



Water Storage Tank Cleaning

**Department of Municipal Affairs &
Environment
Operator Education, Training,
and Certification Section**

Tank Cleaning & Inspection

- Permit to Operate recommends a comprehensive inspection and cleaning of storage tanks every 3 to 5 years

- Town can hire a contractor to do this or undertake the work themselves

Tank Cleaning & Inspection

- Interior Inspection
- Exterior Inspection
- Foundation
- Accessories- ladders, hatchways etc..

Tank Roof



Roof Access



Hatchway



Foundation



Internal Inspections

- ROV inspection
- Diver
- Drain Tank



Cleaning

- Manually draining tank
- Physically cleaning with a small crew

Planning for Project

- Work crew required
- Equipment required
- Plan for cleaning
- Notification of public

Planning for project

- Risk Assessment
- Determination of rescue team
- Confined space procedure
- Rescue plan developed

Risk Assessment-Hazards

Pre-Job Hazard Assessment

- Overhead hazards
- Slip & Fall
- Moving vehicles
- Working from heights
- Confined space

Risk Assessment- contd.

- Atmospheric
 - Carbon Monoxide
 - Chlorine
 - Hydrogen Sulfide
 - Methane



Risk Assessment- contd.

- Temperature
- Lighting
- Noise



Rescue Plan

- Fire department can be used as the rescue team
- Site should be visited prior to work commencing
- Department should be notified once work begins and ends

Rescue Plan

- NFPA 10.06 CFE Rescue
 - Vehicle accessibility
 - Space to set up
 - Can you get a stretcher in
 - Anchor points for a haul system
 - Radio communications
 - Size of the opening
 - Accessibility for paramedics

Rescue Plan

- Rescue equipment should be prepped and ready to go
- Consider potential Weather Impacts
- Run through with incident Commander from fire department
- Determine an appropriate response time, a 7-10 minute response time was used by the Cbfd

Work Crew

- Determine the number of people to clean inside
- One person at the entrance monitoring
- Vacuum truck crew
- Supervisor onsite



Equipment Required

- Confined space entry
 - Gas Detectors
 - Blower
 - Harness/Rope
 - SCBA

Confined Space

BASICS

THE CITY OF CORNER BROOK OCCUPATIONAL HEALTH & SAFETY PROGRAM

CONFINED SPACE ENTRY PERMIT Date: Aug 13/17

Purpose of Entry CLEAN + INSPECT TANK

Location WINDRIGAL DR.

Name of Entry Worker C. Ryan, J. Dornise, P. Baker Name of Stand-by Worker R. LAWRENCE

Entry worker trained in Confined Space Entry Yes (✓) No ()

Entry worker - Orientation to CSE Permits Yes (✓) No ()

Entry worker trained in Fall Protection (if using fall arrest PPE/equipment for retrieval purposes) Yes (✓) No () N/A (X)

Stand-by Worker trained in First Aid Yes (✓) No ()

SWP CSE Reviewed with Entry/Stand-By Workers Yes (✓) No ()

PRE-ENTRY	YES	NO	YES	NO
Cell Phone tested to work? (Call 637-1671)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Known flammable/toxic gases in space? if yes,	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Has space been ventilated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Volume of Space <u> </u> ft ³ Blower Capacity <u> </u> CFM				
Lighting good in the space?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Area around space clear of chemical/gaseous hazards? (i.e. running engines, welding, etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Initial air testing complete? (leave tube in for minimum 2 mins)	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
PPE in place (hard hat, vest, boots, glasses)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Specialized PPE needed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Harness	<input type="checkbox"/>	<input type="checkbox"/>		
Winch	<input type="checkbox"/>	<input type="checkbox"/>		
Tripod	<input type="checkbox"/>	<input type="checkbox"/>		
Respirator	<input type="checkbox"/>	<input type="checkbox"/>		
Other: <u>LIFE LINE</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Other: <u> </u>	<input type="checkbox"/>	<input type="checkbox"/>		

Working at height >10ft (from the feet)

** If yes, must also complete fall protection workplan

Emergency provisions near standby worker:

Fire Extinguisher

First Aid Supplies

Liquid/free flowing solids removed from space?

