

No.	Component/ Subsystem	Winterization Requirements	Estimated Completion Date	Work Status	Recommendation/Options
1	Air Compressor and Air Pump	Drain moisture traps. Disconnect from the local disconnect.		Completed	
2	Odour Control System	Turn off suction fan at local disconnect. The media in the OCS can be left in filter as it is or stored in a dry storage.		Completed	
3	Hot water supply system	Water in the piping loop should be drained of water. Because the system is difficult to drain completely, recommendation is that the piping loop should be flushed and filled with propylene glycol to prevent freezing.		To be completed	
4	Cold water supply system	Water in the piping loop, pressure tank, UV system, filter, and building cold water services should be drained and blown out.		To be completed	
5	Magnetic Flow Meter	The pipeline feeding the flowmeter should be flushed with water, then purged with diluted caustic water, then flush with water again. Drain and blow out pipe to remove moisture from pipe and meter. Flow meter can be powered down or left on.	N/A	Flow meter remained unused since last annual calibration. Septage flow not directed through screening process. Room currently heated with electrical heater.	No further action required at this time for winterization
6	Polymer Injection System	Polymer injection system should be well flushed with water (~1 hour). Rinse with diluted caustic water to deactivate any residual polymer, then flush with diluted chlorine water, then rinsed with clean water again. On conclusion, the system should be drained and blown out with compressed air to remove residual water.	N/A	Polymer injection system was not used by past operator and remained unused. Room currently heated with electrical heater. System to be tested and flushed.	No further action required at this time for winterization
7	Polymer Mixing Tank		N/A	Mixing tank has remained unused for a number of years, currently residing in a heated room.	No further action required at this time for winterization
8	Septage Receiving Logging Station	The logging station can be left on with onboard heat to prevent condensation within the panel and reduce potential for corrosion.	TBD, pending client approval	Historically this logging station has been out of commission as PLC touch screen was previously damaged by water infiltration. Station currently covered. Program was retrieved from supplier and loaded on the new logging PLC screen.	No further action required at this time for winterization
9	Dumping Station No. 1	In the event, the site is not receiving any septage or sewerage load then dumping station no. 1 should be emptied out, flushed & power washed. Locked/Secured from entry.	12/19/22	Dumping station used when access road to lagoon is uncleared of snow and ice. Septage hauler dumps at slow rate to avoid overflow at last manhole before lagoon influent pipe as influent pipe is partially blocked. Visual inspection showed that dumping station is clear of debris	No further action required at this time for winterization
10	Dumping Station No. 2 & Bar Screen	In the event, the site is not receiving any septage or sewerage load then dumping station no. 1 should be emptied out & power washed. Locked/Secured from entry. If possible based on condition, screen should be pivoted/raised up to avoid ice formation around bars with any water accumulation at the base of the chamber.	12/19/22	Inspection showed some debris to be flushed. Debris flushed on 12/22/2022.	No further action required at this time for winterization
11	Valve Chamber	Emptied out, cleaned & power washed.	12/19/22	Inspection showed some debris to be flushed. Debris flushed on 12/22/2022.	No further action required at this time for winterization
12	MH No. 1 & 2 (to the Aeration Lagoon)	In the event, the site is not receiving any septage or sewerage load then both the manholes need to be cleaned and flushed, power washed of	01/13/23	Manholes currently free of debris. Partial blockage between lagoon and last manhole causes manhole to overflow. Pressure washed pipe using Hydro vac truck. Partial blockage still present. Inspected manholes on Jan. 9 2023 while a septage hauler was dumping using full dumping flow and septage was flowing fine in both manholes.	Further investigation of cause of partial blockage and dislodge. Attempt to reinspect the sewer lateral between lagoon and last manhole now that pipe flow was reestablished. No further action required at this time for winterization
13	FOG Storage Tank	Emptied out, cleaned & power washed.	01/13/23	Located a facility that is willing to accept the bio-waste from the FOG tank. Transportation cost and tipping fee would estimated at \$3,800 plus HST. There is a risk of not being able to remove the entire volume should the existing accumulated material require larger size pump/equipment. This item would be included in the approved \$56,000. Emptied out all liquid content and approximately 40% of solids content. Added fresh water to help with removal of balance of solids content and to protect the tank from frost damage. Balance of solids to be removed will require the use of a hydrovac truck and confined space entry. Will request approval from Townships prior to moving forward with balance of tank cleaning.	Heat tracer wires connected to avoid exposed pipe frost. Suggest to pump remaining volume to Biodigester tank and pump out header pipe to avoid frost damage. Diesel power heater required to heat the debris prior to pumping. Partially refill storage tank with lagoon water to avoid frost damage. Client approval required, this may cause odour complaints. MECP to be contacted for approval. Alternative solution would be to leave the FOG, potentially add water to cover and protect the existing infrastructure. No further action required at this time for winterization.
