

# CONFINED SPACE ENTRY PLAN

OCCUPATIONAL SAFETY AND HEALTH MANUAL



<b>Policy Owner:</b>	Risk Management	<b>Effective Date:</b>	March 1, 2021
<b>Category:</b>	600	<b>Reviewed Date:</b>	n/a
<b>Policy Number:</b>	010	<b>Revised Date:</b>	n/a
<b>Scope:</b>	All Employees	<b>Training Needed:</b>	Yes
<b>Associated Form:</b>	Confined Space Assessment Worksheet Confined Space Entry Permit Forms Contractor Notification Form	<b>Training Frequency:</b>	At appointment to related position

## CONFINED SPACE ENTRY PLAN

Only authorized employees shall enter a confined space. The supervisor is responsible to see that the proper preparation and entry protocols are completed prior to entry and maintained during entry. A designated employee (entry supervisor) may be assigned the responsibility for overseeing that confined space entries are made in compliance with our procedures.

Remember if you have questions about any space, please consult with the supervisor or the entry supervisor prior to entering a confined space.

The standards that apply to confined space are listed below:

Permit Required Confined Space (Update 01/2015) Oregon 437- 002-0146

General Environmental Controls 437-002-0146 Subdivision J

## PROCEDURES

This written program includes the following requirements of an Oregon OSHA 437-002-0146 compliant Confined Space Entry Program:

1. Survey of workplace to identify identifying and evaluating hazards, as well as determining which spaces are confined and permit required confined spaces.
2. Methods for eliminating and controlling hazards.
3. Educating employees on what a confined space and a permit required confined space are.
4. Informing employees of the locations of the permit required spaces and the hazards associated with them.
5. Development of a written permit confined space program to protect employees who will enter a permit required con-fined space.
6. Providing employees with the written confined space pro-gram and educating them on that program.
7. Training employee on the roles, responsibilities of entrants, attendants, and entry supervisors.
8. Ensuring that unauthorized and untrained employees are not allowed to enter a permit required confined space.

9. Train employees on the process for entering, performing work and exiting a permit required confined space.
10. Ensuring employees know what information is required on the confined space entry permit per the duration requirements in 1910.146, including the start and stop times required by 437.002.146.
11. Developing a catalog of permit spaces that describe why they are a permit space.
12. Ensuring that equipment is maintained and used is in accordance with the manufacturers guidelines and that employees have training on that equipment.
13. Ensure that employees have training so that they know the location, presence and hazards associated with the con-fined spaces and which spaces are permit required.
14. Ensuring there is an agreement with an outside rescue service if employees are not required to provide confined space rescue. If employees are required to provide con-fined space rescue, they will be receive the training requirements, practice and qualification that are required of rescue personnel.
15. Procedures for concluding entry and canceling an entry permit.

Examples of confined spaces that require permits include but are not limited to:

1. Holding Tanks
2. Manholes
3. Primary tanks at Wastewater and Water Treatment Plants
4. Underground Vaults/Pits
5. Crawl Spaces
6. Water Reservoirs (above ground)
7. Digesters
8. Applicator Machines
9. Aeration basins

A list of our specific permit required confined spaces are catalogued and located in the Public Works Office, including the reasons why these confined spaces are permit required and the hazards associated with the entry into these locations.

## DEFINITIONS

**Confined Space:** A confined space is one that meets all of the following requirements:

1. Large enough and configured in such a way that an employee can enter the space and perform work.
2. Space that has limited and/or restricted entry, exit, or both.
3. An area that is not designed for continuous occupancy. Be aware that the presence of a ladder, lighting or ventilation doesn't always mean that the space is designed for continuous occupancy.

Some examples of confined spaces are water tanks, clarifiers, digesters, vessels, silos, storage bins, hoppers, vaults, pipes, tunnels, sewers, manholes, wells, vats, hoppers, and pits.

**Permit-required space:** A permit-required confined space is a confined space that contains or has a potential to contain atmospheric hazards. It has material that has the potential for engulfing an entrant, has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly con-verging walls or by a floor which slopes downward and tapers to a smaller cross-section. It also contains any other recognized serious safety or health hazard.

Never assume that a permit space is safe to enter. They may contain atmospheres that are hazardous or physical hazards that could cause severe injury or even death.

**Atmospheric hazard:** These types of hazards typically involve hazards in the air of the space that you are entering. They can cause serious injury or death, illness, or impair an employee's ability to escape the confined space area. Some types of hazardous atmospheric conditions include:

1. Corrosives: these types of environments can be caused from an accumulation of chemicals and other components from biological or chemical reactions over time. These hazards can impact the eyes and skin, causing immediate damage, while others might have no immediate impact on the employees. However, over time these elements could increase the potential for cancer.
2. Oxygen deficiency: atmospheres with an oxygen concentration lower than 19.5% can affect muscle coordination, breathing, and an individual's heart rate. Employees who do not have SCBA's cannot survive in an oxygen-deficient environment.
3. Oxygen enriched: atmospheres with too much oxygen content (above 23.5%) can increase the potential for fire or explosions. Too much oxygen can be caused by an improper use of supplied oxygen for breathing air, or by welding.
4. Displacement of air or oxygen: certain substances, such as inert gases, can displace oxygen in a confined space, making it unusable for employees. These inert gases include methane (on off-gas found in sewer piping and plants), nitrogen, helium, steam, Freon, argon and carbon dioxide. Methane in its gas form can be an asphyxiate, which in high concentrations can displace the oxygen supply you need for breathing, especially in confined spaces. Decreased oxygen can cause suffocation, loss of consciousness, dizziness, weakness, nausea, vomiting and loss of coordination.
5. Flammable or explosive gases, liquids, mists, vapors, fibers or dusts: Certain gases that are flammable can be commonly found in confined spaces. These gases include methane, hydrogen, acetylene, butane, chlorine, and propane.
6. Toxic dusts, fumes, smoke, mists, vapors, gases, or fibers: Certain store materials, work tasks, or manufacturing processes can create these types of atmospheric hazards. These hazards could cause irreversible adverse health effects to employees, interfere with the individual's ability to escape, or pose a threat to the individual's life.

