ARCTIC BAY TRUCKFILL
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COMPONENTS, MANUFACTURERS, AND SUPPLIERS
TABLE 5.1

Section 9 Tab	Section 4 Tables and Figs	Description	Manufacturer and Model	Supplier
9.9	4.1	Flow Switch	McDonnel Miller FS4-3D	Optoinfo Electric Inc. 542 Bran St.. Jerome, Quebec J7Z 2B1 Ph: (514) 436-6050 Fax: (514) 436-4846
9.9	4.1	Flow Sensor	Signet 515 Rotor-X P51530-P0	Optoinfo Electric Inc. 542 Bran St.. Jerome, Quebec J7Z 2B1 Ph: (514) 436-6050 Fax: (514) 436-4846
9.9	-	Relays	Allen Bradley 700-HG45A1 and Potter & Brumfield KRPA-14AN-120	Optoinfo Electric Inc. 542 Bran St.. Jerome, Quebec J7Z 2B1 Ph: (514) 436-6050 Fax: (514) 436-4846
9.9	-	Time Delay Relays	Potter & Brumfield CNS-35-76	Optoinfo Electric Inc. 542 Bran St.. Jerome, Quebec J7Z 2B1 Ph: (514) 436-6050 Fax: (514) 436-4846
9.9	-	Terminal Blocks	Entrelec	Optoinfo Electric Inc. 542 Bran St.. Jerome, Quebec J7Z 2B1 Ph: (514) 436-6050 Fax: (514) 436-4846
9.9	4.3	Remote Control Enclosure	Telemecanique W913065520111	Optoinfo Electric Inc. 542 Bran St.. Jerome, Quebec J7Z 2B1 Ph: (514) 436-6050 Fax: (514) 436-4846
9.9	4.3	Key Switch	Allen Bradley 800T	Optoinfo Electric Inc. 542 Bran St.. Jerome, Quebec J7Z 2B1 Ph: (514) 436-6050 Fax: (514) 436-4846
9.9	4.3	Fill Timer	Paragon SWP15M	Optoinfo Electric Inc. 542 Bran St.. Jerome, Quebec J7Z 2B1 Ph: (514) 436-6050 Fax: (514) 436-4846

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Section 9 Tab	Section 4 Tables and Figs	Description	Manufacturer and Model	Supplier
9.10	4.3	Annunciator	Panalarm 910	Provan Meter 2011 Halpern Ville St.. Laurent H4S 1S3 Ph: (514) 332-3230 Fax: (514) 332-3552 Contact: M. Lachance
9.10	4.5, 4.6	Fuel Level Sensor	Magnetro Kotron Sentinel Point Level Switch 842-1001-C00	Provan Meter 2011 Halpern Ville St.. Laurent H4S 1S3 Ph: (514) 332-3230 Fax: (514) 332-3552 Contact: M. Lachance
9.10	4.3	High/Low Temperature Thermostat	Honeywell Farm-O-Stat T631A	Denbec 9855 B.Hyp. Lafontaine Anjou, Montreal, Quebec H1J 2A3 Ph: 1-800-465-0950 or (514) 355-4540 Fax: (514) 355-4346
9.10	-	Horn	Panalarm	Provan Meter 2011 Halpern Ville St.. Laurent H4S 1S3 Ph: (514) 332-3230 Fax: (514) 332-3552 Contact: M. Lachance
9.10	-	Strobe Beacon	Adapta Beacon	Edwards Unit Of General Signal 625 6th St. E Owen Sound, Ontario N4K5P8 Ph: (519) 376-2430
9.10	-	Exterior Truckfill Light	Caretaker HPCT-35-120V-LL	Cooper Industries, Inc Crouse-Hinds Airport Lighting Canada 5925 McLaughlin Road Mississauga, Ontario L5R 1B8 Ph: (905) 507-4187 Fax: (905) 501-4078
9.11	-	High Pressure Sodium Lamps	Cermalux ED-231/2 Mog. 52V	Wesco 281 Traders Blvd. Mississauga, Ontario L4Z 2E5 Ph: (905) 890-3344 Fax: (905) 890-8533

