



## Purpose

This establishes the Montgomery County Government's (known hereafter as "County") Confined Spaces Policy intended to set procedures that will ensure workers safe entry into confined spaces and permit-required confined spaces to perform routine tasks associated with their employment. This policy is designed to provide the minimum safety requirements in accordance with the Occupational Safety and Health Administration's (OSHA) Confined Space Standard, 1910.146.

## Scope

This policy applies to all County employees with possible exposure to hazards associated with entry into permit-required confined spaces.

## Definitions

**Confined Space** - A "confined space" is any work area which is not intended for continuous worker occupancy, and has, by design, structure, location, limited or restricted entry and/or exit and may contain or produce dangerous accumulations of hazardous gases, vapors, mists, dusts, fumes or biological agents and enrichment of, or lack of, oxygen in the confined space.

**Entry into a Confined Space** - Entry into a confined space is defined as the action by which a person passes through a limited opening into a restricted or potentially hazardous work area. Entry is considered to occur as soon as any part of the entrant's body breaks the plane of the entry point into the confined space.

**Competent Worker** - Adequately qualified, suitably trained, with sufficient experience; to safely perform the work, with a minimal degree of supervision.

**Responsible Person** – Someone who has sufficient experience and knowledge to recognize confined space hazards, correct unsafe work conditions, and has the ability to shut down the worksite until the hazards are corrected.

**Hazards** - Anything, by its nature that will or may, endanger the safety or health of a worker. Hazards may include;

- Toxic vapors, mists, or dusts from welding, cleaning, or powder coating.
- Explosive atmospheres.
- Lack of Oxygen, causing asphyxiation.
- Electrical shock from powered tools or lights.
- Physical hazards such as slipping or falling.
- Entering a confined space without testing the atmosphere.
- Leaking cutting/welding hoses inside the confined space.
- Improper use, or not using, Personnel Protective Equipment.
- Noise



- Temperature extremes.
- Insufficient rescue equipment or procedures.
- Not following confined space entry procedures.

**Confined Space “Safe Entry Tag”** - The “Safe Entry Tag” (ADDENDUM A), is the County’s Confined Space Entry Permit. This tag is used to ensure that the existing hazards of a confined space have been properly identified, evaluated, and that all necessary preventive and protective measures and procedures are put into place for the safety and health of workers involved in confined space work.

## Responsibilities

The County is responsible for implementing and enforcing this policy. All employees must comply with this policy.

### **Supervisor**

- The supervisor in charge of the area for which the confined space entry will occur, is responsible to ensure that all preparations are in place for the safe entry of any worker.
- Ensure that a gas test of the confined space atmosphere is done before any workers enter a confined space.
- Ensure workers involved in the confined space have received training on the conditions of entry and the nature of any hazards they may be exposed to.
- Ensure the appropriate PPE is available and in good working order.
- Ensure rescue procedures, equipment, and trained rescue personnel are in place.
- Ensure a Confined Space “Safe Entry Tag” (ADDENDUM A) is completed.
- Identify the “Class” of Confined Space.
- Assign a safety watch person on the outside of the confined space.
- Periodically check the confined space entry jobs to ensure all Health & Safety procedures are being followed.
- Shall immediately shut down any unsafe confined space entry job and ensure that the job remains closed until all unsafe conditions have been rectified.

### **Workers and any other Personnel entering the Confined Space**

- The worker prior to entering the confined space will ensure that all necessary precautions and procedures are in place to their satisfaction and then sign the Confined Space “Safe Entry Tag” (ADDENDUM A).
- Will wear all Personal Protective Equipment assigned to them, to ensure their safety and health according to the hazards of the confined space job.
- Will inspect and use equipment and tools required to do the jobs inside the confined space, according to safe work practices and procedures.
- Will monitor conditions inside the confined space and if conditions should change inside that are not accounted for on the “Safe Entry Tag” (ADDENDUM A) they will discontinue the work and exit the confined space until the new hazards have been fully evaluated and the proper health and safety precautions taken according to this policy.