Air-monitoring equipment: Employees should be trained on the use of air monitoring equipment or "gas sniffers" to ensure the area they are entering does not have a hazardous atmosphere. It is very important to calibrate the air-monitoring equipment, use it according to the manufacturer's requirements/instructions, and to test it every day. A "bump" test should be performed daily by exposing the meter to a quantity of gas, and comparing the readings on the meter to the actual quantity of the gas present to ensure it is testing accurately. This will verify that the air-monitoring device is properly working and calibrated for testing the atmosphere prior to entering a confined space.

Immediately Dangerous to Life or Health (IDLH): Any condition that poses an immediate threat of loss of life; or may result in irreversible or immediate-severe health effects or other conditions which could impair escape from the permit space.

Physical hazards: Physical hazards can include material that could trap or engulf or bury an employees, mechanical/electrical/hydraulic/pneumatic energy, illumination issues, falling objects, corrosive or absorbed chemicals, access issues, noise, radiation, extreme temperatures, slippery surfaces, or inwardly converging surfaces that could trap an employee. Eliminating the physical hazards are the best method by locking out equipment (per 1910.147), separating piping systems from the con-fined space, or blanking/blinding piping systems.

Non-permit space: A confined space that does not contain or (with respect to atmospheric hazards) have the potential to contain any hazard capable of causing death or serious physical harm. Examples include: vented vaults, motor control cabinets, crawl spaces, and dropped ceilings. Although they are "con-fined spaces", these spaces have either natural or permanent mechanical ventilation to prevent the accumulation of a hazardous atmosphere, and they do not present engulfment or other serious hazards.

Entry: Entry into a confined space occurs as soon as any part of the entrant's body breaks the plane of an opening into the space.

Entry permit: A written permit which defines the conditions under which the space may be entered.

Alternate entry procedures: If all physical hazards can be eliminated and all atmospheric hazards can be eliminated or controlled with continuous ventilation, then an area can be entered using these procedures. This method will be discussed later.

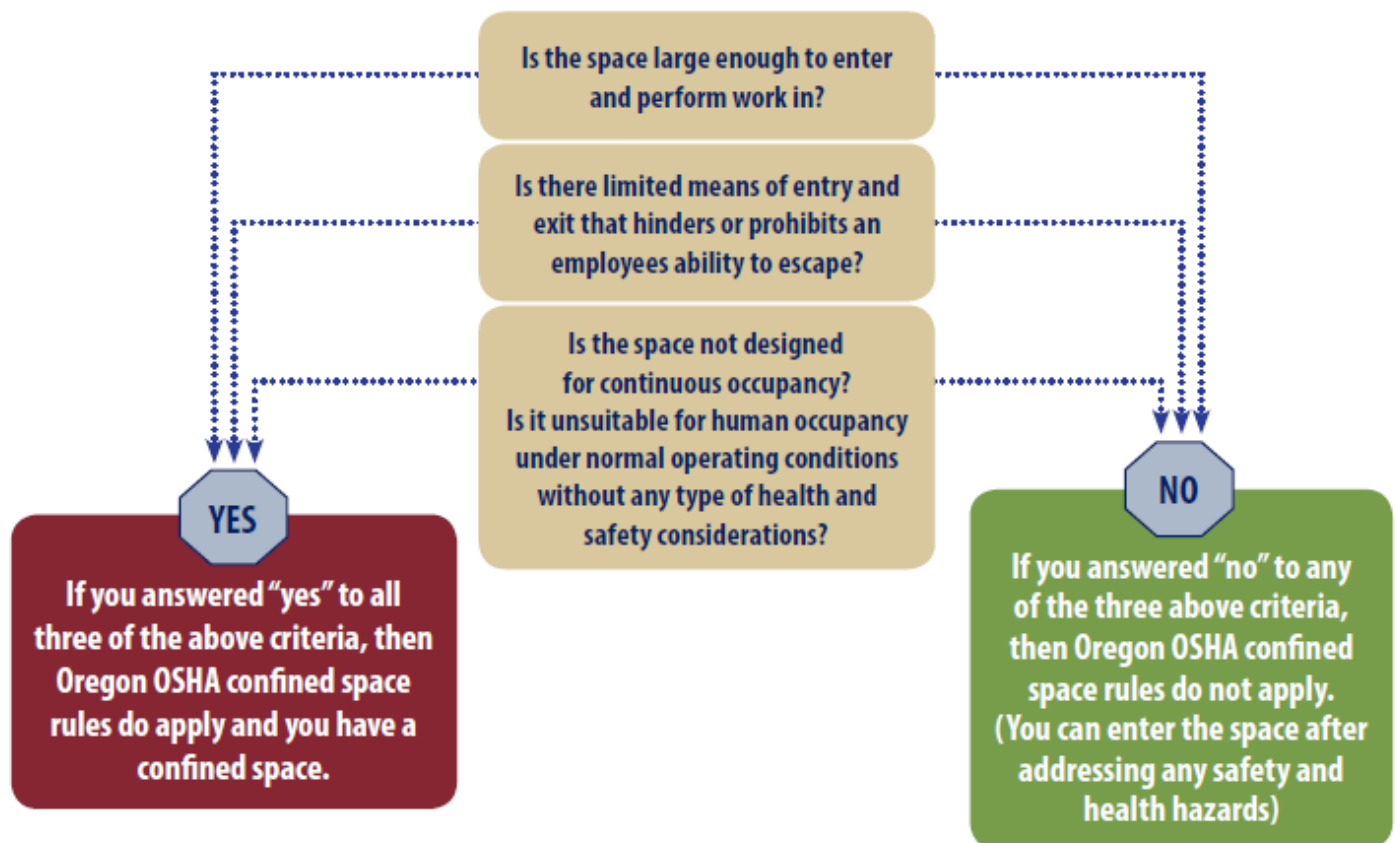
Permit authorizing personnel: The person who is trained and authorized to be responsible for determining if acceptable entry conditions are present at a permit space:

1. Where entry is planned
2. When authorizing entry
3. Overseeing entry operations
4. Terminating entry as required by this program.