14	FOG Tank Temperature Sensor	Ensure tank cleaning also cleans insertion portion of temperature sensor.	01/13/23	Temperature sensor to be cleaned. once the FOG tank is emptied and cleaned.	Proceeding with winterization requirements No further action required at this time for winterization.
15	Chopper Pumps	Recommend that the chopper pump inside the FOG be flushed with choline water, cleaned, dried then stored on blocks in dry, secure location.	Pending removal of debris	Tank topped up to prevent pump frost damage.	Suggest to leave the pumps in the tanks in the event that the debris cannot be removed. In the event that the debris can be removed the pumps could be removed and should be inspected and/or replaced refurbished as required. No further action required at this time for winterization
16	Pasteurizer Tank	Emptied out, cleaned & power washed.	01/13/22		Tank was emptied when the Biodigester Process was shut down. Tank to be power washed. No further action required at this time for winterization
17	Pasteurizer Mixer	Ensure tank cleaning also cleans mixer of any accumulated material.	01/13/23		Tank was emptied when the Biodigester Process was shut down. Mixer to be power washed. No further action required at this time for winterization
18	Hydrolyzer Tank	Emptied out, cleaned & power washed.	12/22/22	Tank topped up to prevent tank frost damage. No immediate further action required	Heat tracer wires connected to avoid exposed pipe frost. Suggest to pump remaining volume to Biodigester tank and pump out header pipe to avoid frost damage. Diesel power heater required to heat the debris prior to pumping. Partially refill storage tank.
19	Hydrolyzer Temperature Sensor	Ensure tank cleaning also cleans insertion portion of temperature sensor.	01/13/22	Sensor to be cleaned once the hydrolyzer tank is emptied and cleaned.	Temperature sensor to be cleaned when tank is emptied. No Immediate further action required.
20	Hydrolyzer pH Meter	pH sensor component will not last for duration of storage. Remove sensor module.			Replacement pH meter purchased. To be installed when system is re-commissioned. No immediate further action required at this time for winterization
21	Hydrolyzer Heat Control Valve	No specific requirements, will be flushed as part of pipe flushing.		Reintroduced pure glycol in the heating loop on December 21st, 2022. Heat control valve now contains pure mixture of Glycol to prevent frost damage.	Pending further investigation. Third party contractor contacted.

22	Hydrolyzer Chopper Pump (1)	The chopper pump inside the hydrolyzer needs to be flushed with choline water and cleaned and dried then stored at a secured place.	TBD, pending client approval	Tank topped up to prevent pump frost damage. No immediate further action required	Suggest to leave the pumps in the tanks in the event that the debris cannot be removed. In the event that the debris can be removed the pumps could be removed and should be inspected and/or replaced refurbished as required. No immediate further action required at this time for
23	Digester Pressure Relief Valve	Purge piping of any residual biogas. Would recommend removal and storage within clean, dry, secure space.	12/22/22	Confirmed that Pressure relief valve purged of biogas when biodigester was shut down. PRV not removed. No immediate further action required at this time	No further action required at this time for winterization
24	Biogas Cooling Field	After the biogas flow has been stopped, piping should be purged of biogas. All the condensate water needs to be allowed to be drained. Condensation needs to allow either to percolate through the digester footing drainage or can be pumped to the valve chamber to send to the Aeration lagoon.	01/20/23	Completed	No further action required at this time for winterization
25	Boiler	The gas line of the boiler should be purged with nitrogen. The hot water system should be flooded with propylene glycol to prevent freezing and pipe damage. Power can be shut off at local disconnect.	01/20/23	Completed	No further action required at this time for winterization
26	Biogas generator/ CHP unit	Isolate the biogas line and purge with nitrogen, including headspace of engine. Batteries need to be disconnected and stored in a cool, dry, secure area and charger should be turned off. Put new oil and filters in engine before storage. Check the freeze level of the antifreeze in the engine loop. Temperature of the storage room should be between 15 deg C to 35 deg C with relative humidity 60%.	01/13/23	Completed	
27	Unblock line between digester and digestate storage	Unblock the line between the digester and the digestate storage tanks. Line is below the frost line. Work to be completed during warmer weather conditions.	Spring 2023		No further action required at this time for winterization
28	Digestate & Bio- Digester Tanks Winterization	Ensure there is a minimum of fluid at the bottom to prevent frost damage on the floor of the tanks		Completed	Liquid pumped from Lagoon Polishing Cell