Isolation required for:

Mechanical Hazards

Electrical Hazards

Pneumatic Hazards

Pipe Hazards

Tank Hazards

COMMENTS

ONGOING TESTING ONCE INSIDE

When continuously monitoring record each hour

Time of Initial Test:	Initial Test	2 nd Test	3 rd Test	4 th Test	5 th Test
10:30am					
Oxygen (must be between 20-22 ppm)	20.9				
LEL (must be < 10% LEL (5% for hot work))	0				
H2S (must be < 10 ppm)	0				
CO (must be < 25 ppm)	0				

Note: If the confined space happens to be an excavation/ trench greater than 1.22 m (4 ft.) then an Excavation/Trenching

Equipment Required

- General Personal Protective Equipment (PPE)
 - Hard hat
 - Steel Toe boots
 - Gloves
 - Safety Glasses

Equipment Required

- Vacuum truck
 - Potable water hose
 - Industrial floor cleaners(squeegee)



Draining Tank

- Plan to drain tank
 - Drain to sewer
 - Allow tank to draw down

Pre-Work Inspection



Atmospheric Testing

Other: _____

***If using fall arrest PPE/equipment for retrieval purposes, worker must have valid government approved fall protection course.*

ONGOING TESTING ONCE INSIDE

When continuously monitoring record each hour

Time of Initial Test:	Initial Test	2 nd Test	3 rd Test	4 th Test	5 th Test
10:30am					
Oxygen (must be between 20-22 ppm)	20.9				
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CO (must be < 25 ppm)	0				

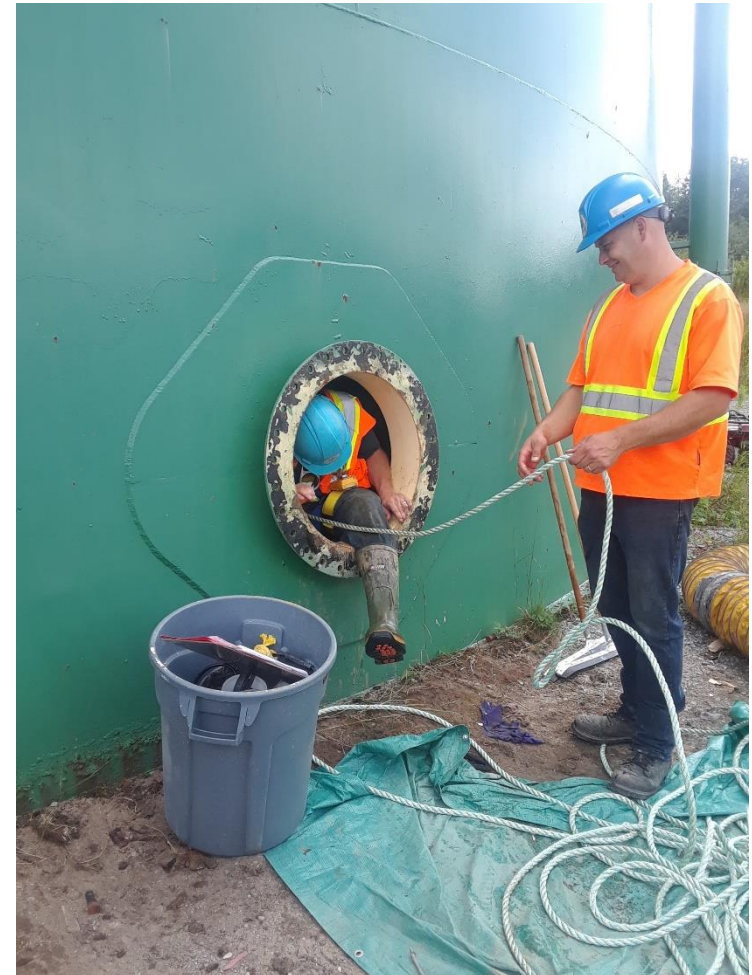
Note: If the confined space happens to be an excavation/ trench greater than 1.22 m (4 ft.) then an Excavation/Trenching

