



**SAN JOSÉ STATE**  
**UNIVERSITY**

## Confined Space Entry Program

San José State University  
One Washington Square  
San José, California

Facilities Development and Operations Department  
Environmental Health and Safety

June 18, 2012

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## 1) Purpose and Scope

The purpose of the Confined Space Entry Program is to protect San José State University employees from the potential hazards associated in entering a confined space. By implementing a Confined Space Entry Program, managers and employees will be able to recognize, evaluate, and control confined space hazards and save lives.

## 2) Standards, Regulations and References

- a) California Code of Regulations,  
Title 8, Article 108, Section 5156 through 5158. Confined Spaces.<sup>1</sup>
- b) California Code of Regulations,  
Title 8, Section 3202. The Injury and Illness Prevention Program.<sup>2</sup>

## 2) Roles and Responsibilities

### a) The University

The University is committed to and has a duty to provide a safe and healthful work environment for all employees from the occupational exposure to the hazards of confined space entry.

### b) Environmental Health and Safety

Environmental Health and Safety will ...

- i) Establish, implement and maintain the Confined Space Entry Program which is designed to eliminate or minimize employee exposure to the hazards of confined space entry.
- ii) Perform an employee exposure determination and document the findings.
- iii) Develop and implement campus-wide training requirements and materials. Employee information and training are provided at the time of initial assignment and annually thereafter.
- iv) Maintain a record of training given to employees for 3 years.
- v) Audit and review the Confined Space Entry Program annually.

### c) Department Management

Each affected Department will ...

- i) Collaborate with Environmental Health and Safety in the employee exposure determination process.
- ii) Provide the time and resources to effectively implement the Confined Space Entry Program for employees determined to be at risk of exposure to the hazards of confined spaces entry.
- iii) Enable employees who are at risk of exposure to receive hazard awareness training.
- iv) Develop and enforce work practices and methods designed to control or eliminate the risk of exposure to the hazards of confined space entry.

<sup>1</sup> §5157. Permit-Required Confined Spaces.

<sup>2</sup> §3203. Injury and Illness Prevention Program.

- v) Provide the necessary work implements, such as tools, gloves, personal protective equipment and air measurement instruments to assess oxygen deficiency and the presence of toxic gases, to employees.

**d) Employees**

Every employee who is at risk of exposure to the hazards of confined space entry will ...

- i) Receive hazard awareness training on an annual basis.
- ii) Be provided with the necessary work implements, such as tools, gloves, personal protective equipment and air measurement instruments to assess oxygen deficiency and the presence of toxic gases, for employees to perform their job safely.
- iii) Follow the prescribed work practices and methods designed to control or eliminate the risk of exposure to the hazards of confined space entry.
- iv) Report incidents to the supervisor immediately.

**e) The City of San Jose Fire Department**

- i) The City of San Jose Fire Department will perform rescue service if necessary to rescue employees from permit spaces.
- ii) The Fire Department will train onsite periodically to familiarize themselves with the type and nature of confined spaces on campus.
- iii) University Police Department should be contacted first to call the Fire Department and escort them to the site.

**3) Program Audit**

Environmental Health and Safety will perform a program audit annually and make improvements to the Confined Space Entry Program as conditions change.

**4) Document History and Control**

The San José State University Confined Space Entry Program described herein supersedes all prior program documents.

<i>Rev #</i>	<i>Document Revision History</i>	<i>Author</i>	<i>Reviewer</i>	<i>Date</i>
00	Revision No Change Initial Document	David Krack Director Environmental Health and Safety	Adam Bayer Director Utilities Maintenance & Operations  Kym Bersuch Safety Steward SETC Union	June 18, 2012
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## The Confined Space Entry Program

The university is committed to and has a duty to provide a safe and healthful work environment for employees from the occupational exposure to the hazards of confined space entry.

**1) The Confined Space Entry Program is designed to eliminate or minimize occupational exposure to the hazards of confined space entry. The Program includes the following key elements:**

- a) Determination of Employee Exposure
- b) Methods of Implementation and Control
- c) Rescue Procedures
- d) Employee Training
- e) Recordkeeping
- f) Document History and Control

**2) Definitions<sup>3</sup>**

- a) **Attendant** means an individual stationed outside one or more permit spaces who monitors the authorized entrants and who performs attendant's duties assigned in the Confined Space Program.
- b) **Authorized Entrant** means an employee who is authorized by the university to enter a permit space.
- c) **Confined Space** means a space that:
  - i) Is large enough and so configured that an employee can bodily enter and perform assigned work; and
  - ii) Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry.); and
  - iii) Is not designed for continuous employee occupancy.
- d) **Engulfment** means the surrounding and effective capture of a person by a liquid or finely divided (flowable) solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, or crushing.
- e) **Entry** means the action by which a person passes through an opening into a permit-required confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.
- f) **Entry Permit (permit)** means the written or printed document that is provided by the university to allow and control entry into a permit space.
- g) **Entry Supervisor** means the person (such as the manager, supervisor, or crew leader) responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required. An entry supervisor also may serve as an attendant or as an authorized

<sup>3</sup> §5157. Permit-Required Confined Spaces.

entrant; as long as that person is trained and equipped for each role he or she fills. The duties of entry supervisor may be passed from one individual to another during the course of an entry operation.

- h) **Hazardous Atmosphere** means an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a permit space), injury, or acute illness from one or more of the following causes:
  - i) Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL);
  - ii) Airborne combustible dust at a concentration that meets or exceeds its LFL;  
Note: This concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet (1.52 M) or less.
  - iii) Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;
  - iv) Atmospheric concentration of any substance for which a dose is published as a permissible exposure limit for airborne contaminants and which could result in employee exposure in excess of its dose or permissible exposure limit.
  - v) Any other atmospheric condition that is immediately dangerous to life or health.
- i) **Immediately Dangerous to Life or Health (IDLH)** means any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would interfere with an individual's ability to escape unaided from a permit space.
- j) **Non-permit Confined Space** means 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.
- k) **Oxygen Deficient Atmosphere** means an atmosphere containing less than 19.5 percent oxygen by volume.
- l) **Oxygen Enriched Atmosphere** means an atmosphere containing more than 23.5 percent oxygen by volume.
- m) **Permit-Required Confined Space (permit space)** means a confined space that has one or more of the following characteristics:
  - i) Contains or has a potential to contain a hazardous atmosphere;
  - ii) Contains a material that has the potential for engulfing an entrant;
  - iii) Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or
  - iv) Contains any other recognized serious safety or health hazard.
- n) **Rescue Service** means the personnel designated to rescue employees from permit spaces.
- o) **Testing** means the process by which the hazards that may confront entrants of a permit space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space. If electronic or thermal equipment is used to perform such tests, and the possibility exists of an explosive substance or a hazardous atmosphere due to flammable gases

and vapors, then the testing equipment must be approved for use in such explosive or flammable conditions.

**3) Determination of Employee Exposure**

An exposure determination was made of the university staff positions by Environmental Health and Safety. It was determined that the following employees may have an occupational exposure to the hazards of confined space entry.

#	<i>Department Building Location Responsible Administrator</i>	<i>Job Title of Employees at Risk of Exposure</i>	<i>Nature of Exposure Risk</i>	<i>Approximate Number of Employees at Risk</i>
1	Facilities Development and Operations Department	Utilities Maintenance & Operations Central Plant Carpenter Shop Control Shop Electrical HVAC Shop Plumbing Shop	Performing maintenance and repairs on systems or equipment located in underground tunnels, tanks or vaults.	50
2	University Police Department	Police Officers	Responding to incidents	20
3	Student Housing Services	Maintenance Plumbing	Performing maintenance and repairs on systems or equipment located in underground tunnels, tanks or vaults.	20

**4) Methods of Implementation and Control**

**a) Permit Required Confined Space Entry.**

- i) Initial entry into any confined space is assumed to be a “Permit Required” space until evaluated and reclassified as a “Non-Permit Required” confined space.

The “Confined Space Entry Determination Form” must be used to make the initial determination whether the space is “Permit Required” or a “Non-Permit Required”.

Go to Appendix A for the Confined Space Entry Determination Form.

- ii) Classification of “Permit Required Confined Space” to “Non-Permit Required”.<sup>4</sup>

A space initially classified as a permit-required confined space may be reclassified as a non-permit confined space under the following procedures:

- (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, the permit space may be reclassified as a non-permit confined space for as long as the non-atmospheric hazards remain eliminated.

<sup>4</sup> §5157. Permit-Required Confined Spaces, Appendix C - Examples of Permit-required Confined Space Programs.

- (2) If testing and inspection during that pre-entry inspection demonstrate that the hazards within the permit space have been eliminated, the permit space may be reclassified as a non-permit confined space for as long as the hazards remain eliminated.
  - (3) If testing and inspection during that pre-entry inspection demonstrate that the hazards within the space cannot be eliminated, an entry permit must be completed.
- iii) The “Permit Required Confined Space Entry Permit Form” must be completed by anyone planning to enter a Permit Required Confined Space.

The permit contains the required information about the hazards as well as equipment, personnel, and entry procedures. Go to Appendix A for the Permit Required Confined Space Entry Permit Form and follow the basic entry procedure below:

- (1) Notify Environmental Health and Safety Department (EH&S) prior to entry.
- (2) Ensure that, as a minimum, three employees are assigned to a Permit Required Confined Space Entry and that they have received training in each of their roles as an Entrant, Attendant and the Supervisor.
- (3) Ensure that all of the entry requirements are performed in accordance with the “Permit Required Confined Space Entry Permit Form” e.g. air testing and the removal of hazards.
- (4) Sign the permit when the entry is completed.
- (5) Return the signed permit and associated documentation to EH&S Department for record keeping.

## **b) Pre-entry Conditions for a Non-Permit Required Confined Space**

- i) Confined spaces may be entered without the need for a written permit provided that the space can be maintained in a safe condition for entry by mechanical ventilation alone.
  - (1) All spaces will be considered permit-required confined spaces until the pre-entry procedures demonstrate otherwise.
  - (2) Any employee required or permitted to pre-check or enter a confined space will have successfully completed training.
  - (3) A written copy of operating and rescue procedures will be at the work site for the duration of the job.
- ii) The Confined Space Entry Determination Form must be completed by the lead employee before entry into a confined space.
  - (1) This check list will be kept at the job site for duration of the job.
  - (2) If circumstances dictate an interruption in the work, the permit space must be re-evaluated and a new check list must be completed.
- iii) The following conditions must be met before entry.
  - (1) Controls of atmospheric and engulfment hazards.
  - (2) Pumps and Lines. All pumps and lines which may reasonably cause contaminants to flow into the space will be disconnected, blinded and locked out, or effectively isolated by other means to prevent development of dangerous air contamination or engulfment.