#### **Safety Watch**

- The qualified Safety Watch will ensure that all conditions on the “Safe Entry Tag” (ADDENDUM A) are complied with, prior to allowing anyone into the confined space.
- Ensure all of the names of workers who will enter the confined space are on the “Safe Entry Tag” (ADDENDUM A).
- Will establish the communication system to be used with those workers who will enter the confined space.
- Will know the location of the Confined Space Entry Rescue equipment.
- Will sound the emergency alarm should workers inside the confined space work area need to be rescued.
- **\*\* Safety Watch personnel shall never enter the confined space for any reason\*\***

#### **Rescue Personnel**

- Only workers properly trained and equipped for confined space rescue shall attempt a rescue by entering a confined space.



- A gas test of the confined space atmosphere must be done prior to any rescue personnel entering a confined space.
- When workers in a confined space are wearing a safety harness and lanyard, Rescue Personnel may work from the outside, without having to enter the confined space.
- Rescue Personnel must be physically capable of carrying out a rescue, and must be trained in First Aid/CPR.
- Communications must be available at the worksite to emergency response organizations i.e.; Fire Department, Ambulance.

## Training

The County shall provide training so that all employees whose work is regulated by this Confined Space Program acquire the understanding, knowledge, and skills necessary for the safe performance of their duties in confined spaces.

### Training Frequency

Responsible Person shall provide training to each affected employee:

1. Before the employee is first assigned duties within a confined space;
2. Before there is a change in assigned duties;
3. When there is a change in permit space operations that presents a hazard for which an employee has not been trained; and
4. When the County has reason to believe that there are deviations from the confined space entry procedures required in this program, or that there are inadequacies in the employee's knowledge or use of these procedures.

The training shall establish employee proficiency in the duties required in this program, and shall introduce new or revised procedures, as necessary, for compliance with this program.



### **General Training**

All employees who will enter confined spaces shall be trained in entry procedures. Personnel responsible for supervising, planning, entering, or participating in confined space entry and rescue shall be adequately trained in their functional duties prior to any confined space entry. Training shall include:

1. Explanation of the general hazards associated with confined spaces.
2. Discussion of specific confined space hazards associated with the facility, location, or operation.
3. Reason for, proper use, and limitations of personal protective equipment and other safety equipment required for entry into confined spaces.
4. Explanation of permits and other procedural requirements for conducting a confined space entry.
5. A clear understanding of what conditions would prohibit entry.
6. Procedures for responding to emergencies.
7. Duties and responsibilities of the confined space entry team.
8. Description of how to recognize symptoms of overexposure to probable air contaminants in themselves and co-workers, and method(s) for alerting the Attendant(s).

Refresher training shall be conducted as needed to maintain employee competence in entry procedures and precautions.

### **Specific Training**

1. Training for Supervisory personnel shall include proper use of monitoring instruments, including instruction on the following:
  - A. proper use of the equipment;
  - B. calibration of equipment;
  - C. sampling strategies and techniques; and
  - D. exposure limits (PELs, TLVs, LELs, UELs, etc.).
2. Training for Safety Watch personnel shall include the following:
  - A. procedures for summoning rescue or other emergency services; and



- B. proper utilization of equipment used for communicating with entry and emergency/rescue personnel.

4. Training for Emergency Response Personnel shall include:

- a. rescue plan and procedures developed for each type of confined space that is anticipated to be encountered;
- b. use of emergency rescue equipment;
- c. first aid and CPR techniques; and
- d. work location and confined space configuration to minimize response time.

**Verification of Training**

Periodic assessment of the effectiveness of employee training shall be conducted by Responsible Person. Training sessions shall be repeated as often as necessary to maintain an acceptable level of personnel competence.

## Identification of Hazards and Evaluation of Confined Spaces

**Survey**

Responsible Person shall ensure a survey of the worksite is conducted to identify confined spaces. This survey can be partially completed from initial and continuing site characterizations, as well as other available data (i.e., blueprints and job safety analyses). The purpose of the survey is to develop an inventory of those locations and/or equipment at the County that meet the definition of a confined space. This information shall be communicated to personnel, and appropriate confined space procedures shall be followed prior to entry. The initial surveys shall include air monitoring to determine the air quality in the confined spaces. The potential for the following situations shall be evaluated by Responsible Person:

1. Flammable or explosive potential;
2. Oxygen deficiency;
3. Presence of toxic gases (i.e., H<sub>2</sub>S);
4. Presence of water within confined space;
5. Presence of animals, insects, etc.;



6. Presence of toxic and corrosive materials;
7. Any other recognizable hazards.

### **Hazard Reevaluation**

The Responsible Person shall identify and reevaluate hazards based on possible changes in activities or other physical or environmental conditions that could adversely affect work. A master inventory of confined spaces shall be maintained. Any change in designation of a confined space will be routed to all affected personnel by Responsible Person.