Disinfecting Boots



Access

- Entry



Life Line on Harness



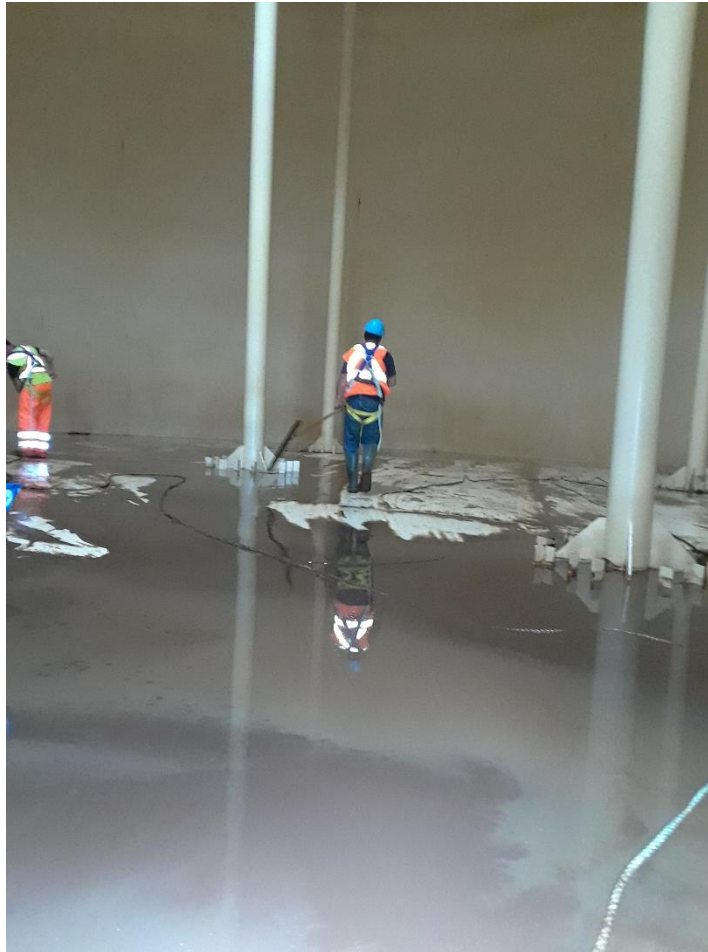
Cleaning



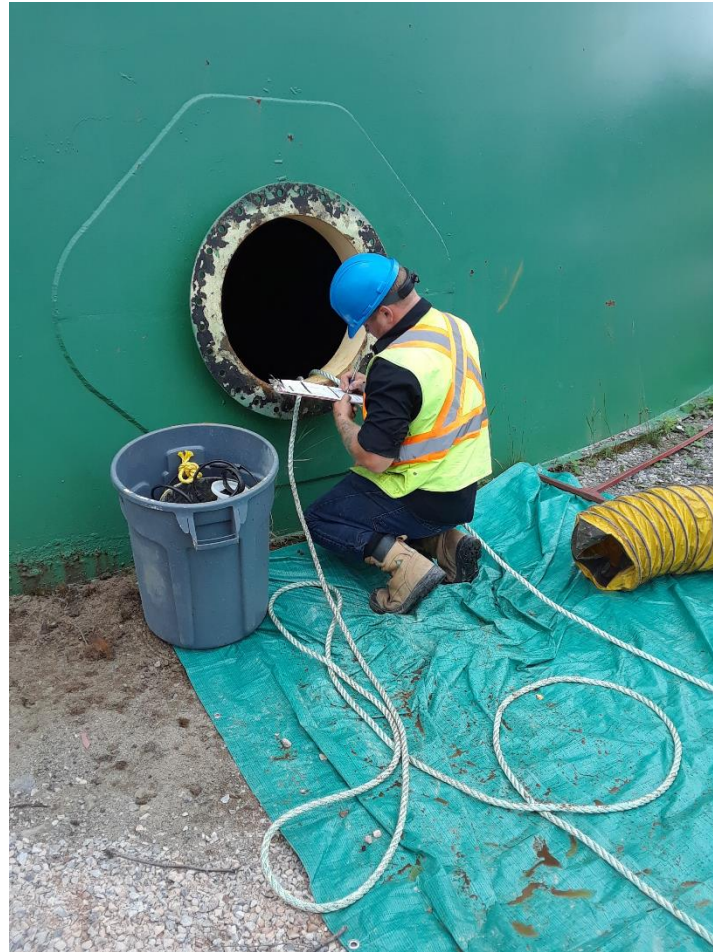
Cleaning



Cleaning



Atmospheric Testing



Atmospheric Testing

Other: _____

**If using fall arrest PPE/equipment for retrieval purposes, worker must have valid government approved fall protection course.

ONGOING TESTING ONCE INSIDE

Time of Initial Test:

When continuously monitoring record each hour

10:30am	Initial Test	2 nd Test 11:00 Am		3 rd Test 11:30 Am		4 th Test 12:00pm		5 th Test 12:30 pm	