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TABLE 5.1

Section 9 Tab	Section 4 Tables and Figs	Description	Manufacturer and Model	Supplier
9.11	-	Exterior Wall Light	Holopane Wallpackette WP2B	Lumen 500- Boul. Daniel Johnson St.-Jerome, Quebec J7Y 4C5 Ph: (514) 436-3225 or 1-800-363-3678 Fax: (514) 436-2537
9.11	-	Interior Fluorescent Lights	K172120	CDE 2522 LeCorbusier Laval, Quebec H7S 2K3 Tel: (514) 438-1263 Fax: (514) 438-3728 Contact: Yvon Clement
9.11	-	Exit Light	Emergi-Lite EX42WEM12R120V	Emergi-Lite 1800 Hymus Blvd Dorval, Quebec H9P 2N6 Ph: (514) 685-2270 Fax: (514) 685-2394
9.11	-	Emergency Lights	Emergi-Lite 12ESL250	Emergi-Lite 1800 Hymus Blvd Dorval, Quebec H9P 2N6 Ph: (514) 685-2270 Fax: (514) 685-2394
9.12	4.4, 4.5	Self Regulating Heat Trace Cable	Accutron SRL5-1	Accutron 6600 Trans.Can Pointe-Claire H9R 4S2 Ph: (514) 695-7032 Fax: (514) 695-4784
9.12	4.5	Heat Trace Control Panel	Accutron TS202 Controller	Accutron 6600 Trans.Can Pointe-Claire H9R 4S2 Ph: (514) 695-7032 Fax: (514) 695-4784
9.13	4.6	Fuel Tank	Custom	Kingland Ford 922 MacKenzie Hwy Hay River, NT Ph: (867) 874-6734
9.13	4.6	Day Tank	Custom	Optoinfo Electric Inc. 542 Bran St.. Jerome, Quebec J7Z 2B1 Ph: (514) 436-6050 Fax: (514) 436-4846

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Section 9 Tab	Section 4 Tables and Figs	Description	Manufacturer and Model	Supplier
9.13	4.6	Fusible Valve	Webstone No. 819 Fusible	Deschenes 8335, St.. Michel Montreal, Quebec H1Z 3E6 Ph: (514) 374-3110 Fax: (514) 374-5141 Contact: Pierre Milot
9.13	4.6	Gate Valve	Jenkins 50mm	Deschenes 8335, St.. Michel Montreal, Quebec H1Z 3E6 Ph: (514) 374-3110 Fax: (514) 374-5141 Contact: Pierre Milot
9.13	4.6	Pipe Elbows	50 mm Grinnell	Deschenes 8335, St.. Michel Montreal, Quebec H1Z 3E6 Ph: (514) 374-3110 Fax: (514) 374-5141 Contact: Pierre Milot
9.13	4.6	Tank Gauge	King 4448	Deschenes 8335, St.. Michel Montreal, Quebec H1Z 3E6 Ph: (514) 374-3110 Fax: (514) 374-5141 Contact: Pierre Milot
9.13	4.6	Vent Cap	King 4021	Deschenes 8335, St.. Michel Montreal, Quebec H1Z 3E6 Ph: (514) 374-3110 Fax: (514) 374-5141 Contact: Pierre Milot
9.13	4.6	Flexible Connection	Flexi Tube 50	Deschenes 8335, St.. Michel Montreal, Quebec H1Z 3E6 Ph: (514) 374-3110 Fax: (514) 374-5141 Contact: Pierre Milot
9.14	-	Temperature Control	Johnson A350P Electronic Proportional Plus Integral Temperature Control	EECOL Electric Ltd. 23 Melvile Dr. Yellowknife, Northwest Territories Ph: (867) 873-3964 Fax: (867) 873-3965

