

Grise Fiord RCMP Detachment

Plan 487, Partial Lots 47, 51, 52, 55. PO Box 82, Grise Fiord. Nunavut

(September-Oct 2016)

Introduction

Requirement is replacement of Residential unit chimney and furnace. Installation of arctic vent, minor plumbing and electrical repairs as identified.

Other supply items (tanks) as identified.

It is expected that all materials and supplies are to be air-lift/charter based on weight and time to complete work. Work to be completed by January 30, 2017.

Proposal Costs

This project has two parts:

Part A replacement of furnace and chimney, plumbing inspections & repairs, HVAC repairs & electrical install and repairs.

Part B, Supply of residential fuel tanks, stands. Supply of wood stove, chimney and fire-box surround protection material.

Bidders are to quote Part A and Part B separately. Part A is mandatory work and Part B is optional work. Part B will be awarded based on available funding.

Grise Fiord Detachment & Housing.

- RCMP detachment constructed 2000, 168.40 m2.
- Employee Residence on detachment lot, constructed 1996, 154.20
- Employee Residence on town lot, constructed 1996, 88.60 m2
- Storage/garage (heated) on detachment lot, constructed 1956, 40.80 m2

Project Scope – PART A

While requirements are outlined to best of our knowledge, contractor should ensure minor work is completed at same time to ensure occupational health and safety of users in work place and living spaces. If major repairs or replacements are necessary in addition to requirements noted below, contractor to contact RCMP V Division Asset Management and provide written report outlining this work. (Contact information in tender documents.)

For exterior work, due to remote location and potential for high-winds throughout the year, contractor to ensure chimney installation work-product/practices and materials used are appropriate for this environment. Materials/components must be of high quality, chimney & chimney components securely fastened and weather protected. HVAC replacement and/or upgrades e.g. replacement of furnace & chimney shall conform to CSA B139-15 code.

Contractor is responsible for clean-up and disposal of decommissioned materials and packaging e.g. old furnace, chimneys, filters, supplies, etc. Work area/work place where repairs and maintenance was carried out to be cleaned, swept by contractor.

Appendix A is a summary document from a RCMP/SNC Tank inspection report completed late 2014. Minor upgrades may have been implemented since inspection. Document provides details on tanks, furnaces, and water heaters.

Furnace in Warehouse has been replaced since but work around chimney was poorly installed. This requires repairs.

- General Scope for All Buildings
 - Inspection of heating, ventilation and plumbing for detachment, warehouse, two houses. A report is required (deliverable) within one month of completion identifying code violations, repairs, replacements or upgrades.
 - Annual servicing of all heating and plumbing.
 - Clean water tanks in detachment and both houses
 - Electrician to complete inspection of panels, electrical motors, heat trace, etc. A report is required (deliverable) within one month of completion identifying code violations, repairs or replacements needed.

- V008 – Residential House on RCMP compound
 - Supply and install new furnace and chimney
 - Replace chimney
 - Ensure new chimney is supported on roof (tied-down), install storm-flashing/weather proof collar at connection point to roof and caulk with appropriate weather/heat resistant exterior sealant.
 - Ensure chimney cap is secured using additional supports or connectors as required.
 - Replace vent connectors & draft regulators.
 - Replace oil-fired/warm air furnace.
 - Check, re-seal and/or re-insulate combustion-air intake to furnace. Use new material to wrap & insulate ducting. Ensure combustion/fresh air supply penetration through floor or wall is caulked with fire-proof/fire-stopping caulking at interior and exterior penetrations.
 - Install tiger loops on fuel line to new furnace.
 - Supply two packages of furnace filters (4-6 filters depending on packaging) sized for new furnace
 - Supply and install new kitchen, hand-sink and bath-tub faucets
 - Moen brand, no substitutions
 - Single lever unit only
 - Sprayer required on kitchen faucet
 - Braided flex hoses only
 - Supply and install new ceiling fan unit. Remote control unit
 - LED or capable of LED bulbs
 - Supply LED light bulbs
 - Supply and install new bathroom light fixture above hand-sink
 - LED or capable of LED bulbs
 - Supply LED bulbs
 - Supply and install Smoke & CO detectors in hallway
 - Unit may be combined smoke/CO unit. This is a WIRED-IN unit.
 - Supply one battery-operated smoke detector
 - Supply one battery-operated CO detector

