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NWOWS OH&S Book: Part 2: Confined Spaces & Trenches

Confined Spaces:

A confined space is any space not constructed for continuous human occupation. This includes well pits, dug wells, crawl spaces, etc.

Employees are not to enter confined spaces without all of the following being true:

- 2 employees certified and trained to enter confined spaces
- The employees must carry out a hazard assessment and write all hazards down on the permit.
- A Completed Permit and Control Plan
- Warning Signs and Barricades are to be placed
- The atmosphere needs to be tested prior to each entry, if harmful atmosphere is found it must be vented or purged prior to entry.
- Explosive or flammable atmospheres of 10% or less can only be worked on with “cold work”, NWO Well Services will not allow employees to enter a confined space with greater than 10% of the lower explosive limit of an atmosphere. It must be purged or vented to 10% of less, otherwise we will discontinue our work on a project.
- For every worker in the confined space, a trained and certified “tending” worker must be present outside of the entry, and must remain there, in contact with the worker inside every 10 minutes.
- Employees need to each sign the emergency plan on the entry permit, confirming that they understand the Emergency Response Procedures.

The Confined Space Entry Permit and Control Plan must be filled out in its entirety, and signed by all attending employees.

Trenches:

An excavation is a hole left in the ground as a result of removing material, a trench is where the depth is greater than the width.

When working in excavations always ensure that the ground is solid before entering, never enter an unstable excavation, never enter a trench without others above to help you, only one person should be in the excavation at any time.

Pylons are to be set up to help highlight the location of a trench or excavation.

Prior to entering an, excavation: remove all debris and excavation soil away from the trench or excavation, have a water pump on standby, make sure the emergency plan form is updated for excavation work. Supervisors are to determine where employees are to enter, and where they are allowed to travel, make an observation of weather - if it is or will likely rain put off the excavation.

Soil that is likely to become unstable needs to be shored. Shoring is designed to support trench walls. Grade #1 spruce timber is to be used, along with plywood planks on the sides. The timbers need to shore the bottom and

the top of the trench, lengthwise, widthwise, and height wise (between the bottom and top heights). All shoring should be installed from the top down and removed from the bottom up. Shoring should be constructed as the excavation proceeds. (NOTE, as of Jan, 2013 employees are not to enter a shored trench or unshored trench, employees may only enter ¼ sloped excavations.

All services must be located and marked. Remember that while most of our project sites will not have services other than overhead hydro, almost all will have septic fields.

Employees are to ensure all vehicles in the area have been shut off 15 minutes prior to entry, CO2 can collect in excavations.

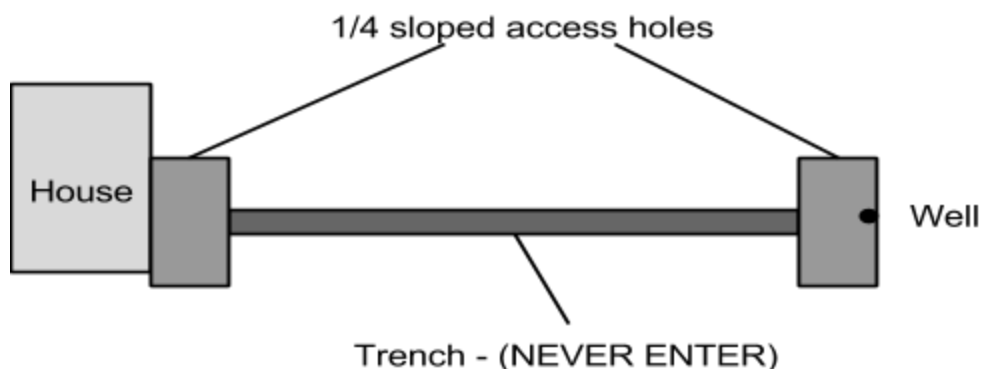
Amendment A130601A - After the May 31st, 2013 incident we have learned that ALL sites must have locates done - nothing else has any weight from now on. Locates are to be processed through One Call. If proper locates do not exist, cannot be read, or don't make sense to the Supervisor or ANY employees, ALL excavation, drilling, shovels, or heavy machinery travel is to be postponed until such a time that proper locates can be obtained and or understood.

Unstable soil that cannot safely be shored before it collapses needs to be excavated at a 1 to 4 height to width ratio before an employee may enter. Consider all soils to be loose and dangerous in terms of collapse. Workers may not enter a trench that is not sloped.

Trenches MAY not be deeper than 2.4 meters.

Employees, supplies, and equipment are not to be within 3 metres of a sloped trench when workers are present.

Amendment (A13060312A) To prevent injury and damage to a Client's property, Trenches are to be sloped at ¼ ratios near the house and well, so allow employees to gain safe access to drill the pitless and house connections and connect the PE Pipe. When connected on one side the employee is NOT to enter the rest of the trench, but instead exit the first side and retention at the other end. The wire and pipe can then be dropped (carefully - use drop ropes) from the surface such that employees never need enter the trench. See diagram below.



Amendment A130601B - No employee, Supervisor, Client, or Visitor is allowed to be smoking on a work site when ANY excavator work is currently underway. This includes “digging”, “filling in”, “landscaping”, or any other excavation related activity that could possibly dislodge, bend, scrape, or in any way compromise a natural gas line.

Amendment A130601C - No employee, Supervisor, Client, or Visitor is allowed to be smoking on a work site when drilling between 0 and 10 feet is currently underway.

The hazards of trenches we work with:

- falls, slips, and trips into trenches or excavations
- hazardous atmosphere