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Section 9 Tab	Section 4 Tables and Figs	Description	Manufacturer and Model	Supplier
9.14	-	Termperature Stage Module	Johnson S350 Temperature Stage Module	EECOL Electric Ltd. 23 Melvile Dr. Yellowknife, Northwest Territories Ph: (867) 873-3964 Fax: (867) 873-3965
9.14	-	Blower Box	Loren Cook 1.5" SP and 5/8" SP	B.P.L. Sales Manitoba, Winnepeg Phone: 204-694-9790 Fax: 204-694-7221
9.14	-	Blower Motor	Doer LR22132	EECOL Electric Ltd. 23 Melvile Dr. Yellowknife, Northwest Territories Ph: (867) 873-3964 Fax: (867) 873-3965
9.14	-	Motor Starter for Blower Motor	Square D AG-2	CDE 2522 LeCorbusier Laval, Quebec H7S 2K3 Tel: (514) 438-1263 Fax: (514) 438-3728 Contact: Yvon Clement
9.14	-	Damper	Tamco Series 9000	B.P.L. Sales Manitoba, Winnepeg Phone: 204-694-9790 Fax: 204-694-7221
9.14	-	Damper Actuator	Belimo NF24-SR	B.P.L. Sales Manitoba, Winnepeg Phone: 204-694-9790 Fax: 204-694-7221
9.14	-	Damper Actuator	Belimo LM24-10P-J6	B.P.L. Sales Manitoba, Winnepeg Phone: 204-694-9790 Fax: 204-694-7221
9.15	-	Satellite Phone	Mitsubishi ST121	Mitsubishi Electric 4299 14th Avenue Markham, Ontario L3R 0J2 Ph: (905) 475-7728 Fax: (905) 475-7958
9.15	-	Auto Dialer	Dialex 4500 Emergency Voice Dialer	Deltavision 395 Industrial Blvd. St. Eustache, Quebec J7R 5R3 Ph: (514) 974-3244 Fax: (514) 974-3242

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Section 9 Tab	Section 4 Tables and Figs	Description	Manufacturer and Model	Supplier
9.15	-	Power Supply	Deltavision DV124F	Deltavision 395 Industrial Blvd. St. Eustache, Quebec J7R 5R3 Ph: (514) 974-3244 Fax: (514) 974-3242
9.15	-	Satellite Phone and Auto Dialer Interface	Telular Version 5	Telular Canada Inc 93 Skyway Avenue, Suite 108 Toronto, Ontario M9W 6N6 Ph: 1-800-646-5455 Fax: 1-416-675-0676
9.16	-	Chlorine Tester	HACH Pocket Colorimeter for Chlorine	Anachemia Science 15006-116 Avenue Edmonton, Alberta T5M 3T4 Ph: (403) 451-0665 Fax: (403) 452-2478
9.16	-	Fire Extinguisher	Flag 400-11155ULC 20lb Nitrogen	Fyremaster Equipment Sales 4101 49a Ave Yellowknife, NT X1A 1A3 Ph: (867) 873-6990
9.16	-	Eyewash Station	Fisher Scientific EYE2	Fisher Scientific 112 Colonnade Road Nepean, Ontario K2E 7L6 Ph: 1-800-234-7437 Fax: 1-800-463-2996
9.16	-	Valved Respirators	NIOSH 8500 by 3M	Fisher Scientific 112 Colonnade Road Nepean, Ontario K2E 7L6 Ph: 1-800-234-7437 Fax: 1-800-463-2996
9.16	-	Safety Gloves	Trionic Special Blend	Fisher Scientific 112 Colonnade Road Nepean, Ontario K2E 7L6 Ph: 1-800-234-7437 Fax: 1-800-463-2996
9.16	-	Rubberized Safety Apron	Fisherbrand 01-357	Fisher Scientific 112 Colonnade Road Nepean, Ontario K2E 7L6 Ph: 1-800-234-7437 Fax: 1-800-463-2996