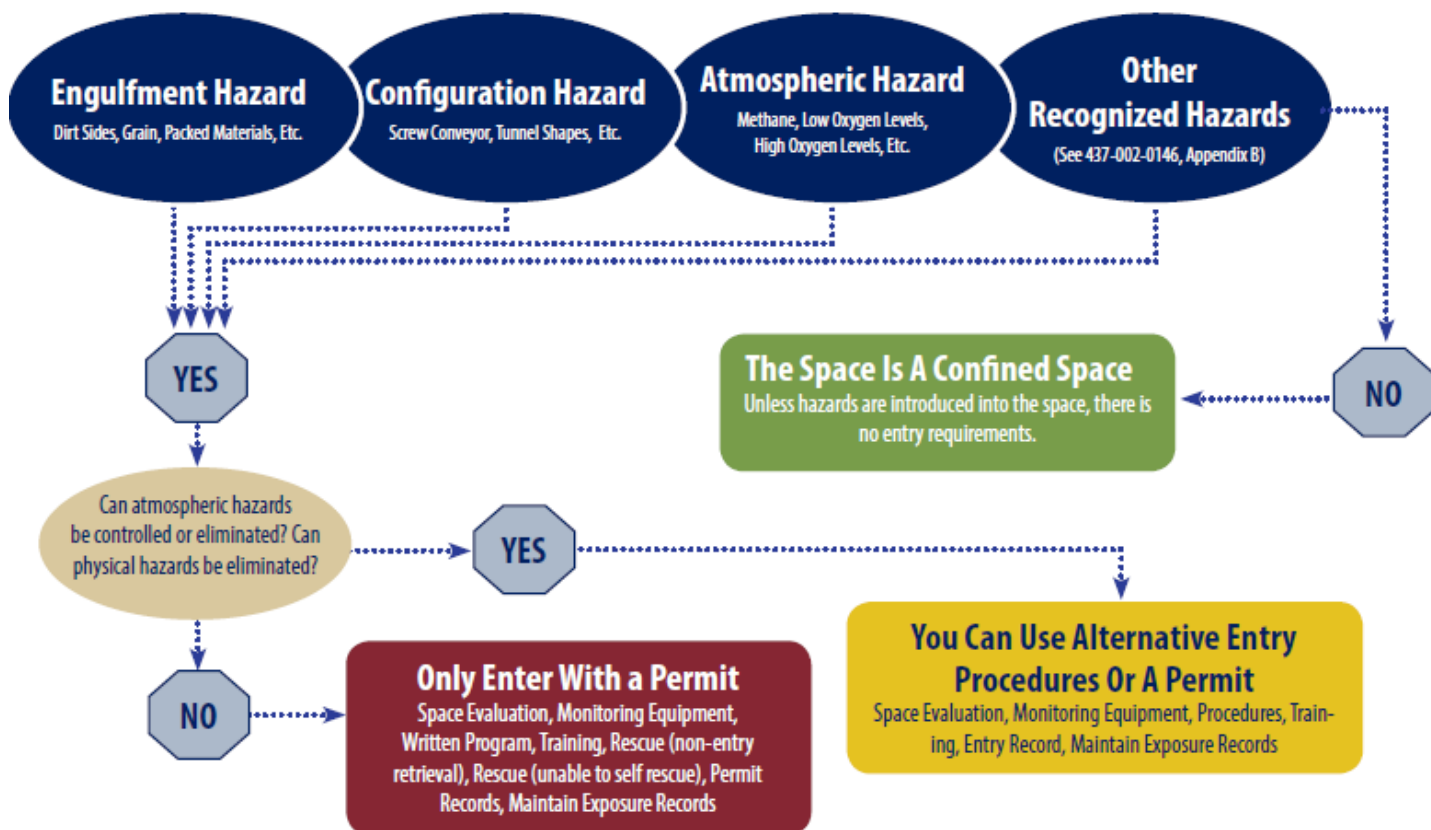
Permissible Exposure Limits (PEL): An airborne chemical exposure limit established by OR-OSHA which cannot be exceeded without proper respiratory protection and the implementation of feasible engineering controls.

Enclosed space: A space that has a limited means of entry or egress, that is designed for periodic entry by employees under normal operating conditions, and that is not expected to contain a hazardous atmosphere, but may contain one or more unusual conditions. Enclosed spaces include manholes and vaults that provide employees access to electrical generation, transmission, and distribution equipment.

#### FLOW CHART EVALUATION



Are one or more of these hazards present?



**EVALUATING THE CONFINED SPACES AND PERMIT-REQUIRED SPACES**

The City of Florence will evaluate all confined spaces to determine whether they are permit-required, as well as what hazards exist and what procedures must be followed for an employee to safely enter the area. The same applies for any mobile employees if there are confined spaces at the sites where they will be working.

Our facilities have been surveyed to identify all confined spaces and all permit required confined spaces. It is the responsibility of the supervisor to ensure that the survey is updated on all permit required confined spaces.

Confined spaces are identified based on the hazards present in the confined space and the limitations on entry/exit. Once you have identified that you have a confined space, the chart below will help determine if it is a permit required confined space.

The City of Florence has identified the following areas to be permit-required confined spaces. A more detailed catalogue of permit-required spaces will be kept in each department and at each work location where these confined spaces are located. Only authorized staff will be allowed to enter these confined space areas.

Area	Location	Reason for Permit Required (hazards, etc.)	Safety Precautions to be Used

Employees will not enter areas that have not been evaluated. The below locations have not been evaluated:

Area	Location

Permit required confined spaces will be identified as such. Signs/labels, or tags will be used to identify the area as a permit required confined space.