- V007 – Residential House on town lot

- Supply & install
- Supply & Install new kitchen, hand-sink and bathroom faucets
 - Moen brand, no substitutions
 - Single lever unit only
 - Sprayer required on kitchen faucet
 - Braided flex hoses only
- Install tiger loop on furnace & water heater
- V294 – Detachment
 - Inspect and clean/PM cell extraction fans
 - Inspect cell toilets – correct flush, no leaks, etc. See attached PM for Penal Toilets
 - Install Arctic Vent on sewer stack.
 - i. On/off switch to be installed in suitable location in detachment, with label to indicate to turn on in winter/off in spring.
 - Install tiger loop on furnace & water heater
- V122 Storage/Warehouse
 - Supply and install four (4) wet/damp LED 4’ fixtures. Surface mount, Recommend Lithonia XWLED. Supply bulbs.
 - Supply and install plenums on warm air furnace.
 - Repairs to chimney collar/flashing
 - Replace/repair sections of roof sheet/cladding. Does not have to match. Repair area sufficiently to prevent leaks into storage. (See photos)
 - Install tiger loop on furnace & water heater

Project Scope – PART B

Residential sized Fuel Tanks

- Supply four (4) d/w Wilco 1135 L fuel tanks for houses, storage/warehouse and detachment. Supply pre-formed/poured concrete pads for tanks. Supply new tank stands. Supply sufficient fuel line piping from tank to heating appliances. Pre-paint pipe before transport to site. Supply installation materials – e.g. Isolation shut-offs are required on exterior and interior, flex hose. Installation as per CSA B139.
- Supply of wood stove, chimney and fire-box surround protection material suitable for residential house, see photos.
- This is supply only of materials and supplies for installation next spring.

Site Details & Photos

V294 - Grise Fiord Detachment



V294 Grise Fiord Detachment – (arctic vent)



V122 Workshop – missing roofing sections



V122 Workshop, missing roof, requires patching



V122 workshop, missing roofing, Repair flashing on roof around new chimney



V122 – workshop – supply and install plenums, replace 4 light fixtures.



V008 Grise Fiord House



V008 House



V008 – House, repair flashing on roof



V008 house, chimney requires supports/tie downs.



V008 – House, replace fan/light with LED unit.



V008 – bathroom, replace taps – hand sink and bath-tub faucets.



V008 – CO/Smoke detector.



G007 – Residence on town lot



G007 – replace taps. Hand sink & bathtub



Appendix A: Concentric RCMP/SNC Tank Inspection Report.

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Site Information	
PWGSC Number	V007 Residence
Address	Grise Fiord, NU
Building Type	Single storey, single family residential dwelling unit

Exterior Assessment	
Tank Type	Westeel, single wall tank, approximate capacity 1100L capacity. No visible name plate on tank.
Tank Condition	Fair/Poor; Corrosion beginning to penetrate surface.
Tank Location	Outdoors; east side of building. Co-ordinates: 76.419559,-82.904955
Clearance	16" to exterior wall.
Stand Type	Steel stand on stacked 2x6 wood base.
Stand Condition	Fair; Covered in surface corrosion.
Exterior Piping	2" steel piping off of tank then transitions to 1" steel pipe into building. 3/4" return piping from building tied into fill at top of the tank. Good/Fair condition; surface corrosion developing.
Exterior Valves & Accessories	Shutoff valve at tank.
Tank Venting	1-1/4" steel pipe with vented cap. Terminates approximately 5" below fill connection.
Spare Tanks	None.

Interior Assessment	
Equipment #1	Furnace: DMO Industries, Model WTL-100H, Serial No. 38719WTNLU, Capacity 100 MBH, Firing rate 0.85 GPH, Manufactured date unknown. Burner: Beckett, Model AJ-514684, Serial No. unknown, Firing rate unknown.
Equipment #2	Water Heater: Heil, Model CM-32, Serial No. D051034221, Capacity 70 MBH, Firing rate 0.65 GPH, Manufactured date unknown. Burner: Beckett, Model AFG-65BO, Serial No. 100405-23765, Firing rate 0.5-3.0 GPH.
Interior Piping	1/2" and 3/8" soft copper tubing. Good condition.
Interior Valves & Accessories	Furnace: Common oil filter and flame arrestor, check valve in return line. Water Heater: Common oil filter and flame arrestor, check valve in return line.
Fuel Pumps	None.
Spill Trays	None.
Spill Kits	None.
Fire Extinguisher	Fire Extinguisher: 4A:60B:C type extinguisher located on wall.
Precision Leak Test	No records on site.