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Section 9 Tab	Section 4 Tables and Figs	Description	Manufacturer and Model	Supplier
9.16	-	Face Shield	Nalgene 11-409-5	Fisher Scientific 112 Colonnade Road Nepean, Ontario K2E 7L6 Ph: 1-800-234-7437 Fax: 1-800-463-2996
9.17	-	Combination Storage Wardrobe Unit	Kleton Combination FB041	Tenaquip 20701 Ste-Marie Ste. Anne Bellevue, Quebec H9X 3L2 Ph: 1-800-263-7576 or (514) 457-7800 Fax: 1-800-263-3324 or (514) 457-9807
9.17	-	Cabinet Table	Kleton Model FF075	Tenaquip 20701 Ste-Marie Ste. Anne Bellevue, Quebec H9X 3L2 Ph: 1-800-263-7576 or (514) 457-7800 Fax: 1-800-263-3324 or (514) 457-9807
9.17	-	Winch	Posi-Brake LA692 1500lb	Tenaquip 20701 Ste-Marie Ste. Anne Bellevue, Quebec H9X 3L2 Ph: 1-800-263-7576 or (514) 457-7800 Fax: 1-800-263-3324 or (514) 457-9807
9.17	-	Winch Cable	Stainless Steel 3.2 MM 2100 lb	General Bearing 789 St. Georges St.. Jerome, Quebec Ph: (514) 438-3315 Fax: (514) 438-3315
9.17	-	Janitorial Equipment	Misc.	Belisle & Carriere 1313 St.. Antoine boul. St.-Antoine, Quebec H1P 1Y5 Ph: (514) 438-7834 Fax: (514) 438-2806
9.17	-	Interior Paint	Laurentide Interior Semi-gloss Latex 694-500	Cyr & Nepveu St.-Anne Des Plain 323, Monte Gagnon Montreal, Quebec J0N 1H0 Ph: (514) 478-0907

6.0 OPERATING PROCEDURES

6.1 General

The water supply system for Arctic Bay, N.W.T. consists of:

.1 An intake screen connected to a 300 mm diameter high density polyethylene (HDPE) intake casing. The casing accesses the water supply lake, and enters the pump house through a wall.

.2 A submersible pump connected to a 100 mm HDPE intake pipe is situated inside the 300 HDPE casing at a depth near the intake screen.

.3 A chlorine solution is made in a mix tank by mixing calcium hypochlorite with water. The chlorine solution is drained to a feed tank after mixing.

.4 A flow switch is activated when water is flowing through the truckfill line. This switch activates an injection pump.

.5 The injection pump pumps the chlorine solution from the feed tank into the truckfill line. The injection pump stops when a no-flow condition exists in the truckfill line.

6.2 Start-up Procedures

Throughout the normal life of the facility, it should rarely have to be started from an off condition. If, for some reason, all power to the truckfill station has been switched off, follow the procedure below to restore power.

6.2.1 Start-up from Utility Power

.1 **Location**: inside station at the truckfill pump starter.
Turn the pump starter to the OFF position.

.2 **Location:** inside station at the combination electrical panel.
Turn the main disconnect on. Power should be connected to the station. If there is no power, call the utility company.

.3 Turn the truckfill pump starter to the AUTO position.

.4 Turn UPS AC Line disconnect switch to "On" if not already in this position.

6.2.2 Start-up from Prime Generator

.1 **Location:** inside pump room at the control panel.
Turn the pump starter to the OFF position.

.2 **Location:** inside station at the combination electrical panel.
Turn the main disconnect on.

.3 **Location:** adjacent to truckfill station.
Check that the fuel tank is full, and that the fuel tank supply valve and fusible link valve are open. Fill fuel tank if required.

.4 **Location:** inside generator room.
Check generator oil. Fill if required.