Any time conditions within a confined space change, that space will need to be re-evaluated.

Contractor safety around our confined spaces: Contractors will need to evaluate the confined space if one or more of their employees will enter the space, or assumes control over the space. Our entity will notify any contractors about all hazards or potential hazards in the confined spaces, if those spaces have been previously evaluated and what hazards were identified, and what precautions/procedures are required for entering those spaces.

### GENERAL RESPONSIBILITIES

Employer: As the employer, we will survey the workplace for permit required confined space. Once they have been identified, we will inform employees of the location of the permit required spaces and the hazards involved with those areas. This will include a catalog of the permit spaces. We will provide any equipment required to enter those areas and ensure that employees will be trained on the use of that equipment. Only trained staff will enter confined spaces.

Rescue Team: We have coordinated an agreement with Siuslaw Valley Fire and Rescue to provide confined space rescue efforts. Their contact information is:

*See rescue team contract, which outlines services being provided as well as updated confined space rescue training certification for the rescue company.*

**\*\*Attn Employer**: Firefighters whose first priority is to respond to emergency (911) calls might not be a sufficient source as a rescue team due to their potentially being unavailable. It is better to have a designated rescue provider who is available when needed. Firefighters who are used and not on your designated rescue team and who respond to emergency calls for a confined space rescue must comply with Subdivision 2/L, 437-002-0182, Oregon Rules for Firefighters.

For any confined spaces that have immediately dangerous to life or health (IDLH) hazards that require an immediate response, confined space rescue providers must be available on site for the duration of the entry. All rescuers must be knowledgeable in basic first aid and CPR and at least one rescuer must be certified in first and CPR.

Rescuers must practice non-entry rescues within 12 months before an entry. Practice rescues include:

1. Every type of space in which the rescue team might perform rescues.
2. Removing people (or mannequins/dummies) from the actual permit spaces or a simulated space that has similar configurations and characteristics.

Entry rescues should only be considered when a non-entry rescue would increase the overall risk to the entrant or for some reason is not feasible. The rescue team should have the following items:

1. Information about any hazards that they might encounter in the confined space.
2. Access to the permit spaces that they need to enter.
3. Appropriate personal protective equipment that they might need based on the hazards present in the confined space.

4. Any other equipment that they might need to ensure a safe entry.
5. The same training as the entrants, attendants, and entry supervisors.
6. Must be knowledgeable in first aid and CPR. At least one person must be certified in both.

Supervisors: The supervisors are responsible for ensuring that the proper safety equipment is available and used for the safety of the employees during confined space entry. A designated employee may be assigned the responsibility for directing the permit confined space entry. The supervisors are responsible for maintaining copies of all permits issued for one year. The permits will be reviewed during the annual program evaluation. The supervisor will conduct an annual evaluation.

Entry Supervisor (permit authorizing personnel): OR-OSHA uses the term entry supervisor as designation that someone must be in charge of the planned permit entry. The person does not have to be in management. An employee who has received additional training and has the authority to authorize employee to enter into confined spaces can be designated as an entry supervisor. The entry supervisor's duties include:

1. Evaluation of all confined spaces including those that are non-permit to determine what hazards the entrants might face, as well as the signs/symptoms/consequences from exposure to the hazard.
2. Ensure that all hazards can be or are controlled or eliminated.
3. Verify that all tests have been conducted as specified in the entry permit, and that all procedures and equipment are in place and outlined in the permit prior to signing the permit and allowing access to the space.
4. Inform entrants and the attendants about the hazards and conditions that are found in the confined space, and how they can eliminate or control those hazards.
5. Verify the availability of rescue service providers and that they are readily accessible.
6. Completion of the work permit indicating the safety equipment required and what special precautions to be observed.
7. Determining the number of employees permitted to enter and the duration of the permit.
8. Responsible for the cancellation of the permit.

Attendant: Attendants are responsible for monitoring the entrants' activities from outside of the confined space. The responsibilities of the attendant are as follows:

1. Knowledge of the hazards that the entrant will face, which includes any signs, symptoms, or consequences of being exposed to those hazards.
2. Tracking of the number of entrants working in the confined space.
3. Remaining outside of the confined space until they are relieved by another qualified attendant.
4. Continue to communicate with the entrants in order to monitor their status or alert them if they need to evacuate the space if the following events occur:
  - a. There is a hazardous condition inside the space.
  - b. The entrant's behavior appears to be affected by the exposure to the hazard.
  - c. Conditions outside of the confined space might endanger the entrant.
  - d. The attendant is not able to perform the duties required of an attendant.
5. Contact emergency responders/rescue team as soon as the entrants need to escape from the confined space.
6. Follow the established non-entry rescue procedures.
7. Unauthorized people: It is the attendant's responsibility to warn unauthorized people to stay away from the con-fined space. Tell them they must exit the space if they have entered it. Inform the authorized entrant and entry super-visor that unauthorized people have entered the space.



Entrants: Entrants are the individuals who are allowed to enter a permit required confined space. Their responsibilities include:

1. Being trained on the hazards that are present inside the confined space they will be entering.
2. Know the signs, symptoms and consequences of exposure to the hazards.
3. Constant communication with the attendant to ensure that the attendant can monitor their status and warn them should a situation arise that they need to evacuate.
4. Inform the attendants about hazardous conditions or symptoms of exposure.
5. Ensure that they leave the space immediately when one or more of the following occur:
  - a. The attendant or entry supervisor give an order to evacuate.
  - b. The entrant recognizes any warning signs or symptoms that indicate exposure to the hazard or a dangerous situation.
  - c. The entrant detects a dangerous condition or hazard.
  - d. The evacuation alarm is activated.

All Employees: All Employees are required to follow the appropriate confined space entry procedures and ensure that the equipment in use is performing properly. Employees authorized to make confined entries are trained in the confined space program and entry procedures.

