Alternative Measures of Control

for Buffer Tank confined space entry

Moderate Hazard Atmosphere

City of Penticton AWWTP

February 6, 2015

**Purpose:**

To ensure the safety of a worker while working in the buffer tank. All potential hazards are addressed via attached Hazard Identification Risk Assessment( HIRA), Moderate Risk Confined Space Entry & Rescue Procedure, Supplemental Safe Work Procedures and Lockout & Isolation Procedure.

**Background:**

The City is in the process of installing a tank mixing system to improve the water quality for it supply of reclaimed water The only means of isolating the open air tank is by a 600 mm butterfly valve (24"GA FIG# X804 CLASS 150B AWWA C504 1.00 EA 10183.33 $10,183.33 FLANGED BUTTERFLY VALVE WITH SUBMERGEDSERVICE WORM GEAR WITH 2" SQUARE NUT OPERATORDUCTILE IRON BODY, BUNA N SEAT, NSF-61 EPOXYCOATED DUCTILE IRON DEISC WITH 316SS SEATEDGE, 304SS SHAFT, U-CUP SELF ADJUSTING SHAFTSEALS, 316SS EXTERIOR FASTNERS, ANSI CLASS125 FLANGED ENDS, NSF-61 APPROVED EXTERIOR 2 PART EPOXY COATING 16MILS DFT)

The space is a converted circular concrete secondary clarify which now serves as a buffer tank for our reclaimed water system. The tank is 15.24 m in diameter and is just over 3m in depth. The tank floor has a minor slope towards the middle. The only hydraulic adjacent piping is a 600 mm feed from downstream of the ultraviolet disinfection system.

The space is isolated by butterfly valve (no provision for double block and bleed or blanking as per section 9.18 of WorkSafe BC Regulation) the tank floor is at an elevation of 339.3m upstream water level is at an elevation of 342.3 m, head pressure of 3m which is equal to 1.42 PSI.

Workers will be protected by additional duties of the standby person monitoring upstream level and continuous air monitoring by the standby person to ensure there is clean Respirable air in the confined space

No work activities will contribute to the flow.

Supervision of this plan will be supervised by the AWWTP Supervisor as well as 2 Operator III’s, the AWWTP supervisor will complete regular inspections throughout the day as well as review data at the end of each day. The AWWTP Supervisor currently signs off on all confined space entries prior to entering.

Any worker involved in either the entry or standby duties will have read, understand and sign off that that they have read and understand the ALTERNATIVE MEASURES OF CONTROL, this will be a check box on the confined space entry form.

The City of Penticton’s Confined Space program is administered by Glenn Robertson, CRSP (City Safety coordinator) (250) 490-2553 cell (250) 809-5059 [glenn.roberston@penticton.ca](mailto:glenn.roberston@penticton.ca)

The HIRA , Safe Work Procedures, Alternative Measures of Control and Lock out procedures were completed by Randy Craig AWWTP Supervisor 250 490-2559 cell 250 487-8362 [randy.craig@penticton.ca](mailto:randy.craig@penticton.ca) and review by Glenn Robertson, MRI, Gord Austrom Op III and Gary Marsden Op III (Gary & Gord worker representatives).

This ALTERNATIVE MEASURES OF CONTROL was created by Randy Craig, reviewed by Glenn Robertson, Gary Marsden and Gord Austrom

**The following is the Alternative Measures of Control:**

Assigned standby person shall continuously monitor gas detector as well as upstream level. The standby person shall never leave area (moderate hazard atmosphere confined space) is occupied by a worker. If the stand by person needs to exit the lower area, that person must be replaced with another employee that is trained in Confined Space Entry and who has signed off on this ALTERNATIVE MEASURES OF CONTROL.

In the event a high level alarm upstream, the level detector will trigger an alarm to our HMI (audible and visual) and plant staff will notify standby person to evacuate the moderate confined space. The standby person will not be able to hear or see alarm; they will be contacted via radio or in person.

In the event of any gas detector alarms, the standby person will instruct the worker to exit the moderate confined space and both workers will exit lower screw pump area.

If the upstream hi level alarm is acytivated and the workers are required to exit the area or in the event of a gas detector alarm, the WWTP Supervisor must document the event and any remedial action taken to correct situation. The report shall be distributed to Glenn Robertson from City of Penticton.

Standby person shall carry a WWTP radio and on call cell phone for communication, location of area is approximately 40 m from Administration building

This Alternative Measure of Control will protect the worker in the event that the upstream level gets to high.

Time period for this alternative measure will be needed to complete the installation of the tank mixing system and for period ic future inspections. If this tank requires cleaning all duties can be done without the need for a confined space entry

[glenn.robertson@penticton.ca](mailto:glenn.robertson@penticton.ca)