Code Issues	
Code violations are listed below. The overall recommendation for this site due to the deficiencies, condition, and age of the tank is to replace the system.	
CSA B139 (09) 7.3.8	<p>Issue: A tank shall be installed on rigid, non-combustible supports constructed of materials having a fire-resistance rating of not less than 2h. New tank stand to be constructed of non-combustible material</p> 
CSA B139 (09) 7.5.5	<p>Issue: Outdoor tanks need secondary containment, or need to be double walled/bottom with interstitial monitoring. Existing tank is single wall and needs to be replaced.</p>
CSA B139 (09) 7.5.6	<p>Issue: Tanks installed in an area not separated by vehicles needs to be protected by good engineering practices. New tank should be provided with protective bollards.</p> 
CSA B139 (09) 7.8.2	<p>Issue: Each fill opening and each entry to a fill pipe shall be provided with a weather tight cover designed to prevent tampering. New tank to be provided with weather tight cover.</p> 



Code Issues	
CSA B139 (09) 7.8.4	Issue: A fill opening shall be designed to avoid spillage. New tank should be installed with certified spill containment box. (see photo above)
CSA B139 (09) 7.9.1.7	Issue: Vent must terminate a minimum of 6" above fill. (see photo above)
CSA B139 (09) 7.9.1.7	Issue: Vent must be c/w a weatherproof hood. The vent hood or cap shall prevent ingress of objects. New tank vent to terminate in code approved hood. (see photo above)
CSA B139 (09) 9.3.1.5	Issue: Piping shall be supported and protected against physical damage such as foot traffic, vehicles, and snow and ice damage.



Additional Photographs from Site Visit



Photo 1: Outdoor above ground fuel tank and stand



Photo 2: Furnace



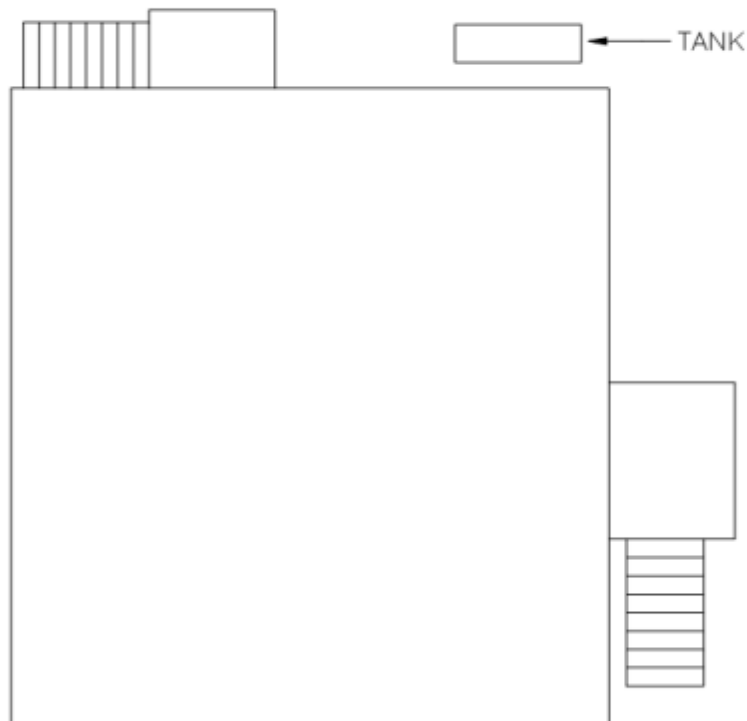
Photo 3: Water heater



Photo 4: Interior piping and accessories



NORTH



FRONT

V007 Residence Site Plan






Site Information	
PWGSC Number	V008 Residence
Address	Grise Fiord, NU
Building Type	Single storey, single family residential dwelling unit.