## CONFINED SPACE CLASSIFICATIONS AND SAFETY PROCEDURES

Entry into confined spaces will occur only after the following rules are met:

### Training

1. Only staff trained in our entry policies and procedures will perform work in a confined space. Supervisors will ensure that only authorized employees who have received training in the hazards of confined space entry and proper entry procedures are permitted to enter confined spaces.
2. Training must be recorded, including the employees name, the training date, employees' responsibilities and the signature of the trainer.
3. Training is required for new or current employees that will be working in a confined space:
  - a. Before an employee is assigned to permit-space responsibilities.
  - b. Prior to a change in the employees assigned duties.
  - c. If there is a new permit space hazard for which the employee has not been trained
  - d. If there are any changes to the written permit-space program.
  - e. Any time a review of an entry permit identifies that there are problems with entry into that area.
  - f. If there is any deviation from an established procedure or it appears that the employees' knowledge of the procedures are inadequate or lacking.
4. Awareness Training: Any employees who work or may work in an area with a known confined space must receive awareness training regarding where the permit required spaces are located. This is to ensure that employees are aware that permits are required to enter those spaces, that there are specific procedures for entering the spaces, that there is a written permit-space program, how entry is authorized by the alternate entry permit, and that they can identify where those spaces are. This training will be repeated any time there are changes to the written permit-space program or if there are new or previously unidentified permit required confined spaces that are identified.
5. A list must be maintained by the supervisor of all employees trained and certified to participate in the Confined Space Entry Program at each of the following levels:
  - a. Level 1 Authorized Entrants
  - b. Level 2 Entry Supervisor and Authorized Attendants



### c. Level 3 Permit Preparer

#### Inspection

The safety equipment to be used in a designated confined space must be inspected on a routine basis by a designated employee. The employee will inspect and/or test the equipment to ensure that it is in working condition as outlined by the OR-OSHA rules or by the manufacturer's specifications. The inspection frequency varies depending on specific rule requirement(s) and by the manufacturer's specifications. Equipment not functioning will be repaired by authorized manufacturer's representatives.

The equipment includes, but is not limited to:

- Ladders or similar equipment to assist with entry and exit from the space
- Man-hoists
- Safety harness and life lines
- SCBA
- Gas monitors including oxygen monitors
- Power ventilating equipment to maintain acceptable entry conditions
- Communication systems (voice or radio) to ensure communication between the attendant and entrant, as well as to initiate rescue if needed.
- Appropriate lighting to ensure entrant can see work being performed in the space as well as being able to exit the space quickly in an emergency.
- Barriers to protect entrants from hazards outside the space such as pedestrians or vehicles, as well as protecting those individuals from accidentally entering the space.
- Appropriate personal protective equipment that is needed.

#### Entry

1. All Confined Space entries will be performed following the procedures outlined in detail in this chapter.
2. In order to determine if a permit is required, use the "Confined Space Assessment Worksheet."
3. A Confined Space Permit or an Alternate Entry must be issued for confined space entry. A sample Confined Space Entry Permit form can be found below. Permits must be properly filled out in advance and followed.
4. The permit is required to be kept for one year. The Supervisor will maintain a copy of each permit to summarize information on the annual review of this policy.
5. Permits may be granted for the duration of the project requiring confined space entry. The permit is only valid as long as the original physical conditions set out in the permit continue to be met.
6. The permits are to be posted at the worksite.

#### Air Testing

1. Testing of the air within confined spaces must be performed prior to entry to determine oxygen content, toxic gas potential, and flammable or explosive atmospheres. The initial test will be taken in the space to be entered prior to entry.
2. Entry into a confined space is prohibited until initial testing of the atmosphere has been done from outside the space. Entry without respiratory equipment will only be made after the appropriate tests show that the atmosphere is safe.
3. The tests performed will include those for oxygen content, flammable gases, and carbon monoxide. The entry supervisor, depending on the circumstances, may require additional tests.

### Acceptable Atmosphere without Air-Supplied Respirator

If the space meets the following air quality standards then entry may be done without a SCBA or continuous airline with escape bottle.

- Oxygen level between 19.5%: 23.5%.
- Vapors below 10% LEL (Note: many flammable gases are toxic at very low percentages in air thus 10% of the LEL may be a toxic exposure.) The person authorizing entry should carefully judge all readings on the combustible gas sensor.
- Hydrogen sulfide below the PEL of 10 ppm.
- Carbon Monoxide below the PEL of 35 ppm.

Note: If unusual odors are present, entry shall be terminated immediately. The presence of odors is not always related to the degree of hazard just as the lack of odor does not mean that it is safe; however, odors could be the result of an accidental spill which could affect your health and safety. The supervisor will be notified to ensure that the reasons for the unusual conditions aren't due to an accidental chemical spill, release, or process.

### Ventilation

Ventilation of confined spaces will be used to provide adequate levels of oxygen, to dilute toxic and flammable gases, and to improve general air quality. The ventilation equipment will be explosion proof if it is placed inside the confined space.

### Other Chemicals

The Safety Data Sheets (SDS) for all products and cleaning materials used in the confined space must be reviewed before entry unless the products have already been covered with the employees in the routine hazard communication training.

### Electrical

Only double insulated electric tools or tools on a ground fault circuit interrupter system are used in confined spaces. All portable lights and tools shall be explosion proof when working in a confined space where there is a potential flammable or explosive atmosphere.

### Lockout

Mechanical and electrical equipment installed in the confined space must be disconnected from its power source and locked out. Our lock-out program must be followed. See 600.007.

### Emergency

The Entry Supervisor (Permit Authorizing Personnel) will ensure that the proper rescue procedures and equipment necessary to rescue an entrant from a permit space are implemented and provided. This includes:

- Safety harness, life line and tripod hoist or other type of rescue devices as needed for the permit spaces being entered which are a vertical entrance of more than 5 feet.
- Communication with other entry team members by mobile radio, telephone or other effective means is provided.
- First aid and emergency response by notification of the First Aid/CPR trained member.