Oxygen (must be between 20-22 ppm)	20.9	20.9	20.9	20.9	20.9	20.9	20.9	20.9	20.9
(must be < 10% LEL % for hot work)	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
H2S (must be < 10 ppm)	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
CO (must be < 25 ppm)	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø

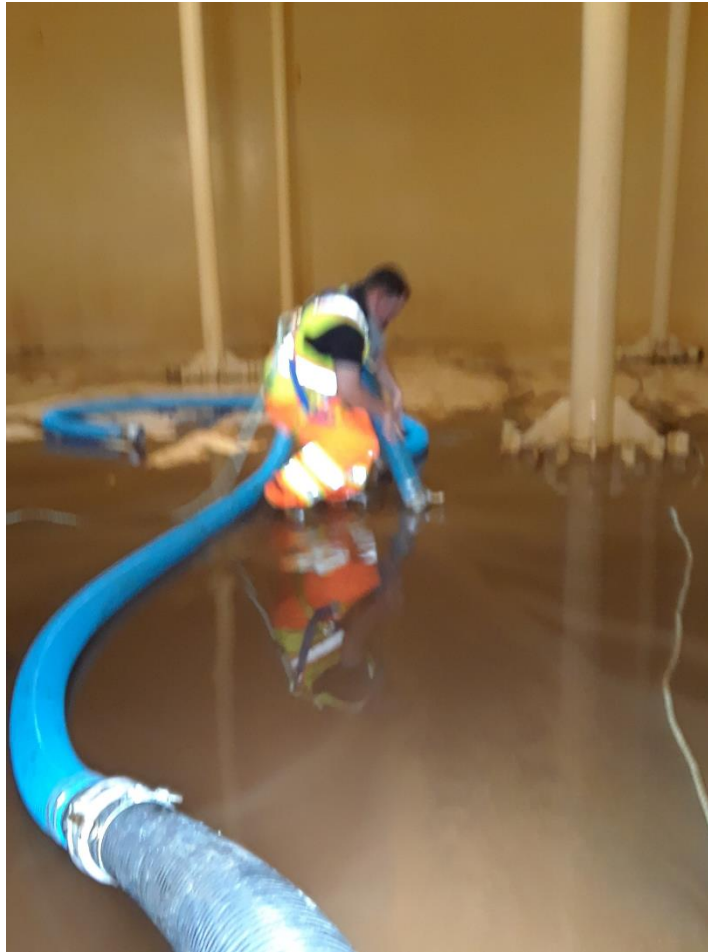
Note: If the confined space happens to be an excavation/ trench greater than 1.22 m (4 ft.) then an Excavation/Trenching Checklist must be also completed.