Exterior Assessment	
Tank Type	Granby, Single wall, 1111 L capacity. Model 115003, Serial No. D-022419. Manufactured 2008.
Tank Condition	Fair/Poor; Tank is in relatively good condition, but since it is single wall, the recommendation is to replace the tank.
Tank Location	Outdoors; on the north east side of building. Co-ordinates: 76.417687,-82.898661
Clearance	9" to exterior wall.
Stand Type	Steel stand on 6x6 wood base.
Stand Condition	Good.
Exterior Piping	1" steel piping. Fair condition; covered in surface corrosion.
Exterior Valves & Accessories	Shutoff and drain valves at tank.
Tank Venting	1-1/4" steel pipe with vented cap. Terminates approximately 5" above fill connection.
Spare Tanks	None.

Interior Assessment	
Equipment #1	Furnace: Olsen, Model MPL 120B, Serial No. 3308A015204, Capacity 85.5-123 MBH, Firing rate 0.75-1.10 GPH, Manufactured 2008. Burner: Beckett, Model AF65XN, Serial No. 080610-59975, Firing rate 0.4-3.0 GPH.
Equipment #2	Water Heater: Heil, Model CM-32, Serial No. D051034248, Capacity 70 MBH, Firing rate 0.65 GPH, Manufactured date unknown. Burner: Beckett, Model AFG-65BO, Serial No. 100405-23764, Firing rate 0.5-3.0 GPH.
Interior Piping	1/2" and 3/8" soft copper tubing. Good condition.
Interior Valves & Accessories	Furnace: Common filter and flame arrestor. Water heater: Common filter and flame arrestor.
Fuel Pumps	None.
Spill Trays	Spill trays under filter and flame arrestor.
Spill Kits	None.
Fire Extinguisher	Fire Extinguisher: 4A:60B:C type extinguisher located on floor.
Precision Leak Test	No records on site.



Code Issues	
Code violations are listed below. The overall recommendation for this site due to the deficiencies, condition, and age of the tank is to replace the system.	
CSA B139 (09) 4.1.1	<p>Issue: All components shall be certified and shall be installed for its intended use. Existing shut off valves are not code compliant.</p> 
CSA B139 (09) 7.5.5	<p>Issue: Outdoor tanks need secondary containment, or need to be double walled/bottom with interstitial monitoring. Existing tank is single wall and needs to be replaced.</p>
CSA B139 (09) 7.5.6	<p>Issue: Tanks installed in an area not separated by vehicles needs to be protected by good engineering practices. New tank to be provided with protective bollards.</p> 
CSA B139 (09) 7.8.2	<p>Issue: Each fill opening and each entry to a fill pipe shall be provided with a weather tight cover designed to prevent tampering. New tank to be provided with weather tight cover.</p> 



CSA B139 (09) 7.8.4	Issue: A fill opening shall be designed to avoid spillage. New tank should be installed with certified spill containment box. (see photo above)
CSA B139 (09) 7.9.1.7	Issue: Vent must terminate a minimum of 6" above fill. (see photo above)
CSA B139 (09) 7.9.1.7	Issue: Vent must be c/w a weatherproof hood. The vent hood or cap shall prevent ingress of objects. New tank vent to terminate in code approved hood. (see photo above)
CSA B139 (09) 9.3.1.5	Issue: Piping shall be supported and protected against physical damage such as foot traffic, vehicles, and snow and ice damage.