### Traffic Hazards

Employees working in roadways/walkways need to ensure their safety and that of their coworkers by proper control of traffic hazards and access to open manholes. All necessary barriers and traffic control devices must be used.

### Entrance Covers

When entrance covers are removed, the opening will be promptly guarded by the outside attendant as well as the following:

- Portable railings
- Temporary covers
- Other temporary barriers

The barriers will protect the opening to prevent other employees from accidentally falling into the opening and preventing foreign objects from entering the space.

### Ladders

A ladder, if used for entry, must remain at the site throughout the work period.

### Retrieval System

A retrieval system will be used for each full permit entry unless the retrieval system would increase the overall risk of the entry or would not contribute to the rescue of the entrant. For entries using the retrieval system, each entrant to a Permit Required Confined Space will wear a chest or full body harness with a retrieval line. Wristlets may be substituted if the chest or full body harness is not feasible or creates a greater hazard. The other end of the retrieval line must be attached to a mechanical lifting device or a fixed point outside of the confined space. A mechanical lifting device will be used to retrieve personnel from vertical type confined spaces that are more than 5 feet deep.

A retrieval system is not usually considered for use during entries conducted using Alternative Procedure or Reclassification Certificates.

### Hot Work

When any hot work involving sources of ignition including welding and burning are done in a confined space, all fire hazards and flammable atmospheres must be controlled. All combustible material must be protected. Hot work permit and instructions are found below. These procedures are in addition to the general Hazardous Atmosphere Permit Entry requirements.

### Contractors

When we hire an outside contractor to conduct confined space work, the Project Manager/Supervisor must ensure that the contractor is provided with information about the hazards associated with the confined spaces involved in the contract. See below.



## Confined Space Assessment Worksheet

Trained entry supervisors will complete the confined space assessment worksheet. Space characteristics and controls may change. As a result, a space may be initially documented as a permit space and then need to be reclassified. The supervisor must keep documentation on the space change on the assessment form.

The following information must be gathered and recorded. The evaluator must also sign the assessment sheet and make sure that this is available to employees entering the space.

The initial step in assessing a space is to determine if the space is a “confined space” then to assess the space as to whether it is permit-required or non-permit. It is critical that the assessor uses Oregon OSHA’s definition for each of these types of spaces in making the determination.

### **Step 1: Confined Space Determination**

1. Space is large enough and so configured that an employee can bodily enter and perform assigned work.
2. Space has limited or restricted means for entry or exit.
3. Space is not designed for continuous employee occupancy.

### **Step 2: Non-permit Space**

1. Space has an extremely low likelihood that an IDLH (immediately dangerous to life and health) or engulfment hazard could be present, and where all other serious hazards have been controlled. The Oregon OSHA standard defines a non-permit space as: A confined space that does not contain (with respect to atmospheric hazards) or have the potential to contain any hazard capable of causing death or serious physical harm.

### **Step 3: Permit Required Space**

1. An atmosphere which exposes employees to a risk of death, incapacitation, injury or acute illness from one or more of the following causes: flammable or combustible gases, oxygen deficient or enriched atmospheres, toxic atmospheres, engulfment, and other serious physical hazards.
2. Spaces will have limited or restricted means for entry or exit.
3. These spaces are not designed for continuous employee occupancy.

### **Step 4: Determining Need for Hot Work Permit**

1. Hot Work Permit: Any welding or hot work being done in a confined space requires both a Confined Space Permit and Hot Work Permit even if the confined space is originally defined as Non-permit.

### **Step 5: Reclassification of Permit Space:**

1. If the permit space poses no actual or potential atmospheric hazards and if all hazards within the space are eliminated without entry into the space, then the permit space may be reclassified as a non-permit space.
2. If testing and inspection during a permit entry demonstrates that the hazards within the permit space have been eliminated, then the permit space may be reclassified as a non-permit space.
3. The supervisor must document this determination.
4. If hazards arise within a declassified space, then the employees will exit and a permit-entry will be required with appropriate safeguards.



## Confined Space Assessment Worksheet Questionnaire

Where is the Potential Confined Space & Specific Location (Attach a photograph or drawing of the space.)
Reasons for Entry:
How frequently is this space entered:
What are the specific conditions of the space?    Other: Entrance? <input type="checkbox"/> Bottom <input type="checkbox"/> Door <input type="checkbox"/> Side <input type="checkbox"/> Hatch <input type="checkbox"/> Top <input type="checkbox"/> Manhole cover
Do Contractors enter space? <input type="checkbox"/> Yes <input type="checkbox"/> No  <i>**If contractors will be entering the space, it is required that they be made aware of the confined space hazards and processes for eliminating or controlling those hazards be shared with them.</i>

## Checklist Of Additional Safeguards

ATMOSPHERE TESTS	RECORD LEVELS
Oxygen – more than 19.5% less than 23.5%	
Flammable Vapors – below 10% LEL	
Combustible Dusts – below the PELs	
Temperature	
Chemical Level	
Other	

# Safety Manual Forms



## Checklist Of Additional Safeguards

ConfinedSpace:	Hazard:	Safeguard:
<b>ISOLATION METHODS</b>		
Electrical		
Mechanical		
Other		
<b>HAZARDOUS WORK</b>		
Welding/Burning		
Open Flame		
Electrical Work		
Other		
<b>SPECIAL REQUIREMENTS</b>		
Lock-outs		
Line Disconnected		
Vessel/Tank Purge- Flush/Vent		
Ventilation		
Secure area		
Lighting		
Communication		
Fire Extinguishers		
Emergency Egress Procedures		
Other		
<b>PERSONAL PROTECTIVE EQUIPMENT</b>		
Harness & Life Line		
Respirator		
Eye Protection		
Hearing Protection		
Protective Clothing		
Gloves		
Boots		
Hard Hat		



## Confined Space Entry Permit Forms

A written permit is necessary because of the special precautions that must be taken to ensure that the confined space work is performed safely. The permit functions as a checklist to ensure proper work preparation and atmospheric testing. The permit establishes expiration time and date which prevents the entry permit from being used for unauthorized entries. The permit also requires the signature of the responsible person in charge and employees who will perform the work.