### **Pre-Entry Hazard Assessment**

A hazard assessment shall be completed by Responsible Person(s) prior to any entry into a confined space. The hazard assessment should identify:

1. The sequence of work to be performed in the confined space;
2. The specific hazards known or anticipated; and
3. The control measures to be implemented to eliminate or reduce each of the hazards to an acceptable level.

No entry shall be permitted until the hazard assessment has been reviewed and discussed by all persons engaged in the activity. Personnel who are to enter confined spaces shall be informed of known or potential hazards associated with said confined spaces.

### **Hazard Controls**

Hazard controls shall be instituted to address changes in the work processes and/or working environment. Hazard controls must be able to either control the health hazards by eliminating the responsible agents, reduce health hazards below harmful levels, or prevent the contaminants from coming into contact with the workers.

The following order of precedence shall be followed in reducing confined space risks.

#### **I. Engineering Controls**

Engineering controls are those controls that eliminate or reduce the hazard through implementation of sound engineering practices. Ventilation is one of the most common engineering controls used in



confined spaces. When ventilation is used to remove atmospheric contaminants from a confined space, the space shall be ventilated until the atmosphere is within the acceptable ranges. Ventilation shall be maintained during the occupancy if there is a potential for the atmospheric conditions to move out of the acceptable range. When ventilation is not possible or feasible, alternate protective measures or methods to remove air contaminants and protect occupants shall be determined by Responsible Person prior to authorizing entry. When conditions necessitate and can accommodate continuous forced air ventilation, the following precautions shall be followed:

- A. Employees shall not enter the space until the forced air ventilation has eliminated any hazardous atmosphere.
- B. Forced air ventilation shall be directed so as to ventilate the immediate areas where an employee is or will be present within the space.
- C. Continuous ventilation shall be maintained until all employees have left the space.
- D. Air supply or forced air ventilation shall originate from a clean source.

## **II. Work Practice (Administrative) Controls**

Work practice (administrative) controls are those controls which eliminate or reduce the hazard through changes in the work practices (i.e., rotating workers, reducing the amount of worker exposure, and housekeeping).

## **III. Personal Protective Equipment (PPE)**

If the hazard cannot be eliminated or reduced to a safe level through engineering and/or work practice controls, PPE should be used. Responsible Person(s) shall determine the appropriate PPE needed by all personnel entering the confined space, including rescue teams. PPE that meets the specifications of applicable standards shall be selected in accordance with the requirements of the job to be performed.

## **Procedure for Confined Space Entry**

1. Identifying the work area as a confined space.
2. Conduct a hazard assessment of the confined space.
3. Classify the confined space as an A, B, or C confined space.



4. Post the confined space classification at/near the confined space.
5. Train the workers in confined space entry procedures and review the hazard assessment for the confined space.
6. Test the confined space with a minimum 4 gas monitor to determine whether or not there is a hazardous atmosphere, log the test with date, who performed it, equipment used, and initial readings.
7. If the space does contain a hazardous atmosphere (explosive gases, lack of oxygen, etc.); prepare the confined space for entry by purging or ventilating the confined space and periodically checking atmosphere with monitor until levels are no longer dangerous to health and safety (i.e., Oxygen content between 19.5% and 21.4%). All tests should be logged as stated in line 6.
8. Complete a “Safe Entry Tag” (ADDENDUM A) which must include the following;
  - a. Gas tests
  - b. Safety Procedures,
  - c. Equipment to be used i.e. (ventilation, electrical with (GFI), tools),
  - d. Personnel Protective Equipment,
  - e. Potential hazards,
  - f. Location of confined space,
  - g. Description of work
  - h. Whether lockout of any equipment, valves, etc. is required,
  - i. Communication system to be used,
  - j. Rescue equipment and personnel in-place,
  - k. Duration of confined work,
  - l. Date and time of entry,
  - m. Names of all workers entering the confined space,
  - n. Signature of qualified “Safe Entry Tag” issuer,
  - o. Signature of Safety watch and
  - p. the signature of a qualified worker accepting the “Safe Entry Tag”.
9. Once all criteria on the “Safe Entry Tag” has been completed and understood by all involved, the worker(s) can enter the confined space.