Prepping Vac Truck





Vacuuming Sediment



Discharged to Storm Sewer



Draining Options

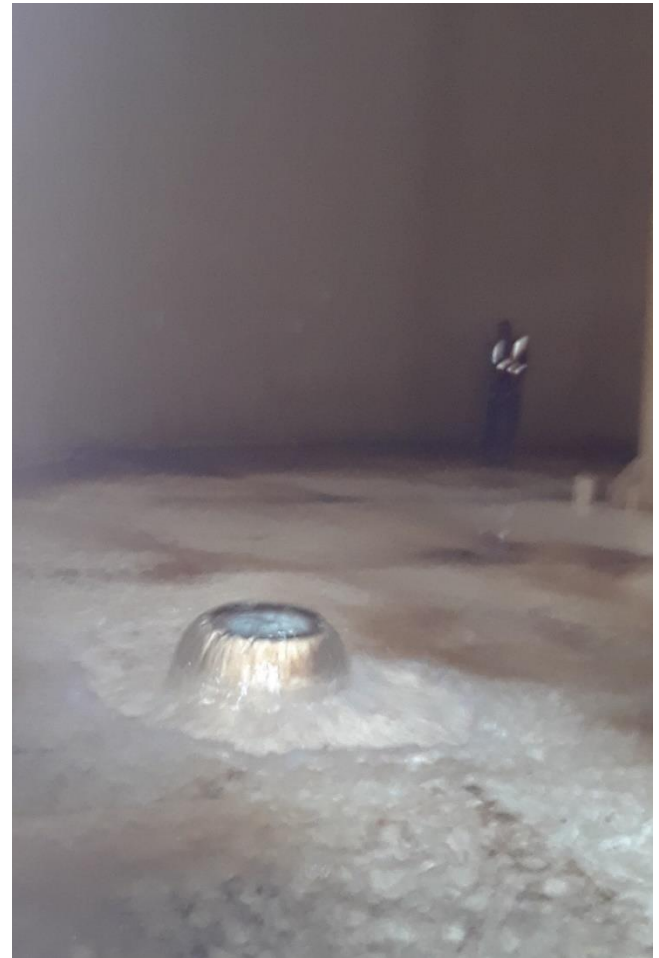
- Vac Truck
- Pumps and Discharge Hoses
- Existing Drain Line

Opening a valve to allow flow



Refilling

Added
approximately 8
inches of water
back in to the tank.
Suspended some of
the dirt.



Manually Cleaning

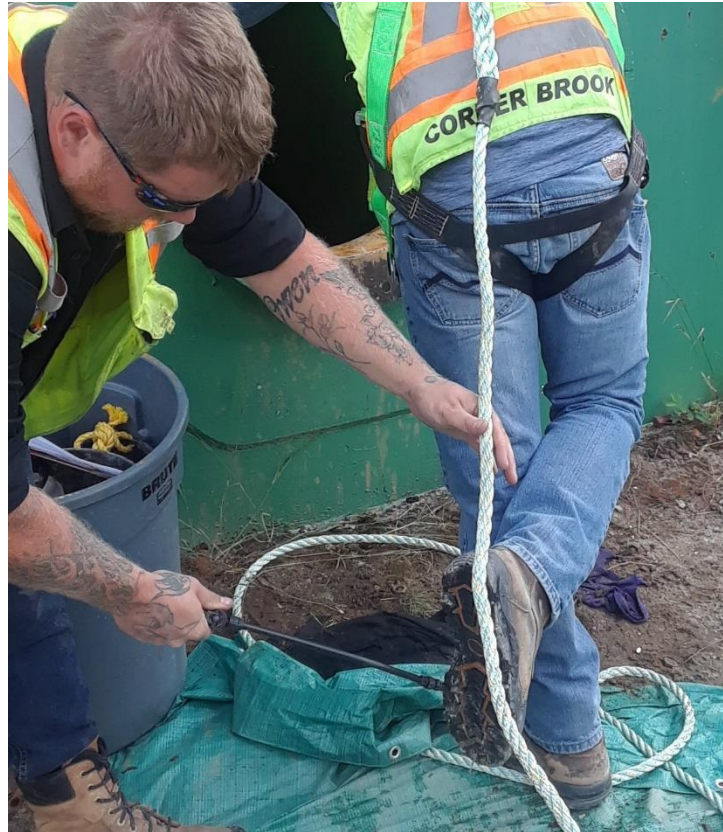




Ready for Inspection



Final Inspection





Finished Product



Disinfecting the tank

- Disinfection



Adding Hypochlorite



PPE utilized during disinfection

- SCBA
- Gas Monitor
- Chem B suit
- Boots
- Gloves



Closing the tank



- Staff prepared a new gasket in advance
- Cleaned up the edges prior to installing the new gasket