Additional Photographs from Site Visit



Photo 1: Outdoor above ground fuel tank and stand



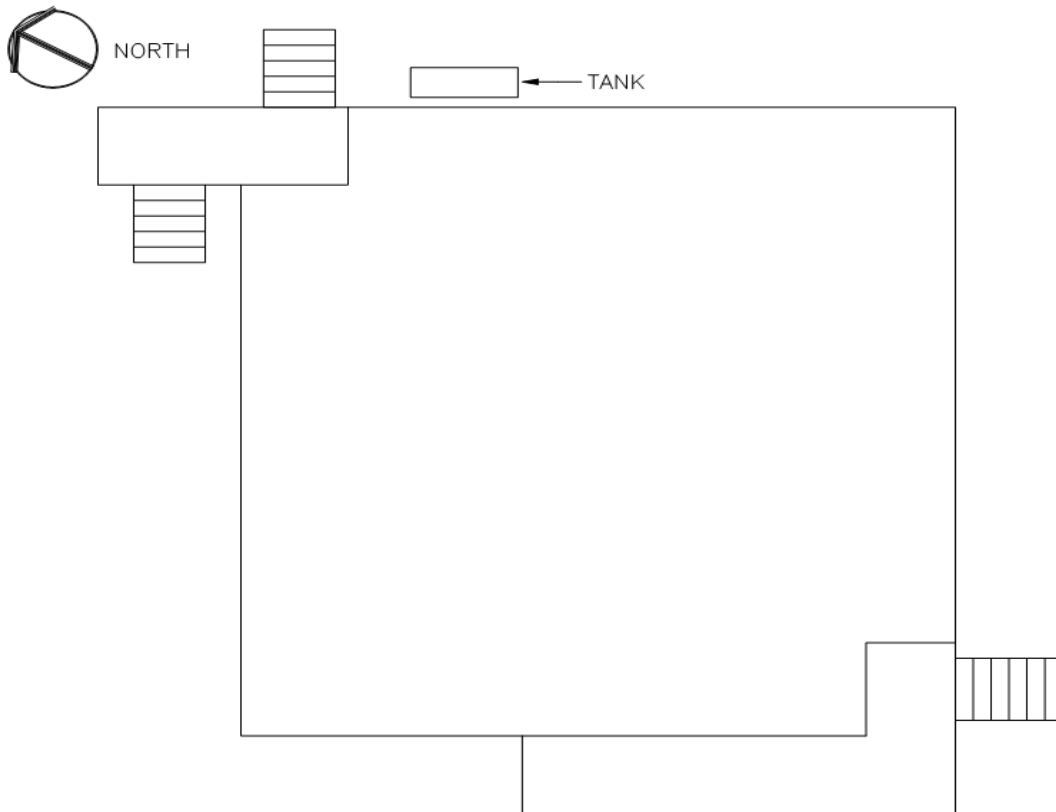
Photo 2: Furnace



Photo 3: Water Heater



Photo 4: Interior piping and accessories



V008 Residence Site Plan






Site Information	
PWGSC Number	V122 Detachment Garage
Address	Grise Fiord, NU
Building Type	Single storey, snow vehicle garage.




Exterior Assessment	
Tank Type	Roth, Double wall with secondary containment, 1000 L capacity. Serial No. 085510053 31443. Manufactured 2010.
Tank Condition	Good; no signs of corrosion or leaking.
Tank Location	Outdoors; North side of building. Co-ordinates: 76.417969, -82.899915
Clearance	9" to exterior wall.
Stand Type	Wood stand sitting on gravel.
Stand Condition	Poor.
Exterior Piping	½" soft copper tubing. Good condition.
Exterior Valves & Accessories	None, soft copper piping off the top of the tank, penetrates hood and then through exterior wall.
Tank Venting	2" steel pipe with cap, terminates approximately 4" above fill.
Spare Tanks	None.

Interior Assessment	
Equipment #1	Furnace: Old Metroheat unit, no visible name plate.. Burner: Metroheat, Model A1-CM, Serial No. 3059, Firing rate unknown.
Interior Piping	½" and 3/8" soft copper tubing. Good condition.
Interior Valves & Accessories	Furnace: Oil filter.
Fuel Pumps	None.
Spill Trays	Spill trays under filter.
Spill Kits	None.
Fire Extinguisher	None.
Precision Leak Test	No records on site.