.5 **Location:** inside generator room.
The transfer switch is in a panel near the door. The arm inside the panel should be set to the NORMAL position (down). The selector switch on the exterior of the panel should be switched to AUTO. Consult Section 9.7 for details regarding the transfer switch.

.6 **Location**: inside station at the generator control panel.
Turn the function switch for operation to MANUAL.

.7 **Location**: on generator.
Turn the generator's keyswitch to position 3 for starting. Release the key after the engine has started. If the generator does not start, consult the engine's user manual in Section 9.7.

.8 Turn the truckfill pump starter switch to the AUTO position.

.9 Turn the UPS AC Line disconnect switch to "On".

6.3 Normal Operating Procedures

The normal operating procedures for the water supply system includes:

- Filling of water trucks.
- Chlorination system preparation.
- Main control panel operation.
- Intake screen backwashing.
- Heat trace system operation.
- Heating system operation.
- Fuel Supply

Each of these procedures is discussed in the following sub-sections.

6.3.1 Truckfilling Procedure

Trucks are filled with chlorinated water from the truckfill station for delivery to houses in Arctic Bay. The trucks are filled by either using the truckfill controller hanging from

the truckfill arm, or by using the "manual" position on the pump motor starter switch on the control panel inside the pumphouse. Normally the pump motor starter switch is set to "Auto" and the truckfill controller is used for filling trucks.

.1 **Location**: Under the truckfill arm.
Drive the truck under the truckfill arm so that the fill hole of the truck tank is directly under the pipe. Watch the arm to make sure that the truck does not hit it.

.2 **Location**: On top of the truck.
Open the fill hole and place the fill hose in the hole.

.3 **Location**: Hanging from truckfill arm.
Insert your key and turn the key switch to the 'on' position in the remote controller.

.4 There are two ways you can fill the truck with the truckfill controller:

1. Using the Timer

.1 Turn the timer to the desired time setting. Different water truck tank sizes will have different time settings.

.2 Press the 'Start' button on the truckfill controller.

.3 The pump will start pumping after a short delay. It will continue pumping until the timer completes its cycle.

.4 If the timer is set too long (i.e. tank overfilling), press the 'Stop' button on the truckfill controller. Please note that severe weather conditions may have an impact on the timer's accuracy.

.5 The 'Stop' button may be used any time during truckfilling to stop filling operations.

Manual Control

.1 To manually fill the truck, simply press the 'Start' button on the truckfill timer.

.2 The pump will start pumping after a short delay.

.3 When the truckfill tank is full, press the 'Stop' button on the truckfill controller. The pump will stop.

.5 The filling is NOT automatic. The driver should observe the filling process, and be ready to stop the pump if the truck starts overfilling. Once the pumping rate is set, the operator should be able to time how long it takes the truck to fill.

.6 Following the truckfill, turn the key switch to the 'off' position and remove the key.

.7 **Location**: On top of the truck.
Remove the fill hose from the truck and close the fill hole. Hang the hose on the hook at the end of the arm.

.8 Deliver water.

6.3.2 Chlorination Process

Chlorine is injected into the truckfill piping with a chemical injection pump. The injection pump is turned on by a flow switch when the water starts being pumped to the water truck. Chlorine kills bacteria and microorganisms in the water that might cause people to become sick. Chlorine MUST be added to all water leaving the truckfill station or residents may become sick. Never turn the chlorine system off, always ensure that it is working properly, and ensure there is sufficient solution for operation.

6.3.2.1 Chlorine Solution Mixing

Chlorine solution is mixed using calcium hypochlorite powder (65%) and water. The calcium hypochlorite powder is in 1 kg (liter) containers in the standing storage closet.

.1 **Location**: Tap for hose connection on truckfill pipe (close to temperature and pressure gauges).
Connect the water hose to the threads on tap. Put the other end of the hose into the top tank on the workbench.

.2 Close the butterfly valve on the truckfill pipe to the stop bolt, and ensure there is a truck underneath the fill arm because the valve is still partially open.