Disinfecting the tank

- Tank was disinfected using ANSI/AWWA Standard C652-92 as a reference.
- It was filled to 5% at 50 mg/L and left for 6 hours then filled to the overflow and left for 24 hours

Public Notice

Reservoir Maintenance- Lundrigan Drive



CITY OF CORNER BROOK
MEDIA ADVISORY

Effective Monday, August 12th, 2019 the City will be conducting preventative maintenance on the Lundrigan Drive reservoir, all residents and businesses in the following areas may experience water pressure fluctuation and discoloration of water until Friday, August 23, 2019. Maintenance is done in order to provide the best water quality possible to homes and businesses. If you do have discoloration, please run your cold water tap until the water runs clear.

The areas affected are:

- Lundrigan Drive
- Tipping Place
- Woodrow Avenue
- Tuma Avenue
- Hann Crescent
- Carberry's Road from Snow Street to Fillatre Avenue including all side roads
- Sunnyslope Drive from Marshall Crescent to Rose Street
- Marshall Crescent
- Shamrock Crescent #'s 65-80
- Rose Street

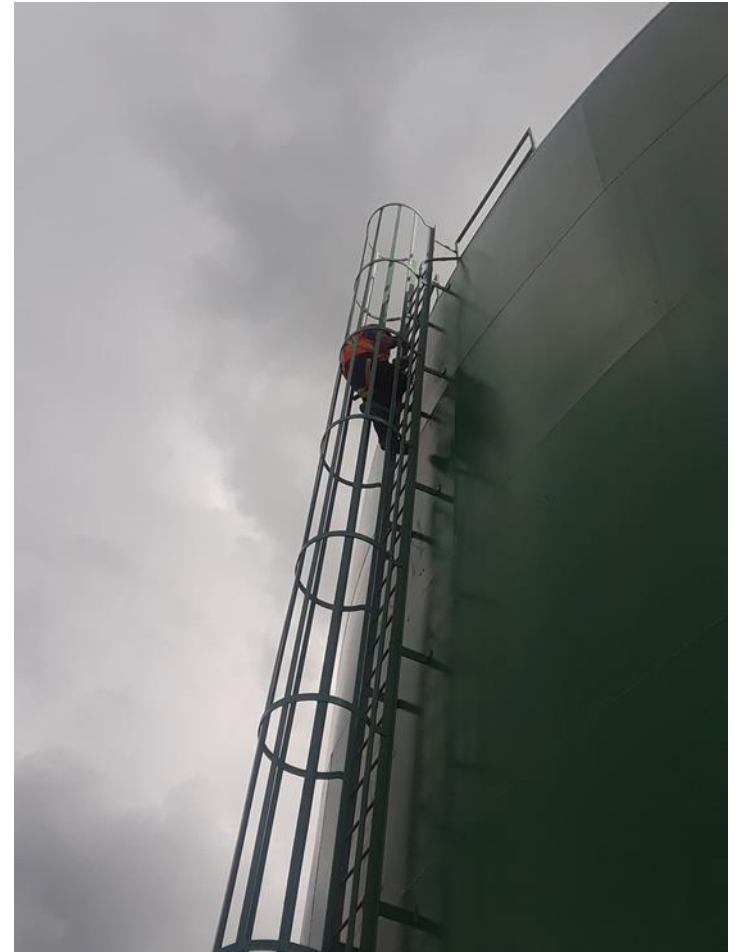
The City of Corner Brook would like to thank you for your cooperation, and apologizes for any inconvenience this may cause. Residents can visit the City's official website, www.cornerbrook.com, at any time to receive current information on the maintenance program.

FOR FURTHER INFORMATION CONTACT:

Keith Costello, P.Tech.
Superintendent of Water and Wastewater Division
637-1596

Topside Inspection

- Roof top access was inspected once cleaning was completed.



Questions