10. Once the confined space work has been completed, the “Safe Entry Tag” issuer will inspect the confined space to ensure all workers, tools and equipment have been removed.
11. The “Safe Entry Tag” issuer will then sign-off on the tag, that this confined space work has been completed.
12. All completed “Safe Entry Tags” will be filed and kept by month and year by Department Heads, Safety Coordinators, and/or the Risk Management Department.

## Confined Space Classifications

### Procedure for Classifying A, B, or C Confined Spaces

1. Confined spaces will be classified by the Area Supervisor, according to the hazard potential, then reviewed/approved by the Health & Safety resource.
2. Confined space classifications will be posted within the immediate work zone, in a conspicuous place where all workers can see the classification clearly.
3. The confined space classification will be entered onto the “Safe Entry Tag”.
4. If conditions change at any time inside the confined space, a re-classification may be warranted. The area supervisor will assess the condition changes and reclassify the space if additional hazards were found.
5. If a space is re-classified, the classification must be entered onto the “Safe Entry Tag”

### **VESSEL CLASSIFICATION SHEETS WILL BE IDENTIFIED BY THE FOLLOWING COLORS**

**CLASS “A”..... RED**

**CLASS “B”..... YELLOW**

**CLASS “C”..... GREEN**



Montgomery County Government

VESSEL/CONFINED SPACE CLASSIFICATION – CLASS “A”

VESSEL/CONFINED SPACE: \_\_\_\_\_

**CLASS “A” RISK EXPLANATION:**

**CLASS “A” MEANS:**

- Known condition inside the confined space to exceed Occupational Exposure Limit (O.E.L.) or have a high potential to exceed O.E.L.
- Environment outside the confined space is in excess of or has a high potential to be in excess of O.E.L.
- Nature of the work has a high potential to produce conditions in excess of the O.E.L.

**GAS TEST:**

- Initial test at start of each shift.
- Continuous monitoring for duration of job, (O<sub>2</sub>, LEL, H<sub>2</sub>S, and CO).
- Mid-shift check on continuous monitor.
- Periodic inspection of confined space job by supervision.

**PERSONAL PROTECTIVE EQUIPMENT:**

- Self contained breathing air must be worn when entering Class “A” vessels.
- A safety harness with tag line will be worn by workers entering the confined space.
- See the confined space “Safe Entry Tag” for further information.

**RESCUE RESPONSE:**

- Two Long Blast’s on an air horn will action First Aid, Fire or Rescue response.
- Rescue equipment will be readily available at a Class “A” confined space vessel.

**SAFETY PROCEDURES (must be in place):**

- Safety Lockout (if required).
- Safe Entry Tag.
- Gas Test Log.
- Confined Space / Safety Watch person.

**Class “A” confined space entry may require additional precautions and procedures (consult the Hazard Assessment and/or “Safe Entry Tag”).**



Montgomery County Government

VESSEL/CONFINED SPACE CLASSIFICATION – CLASS “B”

VESSEL/CONFINED SPACE: \_\_\_\_\_

**CLASS “B” RISK EXPLANATION:**

**CLASS “B” MEANS:**

- Low potential inside the confined space to exceed the Occupational Exposure Limit (O.E.L.).
- Environment outside the confined space has low potential to be in excess of O.E.L.
- Nature of the work has low potential to produce conditions to be in excess of the O.E.L.

**GAS TEST:**

- Initial test at the start of each shift (O<sub>2</sub>, L.E.L., H<sub>2</sub>S, and CO).
- Re – test if conditions inside the space change at any time during the shift.
- Periodic inspections by supervision during shift.

**PERSONAL PROTECTIVE EQUIPMENT:**

- See “Safe Entry Tag” for all PPE requirements.

**RESCUE RESPONSE:**

- Two Long Blast’s on an air horn will action First Aid, Fire or Rescue response.
- Rescue equipment will be readily available at a Class “B” confined space vessel.

**SAFETY PROCEDURES (must be in-place):**

- Safety Lockout (if required).
- Safe Entry Tag.
- Gas Test Log.
- Confined Space / Safety Watch person.