.3 Close the valve on the bottom of the mix tank, and feed tank.

.4 **IMPORTANT**: Open the 25 mm ball valve on the intake bypass hose. The open valve allows the pump to circulate the water without damaging the pump, and relieves some of the high pressure. Caution should be taken when filling the tanks as the pump does produce a very high pressure.

.5 **Location**: The control panel.
Turn the intake pump starter switch to the MANUAL position. The pump will start.

.6 Open the tap and fill the chemical tank on top of the bench to the 120 litre mark.

.7 Turn off tap.

.8 Turn the truckfill pump starter to the AUTO position. The pump will stop.

.9 Open the butterfly valve on the truckfill pipe.

.10 Close the valves for the 25 mm bypass hose.

.11 **NEVER** operate the truckfill pump with all valves closed. Either the butterfly valve must be open and a truck placed under the truckfill arm, or the bypass valve must be open. Operating the pump with no flow **will damage** it, and **high pressures are dangerous** to personnel.

.12 Put on rubber apron, rubber gloves, and face shield.

.13 Read manufacturer's safety data sheet for Calcium Hypochlorite.

.14 Add five (5) liters (bottles) of Calcium Hypochlorite 65% to water. This will give a 1 bottle of Calcium Hypochlorite to 24 liters of water ratio.

.15 Plug in mixer for two (2) hours. Unplug mixer.

.16 Let the solution settle overnight if possible.

.17 Open the valve at the bottom of the chemical mixing tank. The chlorine solution will drain into the chemical feed tank.

.18 Close valve at bottom of mix tank. Disassemble piping by unscrewing collar after the mixing tank valve.

.19 Thoroughly rinse the agitator paddle and tank with water from hose to prevent corrosion of paddle.

.20 Reassemble mix tank piping.

.21 If the butterfly valve was closed to the stop bolt, all the water collected in the water truck is to be dumped, as it will not be properly chlorinated.

.22 Fill truck with treated water.

.23 Test the first truck of day for adequate chlorination by using the HACH Colorimeter test kit. See details in following section 6.3.2.2 Chlorine Testing.

.24 Adjust the stroke length and/or rate of the injection pump to either increase or decrease the chlorine dosage if required. Retest FREE CHLORINE after adjusting the stroke and/or rate.

This procedure mixes the chlorine stock to approximately 3% chlorine by volume. A higher chlorine ratio may be used if it is found that the injection pump can not achieve adequate chlorination. A lower chlorine ratio may be used if the pump's stroke and rate are set below 40%.

6.3.2.2 Chlorine Testing

Chlorine levels must be tested for the water in the delivery truck. For safety, chlorine should be delivered to homes with a minimum free chlorine level of 0.5 mg/L. However, as there may be bacteria in the storage tanks in homes, higher levels of chlorine to 1.0 mg/L would be safer to allow for some chlorine to kill the

bacteria in the tanks. The chlorinated water should be sampled and tested daily prior to any deliveries. This will ensure that the following deliveries will be adequately chlorinated, provided that the chemical injection pump settings remain the same for that day.

The operator of the truck will have to balance the chlorine level to satisfy both the tastes of the people of the community and safety. Too much chlorine may result in the residents refusing to use the treated water. Not enough chlorine is unsafe.

6.3.2.3 Using the HACH Pocket Colorimeter Chlorine Tester

The following procedure may be used to test for free chlorine in a sample taken from the truck:

.1 Rinse both 20 ml tubes in kit with distilled water.

.2 Obtain a sample of treated water from the water truck after it has been sitting for 20 minutes (the chlorine has had time to disinfect). The sample should be taken from the top hatch of the truck. A clean measuring cup or jar may be used for this purpose.

.3 Fill both tubes to the **10 mL** fill line (the first line) with sample water from the truck.

.4 Differentiate between the two sample tubes so they do not get mixed up. One cell is the "blank", the other will be the "sample".