There are 3 permit forms:

- 1. Confined Space Entry Permit:** The permit requires that the entry be evaluated for safety and health hazards and necessary controls.
- 2. Hot Work Permit:** The form to be used with the Confined Space Entry Permit which addresses the additional hazards from welding and other hot work.

Confined Space Permit Entry Instructions: The Permit form includes the following information:

1. The identity of the permit space or location of work.
2. The purpose of entry (nature of job being done).
3. The individual authorizing the entry shall sign the permit before the entry begins. Entry is not permitted until all actions and conditions necessary for safe entry have been performed.
4. Special instructions prior or during entry.
5. Space classification. Note if the space is determined not to be a confined space, then a record should be made and noted on the form.
6. A list of the measures for isolation of hazardous energy sources in the permit space which includes lock-out procedures to be performed.
7. Type of hazardous work being performed which takes additional precautions including: painting, sand blasting, electrical work, welding, etc. If hot work is required then the Hot Work Permit will also be required.
8. Special precautions that will be needed include procedures for purging, inserting, ventilating and flushing the space to remove or control the potential hazards.
9. The communication procedures and equipment used by authorized workers and attendants to maintain contact.
10. Rescue procedures, equipment, and other services which would be summoned in case of emergency and means of communication with those services.
11. The personal protective equipment, such as: hard hats, gloves, coveralls, respirators, safety harness, and retrieval lines, provided in order to ensure employee safety.
12. Acceptable environmental conditions with regards to the hazards identified in the permit space by monitoring the air quality.
13. The date of entry and authorized duration.
14. The authorized confined space workers' signatures.
15. Upon completion of the entry covered by the permit, and after all workers have exited the permit space, the individual authorizing the entry shall cancel the permit.

### NOTICE

In the event that toxic/flammable gases in a confined space cannot be reduced below acceptable levels as posted on the procedures, no one shall enter except when using proper equipment including an SCBA unit or an air-supplied respirator.





## Confined Space Entry Permit

Department:	Location:	Date:
Person in charge of work permit:		
Description of the space being entered:		
Reason for the entry:	Nature of the Work Being Done:	
Hazards Present:		
Special Instructions:		
Communication Methods Being Used:		
Rescue Services to be used and available (including contact information):		

## Hazard Checklist

Atmosphere Tests (Record Results in Completed Column)	Check if needed	Results
1. Oxygen: 19.5%:23.5%		
2. Flammable Vapors: below 10% LFL (Fire/Explosion)		
3. Hydrogen sulfide: below PEL 10 ppm		
4. Carbon Monoxide: below PEL 35 ppm		
5. GAS TEST Equipment		
GAS TEST Equipment Calibration Date:	Name of individual conducting tests:	Date:
6. Other Chemicals		

# Safety Manual Forms



## Confined Space Entry Permit – Page 2

	Check if required	Check when completed
<b>Isolation: Lockout/Tagout Procedures Required</b>		
1. Electrical		
2. Mechanical		
3. Other :		
<b>Hazardous Work</b>		
1. Welding/Burning (NOTE: Complete a Hot Work Permit)		
2. Electrical Work		
3. Painting		
4. Sand Blasting		
5. Other:		
<b>Special Requirements</b>		
1. Lines Disconnected		
2. Vessel/Tank Purge: Flush		
3. Ventilation		
4. Communication		
5. Emergency Rescue Procedures		
6. Other:		
<b>Personal Protective Equipment Needed</b>		
1. Harness & Life Line & Tripod		
2. Respirator		
3. Protective Clothing		
4. Other:		
Measures used for entry (to isolate the space and eliminate/control hazards):		
Guarding/Barriers Used:		
Acceptable Entry Conditions? <input type="checkbox"/> Yes <input type="checkbox"/> No	Description of problems encountered during entry:	
<b>Date &amp; Time Issued:</b>	<b>Date &amp; Time Work Completed/Stopped:</b>	<b>Date &amp; Time Permit Expires:</b>
Employee (Entrant):		
Employee (Entrant):		
Permit Authorizing Personnel:		
Signature of Entry Supervisor:		



## Confined Space Entry Alternative Entry

Alternate entry can only be used to enter a permit space after one of the following has been satisfied:

1. All physical and atmospheric hazards in the space have been eliminated so that conditions that caused those hazards no longer exist. OR
2. All physical hazards in the space have been eliminated and atmospheric hazards are controlled with continuous ventilation.

Alternate entry procedures address:

1. Identifying the hazards associated with the space.
2. Methods/means used to eliminate those hazards identified.
3. Methods/means used to ensure those hazards have been eliminated.
4. Methods/means used to test the confined space for any atmospheric hazards are present or still might exist.
5. Process to determine if unsafe conditions or hazards occur before or during entry into the space.
6. Criteria for evacuating the space.
7. Training for employees in these procedures.
8. Process to ensure that employees have appropriate PPE and method of communication during entry.
9. Process to ensure that employees follow these procedures.

Alternate entry permits must be kept where the confined space entry is located for the duration of the entry. After the entry, there is no requirement to keep the permit, however our entry process is to keep them for a minimum of one year in order to review the effectiveness of our program.

## Confined Space Entry Alternative Entry

\*\*Alternate entry in continuous systems (such as sewer systems)

Alternate entry cannot be used to enter a permit space that is continuous unless you segregate the area to be entered from the rest of the space, demonstrate that engulfment won't occur and the only hazard is atmospheric, or you demonstrate and document that the hazardous conditions do not exist within the entire system during entry.