Code Issues	
CSA B139 (09) 7.2.1.4	<p>Issue: Any unused openings in a tank shall be sealed vapour and liquid tight. Recommendation: Provide liquid and vapour tight seal over tank opening.</p> 
CSA B139 (09) 7.3.8	<p>Issue: A tank shall be installed on rigid, noncombustible supports constructed of materials having a fire-resistance rating of not less than 2h. Recommendation: Current base should be replaced with concrete pad, or pressure treated wood flush with grade.</p> 
CSA B139 (09) 7.3.8	<p>Issue: A tank shall be securely supported to prevent settling, sliding, toppling, or lifting. (see photo above) Recommendation: Secure tank to new stand to prevent toppling from wind exposure.</p>
CSA B139 (09) 7.5.6	<p>Issue: Tanks installed in an area not separated by vehicles needs to be protected by good engineering practices. Recommendation: Install bollards to prevent accidental vehicle collision.</p> 



Code Issues	
CSA B139 (09) 7.8.2	<p>Issue: Each fill opening and each entry to a fill pipe shall be provided with a weather tight cover designed to prevent tampering. Recommendation: Install code approved, weather tight cover.</p> 
CSA B139 (09) 7.9.1.7	<p>Issue: Vent must terminate a minimum of 6" above fill. Recommendation: Replace the existing hood with new Roth retrofit hood and extend the existing vent pipe up a minimum of 6" above fill.</p> 
CSA B139 (09) 7.9.1.7	<p>Issue: Vent must be c/w a weatherproof hood. The vent hood or cap shall prevent ingress of objects. (see photo above) Recommendation: Modify existing vent to terminate in code approved hood.</p>
CSA B139 (09) 9.3.1.5	<p>Issue: Piping shall be supported and protected against physical damage such as foot traffic, vehicles, and snow and ice damage. Recommendation: Protective covering over piping is recommended to prevent falling ice and snow from damaging piping.</p> 



Code Issues	
CSA B139 (09) 9.3.1.9	Issue: Piping or tubing passing through exterior wall shall be sealed weather tight. Recommendation: Provide weather tight seal at exterior penetration.
CSA B139 (09) 9.4.1	Issue: Shut off valve must be installed as near as practicable to the exit from the supply tank. Recommendation: Modify piping and install code approved shut off valve at fuel tank.



Additional Photographs from Site Visit



Photo 1: Outdoor above ground fuel tank



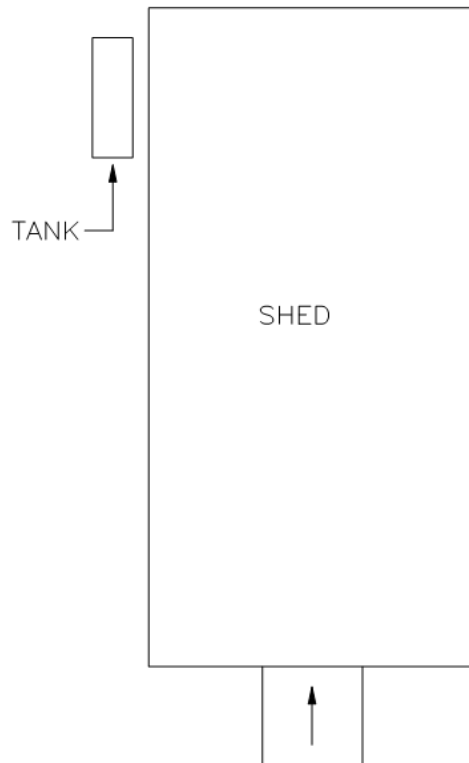
Photo 2: Furnace



Photo 3: Burner and piping



Photo 4: Outdoor tank and piping



V122 Detachment Garage Site Plan



Site Information	
PWGSC Number	V294 Detachment
Address	Grise Fiord, NU
Building Type	Single storey, RCMP detachment office.

Exterior Assessment	
Tank Type	Single wall tank with no visible name plate. Approximate size of the tank is 1100 L.
Tank Condition	Fair/Poor; Corrosion beginning to penetrate surface, pitting beginning to occur.
Tank Location	Outdoors; North west side of building. Co-ordinates: 76.417871,-82.899741
Clearance	12" to exterior wall.
Stand Type	Steel stand on 6x6 wood base.
Stand Condition	Fair; Covered in surface corrosion.
Exterior Piping	2" steel piping with flexible connection. Fair condition; painted, surface corrosion developing.
Exterior Valves & Accessories	Shutoff valve and union at tank.
Tank Venting	2" steel pipe with vented cap. Terminates approximately 36" above fill connection.
Spare Tanks	Roth 1000L double wall tank in crate behind the building.

Interior Assessment	
Equipment Tank 1	
Equipment #1	Furnace: Olsen, Model HTL-100C, Serial No. HTUL66474, Capacity 101.0 MBH, Firing rate 0.85 GPH, Manufactured 1987. Burner: Beckett, Model AF65XN, Serial No. 000221-20903, Firing rate 0.75-1.25 GPH.
Interior Piping	2", & 1/2" steel piping, 1/2"& 3/8" soft copper tubing. Good condition.
Interior Valves & Accessories	Furnace: Shutoff valve, fuel warmer, oil filter, flame arrestor and fuel levelometer
Fuel Pumps	None.
Spill Trays	Spill trays under fuel filter only.
Spill Kits	None.
Fire Extinguisher	Fire Extinguisher: 4A:60B:C type extinguisher located on floor.
Precision Leak Test	No records on site.



Code Issues	
Code violations are listed below, the recommendation for this site due to the deficiencies, condition and age of the tank is to replace the system	
CSA B139 (09) 7.5.5	<p>Issue: Outdoor tanks need secondary containment, or need to be double walled/bottom with interstitial monitoring. Existing tank appears to be in fair/poor condition but does not have secondary containment and therefore will need to be replaced. There is a spare tank on site already, ready to be installed.</p> 
CSA B139 (09) 7.5.6	<p>Issue: Tanks installed in an area not separated by vehicles needs to be protected by good engineering practices. (see photo above) New tank should be provided with protective bollards.</p>
CSA B139 (09) 7.8.2	<p>Issue: Each fill opening and each entry to a fill pipe shall be provided with a weather tight cover designed to prevent tampering.</p> 
CSA B139 (09) 7.8.4	<p>A fill opening shall be designed to avoid spillage. (See photo above) A spill containment box should be installed on new installation.</p>



**CSA B139
(09) 7.9.1.7**

Issue: Vent must be c/w a weatherproof hood. The vent hood or cap shall prevent ingress of objects. New vent to terminate in code approved hood.



**CSA B139
(09) 9.3.1.5**

Issue: Piping shall be supported and protected against physical damage such as foot traffic, vehicles, and snow and ice damage. New system should have protective covering over piping to prevent falling ice and snow from damaging piping.