.5 Put the blank cell in the slot of the Colorimeter with the diamond facing you. Cover the sample with the instrument cap. Press the

"ZERO" key. The instrument will display 0.00. Remove the blank cell from the slot.

.6 Take a foil package marked FREE CHLORINE, and tear the top off. Carefully pour the contents (reagent) into the sample tube.

.7 Agitate the contents by shaking the capped tube for 15 to 20 seconds. The tube contents should start to turn to a pink, or magenta colour. If the contents **do turn to a pink colour, go to step 10.**

.8 If the sample does not turn colour at all or turns very little, the truck water is inadequately chlorinated, and should not be delivered to the residents unless its chlorine dosage is increased. You may manually add bleach to the truck to increase the dosage.

.9 If you do add additional bleach, another 20 minutes will be required for reaction time. 10 ml of bleach will raise the chlorination of 1000 litres of water by approximately 0.6 mg/l. If the truck size is 2500 litres, then 25 ml of bleach will also raise the chlorine content by approximately 0.6 mg/l. By adding bleach to under-chlorinated truck loads, you will not waste any truck loads by having to discard inadequately chlorinated water.

.10 If the sample turns pink or magenta, place the tube in the chlorine tester's slot, and cover the capped sample with the instrument cap.

.11 Press the "READ" key. The instrument will display the FREE CHLORINE result in mg/L or parts per million (ppm). It should read at 1.0 mg/l to be considered safe to deliver.

.12 Empty and rinse tubes after using.

6.3.2.4 Chlorine Injection Pump Adjustment

The chlorine injection pump is located beside the chlorine mixing tank. This pump can have both the rate of pumping and the length of the stroke adjusted to obtain the correct chlorine injection rate that will provide enough chlorine for disinfection in the water truck.

The chlorine pump will be set to provide 1.0 mg/l of residual chlorine in the water truck. It may be required to pump more than 1.0 mg/l of chlorine into the truckfill pipe to obtain a residual chlorine of 1.0 mg/l.

The test should be performed on a full truck. The filling of the truck will mix the water resulting in a test that shows the average chlorine residual of the water.

.1 **Location**: Inside the truckfill station beside the chemical pump.
Ensure the chemical pump is plugged into the receptacle labelled CHLORINE PUMP.

.2 Set the pump knobs to a rate of 80% and a stroke of 100%. This has been found to be a good starting place.

.3 **Location**: Outside at the truckfill arm.
Fill the truck per the instructions above in section 6.3.1.

.4 Allow the truck to sit for 20 minutes.

.5 Take a small sample in a measuring cup or some clean container from the fill hole in the top of the truck.

.6 Test the sample as per section 6.3.2.3, "Using the HACH Pocket Colorimeter Chlorine Tester".

.7 If the test result is below 1.0 mg/l, increase the stroke of the pump and/or the rate. However, the stroke and rate should always be between 30% and 100%.

.8 Empty the truck and repeat steps 3 to 7. Repeat the test until 1.0 mg/l residual chlorine is reached.

.9 If the test is above 1.0 mg/l, decrease the stroke and/or the rate. Follow the stroke and rate limits in step .7.

.10 Empty the truck and repeat steps 3 to 7. Repeat the steps until 1.0 mg/l residual chlorine is reached.

6.3.3 Intake Screen Backwashing

The intake screen has been sized such that cleaning should not ever be required. In the unlikely event that the screen is becoming plugged, the intake screen may be backwashed by recirculating water from the existing intake line through the casing. This procedure may help to remove some silt or material that otherwise plugs the screen. However, it is not a completely effective cleaning because the intake pump recirculates more than it will backwash. The only practical methods to completely clean the screen is to have divers unclog and clean the screen by hand, or by applying high pressure air from the inside of the screen.

6.3.4 Heat Trace System

There is a heat trace system installed against the intake pipe inside the intake casing. The electric heat trace cables in the casing will prevent freezing and aid in thawing of the pipe should it ever become frozen.