Location:	
Date/Time Permit Issued:	Date/Time Permit Expires:
Permit Prepared by:	Permit Authorized by:
Permit Posted:	Location of Space:
Entry Person:	
Attendant:	
Purpose of Entry:	

# Safety Manual Forms



## Confined Space Entry Alternative Entry, page 2

ATMOSPHERE TESTS	RECORD LEVELS
1. Oxygen – more than 19.5% less than 23.5%	
2. Flammable Vapors – below 10% LEL	
3. Combustible Dusts – below the PELs	
4. Temperature	
5. Chemical Level	
6. Other	
Hazards associated with confined space:	
Methods for eliminating physical hazards and hazardous conditions:	
Methods use to ensure hazards are eliminated and controlled:	
Continuous Ventilation Utilized? <input type="checkbox"/> Yes <input type="checkbox"/> No ***If continuous ventilation utilized, pre-entry testing must be utilized to ensure all atmospheric hazards are controlled by the ventilation, as well as continuous monitoring while the employees are in the space.	Space Safe for Entry? <input type="checkbox"/> Yes <input type="checkbox"/> No
Conditions that might cause the need to evacuate the space:	
Signature Confirming All Conditions Met and Understood:	
Permit Supervisor Signature:	
Title of Permit Supervisor:	Permit Supervisor Name:
Entry Date/Time:	Entry Completion Date/Time:

***Return Completed Permit to Supervisor: Post at space of entry for duration of the entry***



## Hot Work Permit Procedures and Instructions

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An additional Hazardous Work Permit is required when employees are welding or using some type of an open flame/hot work in a confined space. The permit is to ensure that the proper planning and precaution are taken because hot work in a confined space is inherently dangerous.

The permit system requires the entry supervisor to complete the Confined Space Entry Permit and the Hot Work permit:

1. The identity of the permit space or location of work.
  2. The purpose of entry.
  3. Identifying the special fire hazards so that proper precautions can be implemented to control the conditions.
  4. The special measures taken to ensure that the tank or pit has been properly purged by specifying the methods for flushing and ventilating the confined space.
  5. The measures for isolation of other hazards that may be affected by hot work including: electrical lock-out, and gas or hazardous chemical line blanking.
  6. Compressed gas cylinders shall not be allowed in the confined space.
  7. Air monitoring to verify that acceptable environmental conditions are being maintained during hot work.
  8. Additional personal protective equipment, such as respirators, clothing, special eye protection and welding helmets, provided in order to ensure employee safety
  9. The date of entry and authorized duration.
  10. The authorized employees' and permit authorizing personnel signatures.
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# Safety Manual Forms



## Confined Space Entry—Hot Work Permit

**\*\* This permit is to be used with the confined space permit when any hot work is planned to be done in a confined space.**

Location:	
Date/Time Permit Issued:	Date/Time Permit Expires:
Permit Prepared by:	Permit Authorized by:
Permit Posted:	Location of Space:
Entry Person:	
Attendant: _	
Special Fire Hazards:	
Hazardous Work to be performed (Welding/Burning/Open Flame):	

## Checklist

Special Requirements					
Tank or Pit: Flush & Ventilate: <input type="checkbox"/> Yes <input type="checkbox"/> No		Type of deposit or material in tank:			
		Method of Cleaning:			
Fire Prevention Precautions:					
Ventilation for Welding Fumes: <input type="checkbox"/> Yes <input type="checkbox"/> No		Types:			
Energy Control/Lockout Tagout	Yes	No	Energy Control/Lockout Tagout	Yes	No
Electrical:			Gas Lines:		
Mechanical:			Other: _____		
Additional Personal Protective Equipment Needed					
Respirator: Type: _____			Hearing Protection:		
Welding Helmet:			Protective Clothing:		
Date & Time Issued:			Date & Time Expired/Cancelled:		
Employee (Entrant):					
Employee (Entrant):					
Employee (Attendant):					
Entry Supervisor:					



## Contractor Notification Form

The contractor notification will be done by the Project Manager or Department Manager. If we contract for confined space entry work as the host employer, we are responsible to:

1. Inform the contractor that a permit required space is involved in the work. This includes information about any chemicals in the space per Hazard Communication requirements.
2. Apprise the contractor of the hazards that have been identified and any experience our employees have had with the space.
3. Apprise the contractor of any precautions our employees have taken for entry. The contractor must provide our Supervisor with a copy of the contractor's confined space program.
4. Coordinate entry operations with the contractor if more than one contractor or if our employees will also be entering the space.
5. Debrief the contractor to determine if any problems were encountered requiring changes in procedures.

## Contractor Confined Space Notification Checklist

Project Manager:		Date:
Contractor Representative:		
Location of the Space:		
The following information outlines the basic features and safety control issues we are aware of. There may be other hazards or conditions created by the Contractor.		
Checklist Of Safeguards · Hazards & Recommended Safeguards		
Isolation:	Hazardous Work:	
1. Electrical:	1. Welding/Burning/Open Flame:	
2. Mechanical:	2. Electrical Work:	
3. Other:	3. Chemicals:	
Special Requirements		
1. Lock-outs:	6. Lighting:	
2. Lines Disconnected:	7. Communication:	
3. Vessel/Tank Purge: Flush & Vent:	8. Fire Extinguishers:	
4. Ventilation:	9. Emergency Egress Procedures:	
5. Secure Area:	10. Other:	





## Confined Space Notification and Debriefing Checklist: page 2

Personal Protective Equipment Needed	
1. Harness & LifeLine	4. Hearing Protection
2. Respirator	5. Protective Clothing
3. Eye Protection	
Atmosphere Tests: List type of air testing that would be necessary:	
Copy of the contractor's Energy Control Plan Reviewed? <input type="checkbox"/> Yes <input type="checkbox"/> No	Copy of the contractor's Confined Space Entry Policy Reviewed? <input type="checkbox"/> Yes <input type="checkbox"/> No

## Contractor's Emergency Response Information Needed

Phone Number and Location of Nearest Telephone:
Name of First Aid Person & Location of Nearest First Aid Kit:
Emergency Rescue Plan:
Post Entry Debriefing Notes: