



LOCATING AND REPAIRING UNDERGROUND CONDENSATE LINE

Safe Operating Procedure

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Hazards	trench collapse, bystander safety, hit by machinery, fall in trench, injury, fire, trench cage/box failure, energy release in lines, dropped load, equipment failure, welding, working alone
Tools/Equipment	excavator, dump truck, insulation, tar (SDS), rigging, shovels
Employee Group(s)	Facilities Management – Mechanical & Electrical

Required PPE:



Safety Shoes



Eye
Protection



Gloves



Hard Hat



High Vis
Vest

SAFE WORK PRACTICES

- Do not perform the procedure or operate the equipment until you have been appropriately trained and authorized to do so by your supervisor.
- Inspect required personal protective equipment (PPE) and replace if required.
- All workers must review and perform work as per StFX's Trenching & Excavation Program; complete Excavation Hazard Assessment & Permit (EHAP).
- Barricade work area, use perimeter signage.
- Wear hi-vis vests,
- Barricade area, only necessary workers/equipment are allowed inside barricaded area.
- First aid attendant and kits, emergency plan.
- Fire extinguishers on equipment as per manufacturer's specs.
- Install as per written specifications, to be kept on the site. Daily inspections by a competent person.
- LOTOTO by StFX on condensate line, lower pressure in steam line.
- Use safe hoisting and rigging practices – certified and inspected rigging.
- Use as per manufacturer's specs (owner's manual), daily inspections.
- PPE, safe job procedures and work practices, signage for bystanders/pedestrians.
- Standby person with adequate communication always on the site while work is being performed.

PROCEDURE

1. Locate existing utilities (to be performed by StFX) and install safeguards as required.
2. Install fencing to block off excavation area. Sections of fence will be opened as required to allow equipment and workers inside. Ensure pedestrian safety with sufficient barricades and signage.
3. Isolate the energy in the condensate line. LOTOTO to be performed by StFX maintenance staff in conjunction with subcontractors; all parties installing locks as per StFX's energy isolation procedure.
4. Deliver excavator - spotter required. Position dump truck - spotter required. If applicable, provide area for excavated material at least one metre from the edge of the trench. Ensure excavated material cannot re-enter trench accidentally.

NOTE: All PPE, tools and equipment shall be used in accordance with provincial OH&S legislation, manufacturer's specifications, applicable standards and codes of practice.



5. Dig trench 8 to 10 feet deep, with required slope until concrete lines are located, ensuring no damage to lines. **ONCE DEEPER THAN 1.2 METRES, NO PERSON SHALL ENTER THE TRENCH UNLESS REQUIRED SAFEGUARDS ARE IN PLACE.**
6. If unable to slope, install shoring/bracing system as work progresses, in accordance with regulations and EHAP. Use as per engineer's or manufacturer's specifications and ensure daily inspections.
7. Provide ladders or adequate access and egress. Inspect ladders daily before use.
8. Install pump to keep acceptable water levels.
9. Depressurize steam line to a safe pressure. LOTOTO in the boiler house by StFX maintenance staff.
10. Remove concrete covers using excavator. Use safe hoisting and rigging practices, and ensure rigging is certified and inspected.
11. Cut steel banding and remove insulation to reveal condensate line – wear gloves as required.
12. Bag insulation and remove it from the hole – wear gloves as required.
13. Cut condensate line with portable grinder (line will be isolated inside building, as per Step 3) and drain. Guard and handle shall be on the grinder and face and hand protection are required.
14. Remove pipe from hole (cut in lengths for safe handling).
15. Install new pipe in hole, using safe handling procedure. (manual / excavator??)
16. Cut pipe as required, using zip grinder. Guard and handle shall be in place, using face protection and hand protection.
17. Weld pipe connections. Following welding safe work practices and job procedures. Check extension cords and leads, ground equipment as required. Protect other workers and bystanders from welding flash.
18. Re-energize condensate line (remove LOTOTO) on to pressurize system and check for leaks. **HAZARDS?**
19. Insulate line using pipe insulation, and wrap with steel clad and banding. Use gloves and other PPE as required (check SDS for insulation).
20. Reinstall concrete covers using excavator. Use safe hoisting and rigging procedures. Inspect rigging.
21. Seal joints on concrete covers using tar. Check SDS for tar and use protective measures stated therein.
22. Remove shoring/bracing system as per written specifications using excavator. Use safe hoisting and rigging practices.
23. Backfill. If applicable, haul fill from #7 using dump truck – Spotters Required.
24. Remove equipment using float. Spotters Required.
25. Return site to safe condition.
26. Remove barricade.