The heat trace cables are operated by a dual temperature monitor and controller called the Accutron TS 202a.

Use of the heat trace during summer is not required. The controller will be enabled, but the heat trace cables will not be activated during warmer weather.

The heat trace controller has been set to perform optimally. However, should power to the controller be disrupted for a long period, the controller may require reprogramming. See the TS-202 Programming Manual in Section 9.11 for programming details. The following identifies the general steps to setup the controller as well as some settings found to be specific for the truckfill station.

.1 **Location**: The Heat Trace Controller is inside the truckfill station above the intake pipe coming into the building.

Open the cover on the controller panel. When the unit is powered up, a power loss alarm will occur. This is normal. Press the ACK on the controller to acknowledge the alarm. You will also need to acknowledge this alarm on the main control panel (horn, strobe, and buzzer in panel) by pushing the BLACK acknowledge button, and the red ACK button on the panalarm.

.2 Press the SHIFT key to enter the TS 202 programming mode.

.3 Press the MAINTAIN TEMP key to set the operating temperature. Enter '12' which sets the operating temperature to 12°C.

.4 Press the DEAD BAND key. The DEAD BAND is defined as the number of degrees above the setpoint at which the tracer is de-energized. Set to 1°C. Whenever the intake water temperature is above 13°C the heat trace cables will be turned off.

.5 Press the AUTO TEST key. The controller will perform diagnostic tests on the circuit at preset time intervals. Enter the YES key. Set the CYCLE HOURS to 24. This will automatically test the circuits once/day. Set this alarm so that it is timed to check during normal delivery hours.

6. Press the CURRENT ALARM key. The TRIP ON HIGH AMPS will be displayed. Enter NO for this option. This will ensure power is maintained in the heat trace cables during a high amp alarm condition. The alarm must be cleared, and the problem attended to, even though the heat traces will remain in operation.

7. Press the NEXT key. The LOW TRACER CURRENT ALARM function option is displayed. This value should be left at the default value, unless an electrician or heat trace expert recommends it be changed.

8. Press the NEXT key. The HIGH TRACER CURRENT ALARM function option is displayed. This value should be left at the default value, unless an electrician or heat trace expert recommends it be changed.

.9 Press the NEXT key. The TRIP ON HI AMPS TRIP TRACER function option is displayed. This value should be left at the default value, unless an electrician or heat trace expert recommends it be changed.

.10 Press the HI GND CURRENT key. The GND FAULT MILLIAMPS function option is displayed. This value should be left at the default

value, unless an electrician or heat trace expert recommends it be changed.

.11 Press the HI GND CURRENT key, then the NEXT key. The TRIP ON HI GND TRIP TRACER function option is displayed for tracer #1. Set this value to NO. This will enable heat tracing even with ground current leakage. An alarm will sound, and the problem must be remedied as soon as possible to ensure safe operation.

.12 Press the NEXT key. The TRIP ON HI GND TRIP TRACER function option is displayed for tracer #2. Set this value to NO. This will enable heat tracing even with ground current leakage. An alarm will sound, and the problem must be remedied as soon as possible to ensure safe operation.

.13 Press the ENABLE TRACER key. The ENABLE TRACER #1 CHANGE function option is displayed for tracer #1. Set this value to YES. This will enable heat tracing, and monitoring for tracer #1. Press the NEXT key. The ENABLE TRACER #2 CHANGE function option is displayed for tracer #2. Set this value to YES. This will enable heat tracing, and monitoring for tracer #2.

.14 Press the UNITS key. The SETTINGS IN DEG C CHANGE function option is displayed. Leave this value at NO. This will display units in degrees Celsius.

.15 Press the HI TEMP SEEN key. The #1 RTD HI=???.? C RESET function option is displayed. YES will reset the present high temperature being measured as the new value. NO will retain the high temperature read previously. Normally leave the setting at NO.