**Class “B” space entry may require additional precautions and procedures (consult the Hazard Assessment and/or “Safe Entry Tag”).**



Montgomery County Government

VESSEL/CONFINED SPACE CLASSIFICATION – CLASS “C”

VESSEL/CONFINED SPACE: \_\_\_\_\_

**CLASS “C” RISK EXPLANATION:**

**CLASS “C” MEANS:**

- Conditions inside the confined space are such that there is no detectable risk inside the confined space to exceed Occupational Exposure Limits.
- Environment outside the confined space has no detectible O.E.L. risk.
- Nature of work has no detectable potential of generating risk.

**GAS TEST:**

- Initial test at start of shift (O<sub>2</sub>, L.E.L., H<sub>2</sub>S, and CO).

**PERSONAL PROTECTIVE EQUIPMENT:**

- See “Safe Entry Tag” for all PPE requirements.

**RESCUE RESPONSE:**

- Two Long Blasts on an air horn will action First Aid, Fire or Rescue response.
- Rescue equipment will be readily available at a Class “C” confined space.

**SAFETY PROCEDURES (must be in-place):**

- Safety Lockout (if required).
- Safe Entry Tag.
- Gas Test Log.
- Confined Space / Safety Watch person.

**Class “C” space entry may require additional precautions and procedures (consult the Hazard Assessment and/or “Safe Entry Tag”).**

# **ADDENDUM**

# **A**

# SAFE ENTRY TAG

VESSEL CLASS (circle one)..... **A** ..... **B** ..... **C** .....

**THIS CONFINED SPACE HAS BEEN  
CHECKED FOR THE FOLLOWING**

	RESULTS	INITIAL IF OK
FLAMMABLE OR EXPLOSIVE VAPOURS ..(L.E.L.).....		
CARBON MONOXIDE .. (CO).....		
OXYGEN .. (O2) .....		
OTHER GASES .....		
OTHER GASES .....		
OTHER GASES .....		
TEMPERATURE .....		
ELECTRICAL EQUIPMENT DISCONNECTED .....		
LOCKOUT COMPLETED .....		
CLEANLINESS .....		
VISUAL INSPECTION .....		

**FREQUENCY OF TESTS:** \_\_\_\_\_  
(ENTER SUBSEQUENT TEST RESULTS ON BACK OF TAG)

<b>CONFINED SPACE IS SAFE TO ENTER</b>	
<b>SIGNED:</b> SAFE ENTRY TAG ISSUER	_____
WORKER(s) Receiving TAG	_____ _____ _____
SAFETY WATCH PERSON	_____
DATE: _____ / _____ / _____	TIME: _____ am. pm.

**NOTE: THIS TAG MUST BE REMOVED AND WORK STOPED SHOULD ANY OTHER UNSAFE CONDITIONS ARISE DURING THE CONFINED SPACE WORK.**

ADDITIONAL GAS TEST RESULTS:					
O <sub>2</sub>	LEL	CO	OTHER: (describe)	INITIAL if OK	DATE & TIME
START NEW TAG IF THIS ONE IS FULL					

PROTECTIVE EQUIPMENT			SAFETY PROCEDURES		
	YES	NO		YES	NO
HARD HAT			POST SAFE ENTRY TAG		
GOGGLES			POST SAFE TANK WATCH		
SAFETY GLASSES			EXPLOSION PROOF LIGHTING		
WELDING HELMET			RESCUE EQUIPMENT NEARBY		
DUST MASK			FIRE EXTINGUISHER		
SUPPLIED AIR RESPIATOR			COMMUNICATION REQUIRED		
CARTRIDGE RESPIRATOR			NATURAL VENTILATION		
WET SUIT			AIR MOVER VENTILATION		
HAND PROTECTION			VENTALATION FAN		
FOOT PROTECTION			HAZARD ANALYSIS		
HEARING PROTECTION			LOCKOUTS		
SAFETY HARNESS			EXPLOSION PROOF TOOLS		
TAGLINE ATTACHED			OPEN FLAME ALLOWED		

OTHER \_\_\_\_\_

WORK HAS BEEN COMPLETED AND AREA CHECKED;      DATE: \_\_\_\_/\_\_\_\_/\_\_\_\_

SIGNATURES:  
WORKER

\_\_\_\_\_

SAFE ENTRY TAG ISSUER:

\_\_\_\_\_

SAFETY WATCH PERSON:

\_\_\_\_\_

SUPERVISOR:

\_\_\_\_\_