Additional Photographs from Site Visit



Photo 1: Outdoor tank



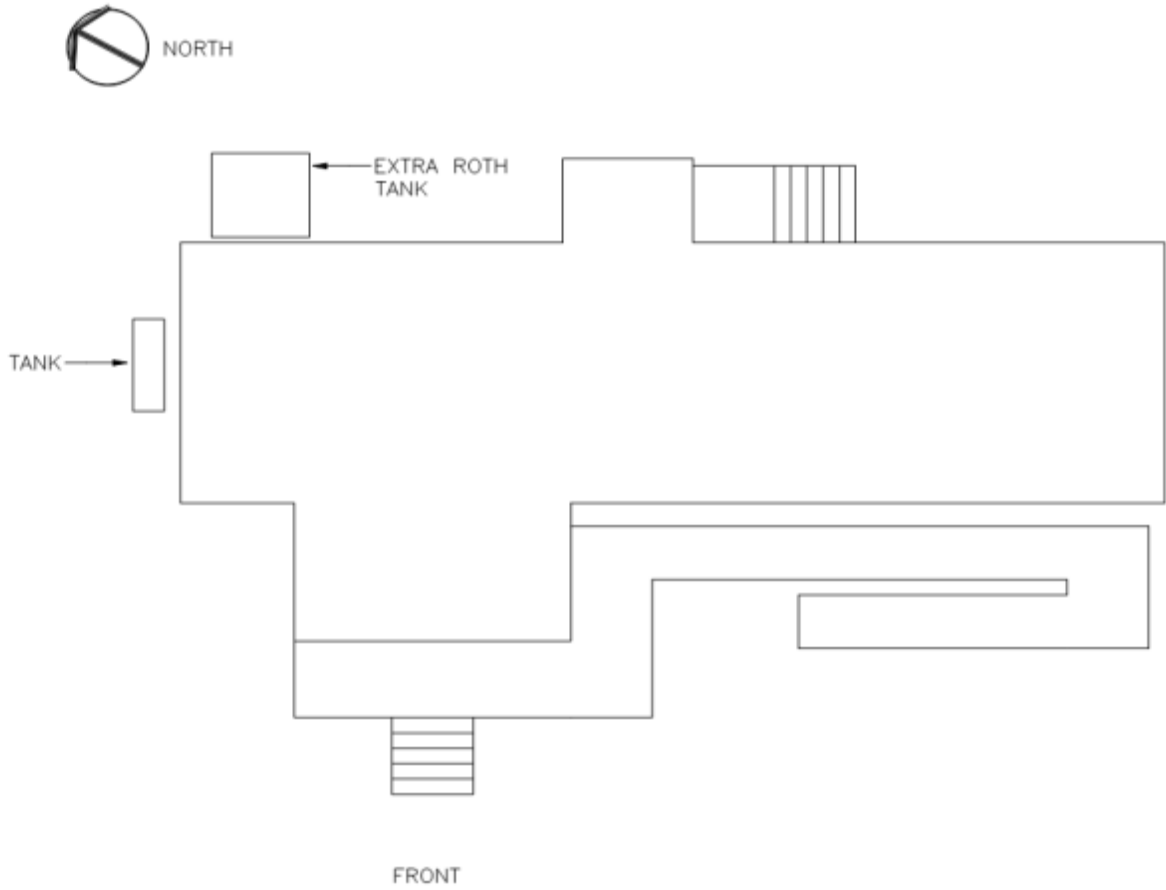
Photo 2: Indoor piping and accessories



Photo 3: Furnace



Photo 4: Spare tank



V294 Detachment Site Plan

Appendix – PENAL FIXTURES PM

Penal Fixture Plumbing Preventative Maintenance

Monthly PM

- Inquire with RCMP Member if any issues with Penal fixtures
- Inspect Fixture for signs of damage and missing Secure caulking
- Inspect Push Buttons on face of fixture for tightness
- Flush Toilet and monitor operation
- Operate Hot and Cold water and monitor operation and length of time water runs
- Visually inspect base of fixture and bush buttons for signs of leaks
- Open plumbing chase behind fixture for visual inspection
- Look for signs of leaks at all plumbing connections and under penal fixture
- Close up plumbing chase
- Advise RCMP Member if any deficiencies or major findings

Required Repairs:

Annual PM

- Perform Penal Fixture PM after water Pressure System PM
- Ensure **all** Domestic water pressure tanks air charge is set correctly
- Isolate pressure tank and drain off water
- Check and set air charge to 2 PSI below the water pump Cut in pressure
- Recharge water system and pressure tanks.
- Inquire with RCMP Member if any issues with Penal fixtures
- Inspect Fixture for signs of damage and missing Secure caulking
- Flush Toilet and monitor operation
- Operate Hot and Cold water and monitor operation and length of time water runs
- Hot Water Timing: _____ Cold Water Timing: _____
- Does the Fixture have Domestic Hot Water Hooked up? Yes No
- If YES run hot water to ensure max. hot water temperature is achieved at fixture.
- Domestic Hot Water Temperature at Bubbler: _____
- *****Must be **NO** higher than 35°C/95°F *****
- Open plumbing chase behind fixture
- Isolate domestic water to Flush Valve and Sink
- Open up Flush Valve and inspect diaphragm and clean. (Replace if worm)
- Remove Vacuum breaker and clean. (Replace if Worn)
- Open up Hot and Cold Water Timing assemblies and clean diaphragms.
- Open up Hot and Cold Stop/Check Strainers and clean strainers
- Turn all the water back on
- If fixture drain into sump inspect sump pump for proper operation

Penal Fixture Plumbing Preventative Maintenance

Annual PM Calibration

- Operate Hot and Cold water and monitor operation and length of time water runs
Hot Water Timing: _____ Cold Water Timing: _____
Adjust timing to approximately one minute.
- Domestic Hot Water Temperature at Bubbler: _____
*****Must be **NO** higher than 35°C/95°F *****
- Flush Toilet and monitor operation
- Trip anti Flood Device and ensure toilet will not Flush
- Pull slightly on all plastic tubing to ensure tight connection
- Clean and dry up plumbing Chase
- Close and secure plumbing chase access
- Advise RCMP Member if any deficiencies or major findings

Adjustment and Repairs Performed: _____
