinerator was idle.	No waste was fed during this period. The operator adjusted the flameport air setting.
12/11/2022	13:18	13:57	0:39	Normal	984	Low upper chamber temperatures were caused by an incorrect flame port air setting while the incinerator was idle.	No waste was fed during this period. The operator adjusted the flameport air setting.
12/11/2022	14:17	15:17	1:00	Normal	978	Low upper chamber temperatures were caused by an incorrect flame port air setting while the incinerator was idle.	No waste was fed during this period. The operator adjusted the flameport air setting.
12/30/2022	23:10	23:35	0:25	Shutdown	973	Low upper chamber temperatures were caused by an incorrect flame port air setting during shutdown.	No waste was fed during this period. The operator adjusted the flameport air setting.
12/30/2022	23:51	2:47	2:56	Shutdown	923	Low upper chamber temperatures were caused by an incorrect flame port air setting during shutdown.	No waste was fed during this period. The operator adjusted the flameport air setting.

12/31/2022	10:17	14:27	4:10	Normal	511	Low upper chamber temperatures were caused by an incorrect flame port air setting while the incinerator was idle.	No waste was fed during this period. The operator adjusted the flameport air setting.
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Quench pH out of Range (<6.4pH / >10.4pH)



Quench pH out of Range (<6.4pH / >10.4pH)

	Start	Stop		Op.	Quench		Action
Date	Time	Time	Duration	Mode	pH	Explanation	Taken
12/8/2022	17:21	6:00	12:39	Normal	11.6	High pH levels were caused by a malfunction of the pH control.	Maintenance corrected the pH control values.

Atomizer Amps < 36

	Start	Stop		Op.	Atom. A	Atom. B		Action
Date	Time	Time	Duration	Mode	amps	amps	Explanation	Taken
12/17/2022	3:35:00	6:36:00	3:01:00	Shutdown	0.0	25.2	Low atomizer amperage occurred during a controlled shut-down.	The incinerator was brought to a controlled shut-down.
12/30/2022	21:25:00	1:58:00	4:33:00	Normal/Shutd own	0.0	22.4	Low atomizer amperage occurred during a controlled shut-down.	The incinerator was brought to a controlled shut-down.
12/31/2022	11:10:00	14:28:00	3:18:00	Shutdown	0.0	14.4	Low atomizer amperage occurred during a controlled shut-down.	The incinerator was brought to a controlled shut-down.

Differential from Demister < 10 C



Differential from Demister < 10°C

	Start	Stop		Op.	Differential Temp		Actions
Date	Time	Time	Duration	Mode	Outlet °C	Explanation	Taken
12/31/2022	11:28	14:29	3:01	Shutdown	-17.3	Low differential temperature was caused by a high demister temperature coupled with a low carbon inlet temperature during shutdown.	No waste was fed during this period.