- (3) Hazardous Equipment. Hazardous equipment that may start unexpectedly will be locked out.
  - (4) Surveillance. The surrounding area will be surveyed to avoid hazards such as drifting vapors from the tanks, piping, or sewers.
  - (5) Atmospheric Testing.
    - (a) The atmosphere within the space will be tested to determine whether dangerous air contamination and/or oxygen deficiency exists.
    - (b) Testing will be performed by the lead employee who has successfully completed the gas detector training for the monitors used.
      - (i) The minimum parameters monitored are oxygen deficiency, LFL, and hydrogen sulfide concentration.
      - (ii) Testing stratified atmospheres. When monitoring for entries involving a descent into atmospheres that may be stratified, the atmospheric envelope should be tested a distance of approximately 4 feet (1.22 m) in the direction of travel and to each side.
    - (c) Order of testing.
      - (i) A test for oxygen is performed first because most combustible gas meters are oxygen dependent and will not provide reliable readings in an oxygen deficient atmosphere.
      - (ii) Combustible gases are tested for next because the threat of fire or explosion is both more immediate and more life threatening, in most cases, than exposure to toxic gases and vapors.
      - (iii) If tests for toxic gases and vapors are necessary, they are performed last.
  - iv) A written record of the pre-entry test results will be made and kept at the work site for the duration of the job.
  - v) The supervisor will certify in writing, based upon the results of the pre-entry testing, that all hazards have been eliminated. Affected employees will be able to review the testing results.
  - vi) The most hazardous conditions will govern when work is being performed in two adjoining, connecting spaces.
- c) Authorized Entry for a Non-permit Required Confined Space**
- i) If there are no atmospheric hazards present and if the pre-entry tests show there is no dangerous air contamination and/or oxygen deficiency within the space and there is no reason to believe that any is likely to develop, entry into and work within may proceed.
  - ii) Continuous testing of the atmosphere in the immediate vicinity of the workers within the space will be accomplished.
  - iii) The workers will immediately leave the permit space when any of the gas-monitor alarm set points are reached.

- iv) Workers will not return to the area until a supervisor who has completed the gas detector training has used a direct reading gas detector to evaluate the situation and has determined that it is safe to enter.
- v) Rescue. Arrangements for rescue services are not required if hazards are eliminated or controlled.
- vi) Employees will not work alone.

## 5) Rescue Procedures

### a) Self-rescue is the preferred plan.

Whenever authorized entrants recognize their own symptoms of exposure to a dangerous atmosphere, or when a prohibited condition is detected, entrants are still able to escape from the space unaided and as quickly as possible.

### b) Non-entry rescue is the next-best approach when self-rescue is not possible.

Equipment and other rescue aids are deployed to assist in removing endangered entrants. Rescue equipment may include:

- i) Full body harness with retrieval line attached.
- ii) Wristlets.
- iii) Hand-cranked mechanical winch and tripod (required when entrant is five feet or more below the entrance).
- iv) Ladder.
- v) Explosion-proof lighting.
- vi) SCBA / Supplied Air Respirator.
- vii) Stretcher.
- viii) Approved head protection.

### c) Entry Rescue

#### i) Entry Rescue.

Entry rescue involves rescuers entering the space to retrieve the entrant and/or provide the victim with emergency assistance such as CPR, first aid, and air via SCBA or a supplied air respirator (SAR), if needed.

- (1) An entry rescue plan needs to be developed ahead of time in the event of an emergency for which the non-entry rescue plan is not appropriate.
- (2) Rescue practices in simulated or actual spaces should be performed at least once every 12 months.

#### ii) On-site Entry Rescue

- (1) At least one on-site employee will be trained in first aid and CPR.
- (2) Each member of the rescue team will be trained to:
  - (a) Properly use and maintain PPE and rescue equipment.

- (b) Act as a rescuer in annual simulated emergencies.
- (c) Assume individual roles in an emergency.

### **iii) Outside Emergency Entry Rescue Service**

- (1) The Entry Supervisor will summons emergency services through the University Police Department (UPD) Incident Commander.
- (2) The UPD Incident Commander will contact the City of San Jose Fire Department to respond and will escort them to the rescue scene.
- (3) The following information will be provided to the Fire Department.
  - (a) Copies of the Confined Space Entry Permit Forms.
  - (b) Information about the operations and personnel involved in the incident.
  - (c) Applicable MSDS, and
  - (d) Any other information beneficial for the safe and effective rescue.

### **iv) Rescues can be performed by another employee.**

- (1) Qualifications include knowledge of and experience working with hazards associated with rescue and confined space entry operations.
- (2) Rescue training must include:
  - (a) Recognition of Hazards.
  - (b) Control of Hazards.
  - (c) Atmospheric Monitoring.
  - (d) Personal Protective Equipment (PPE).
  - (e) Rescue Equipment.
  - (f) Annual Practice of Permit Space Rescues.
  - (g) Proficiency in First Aid and CPR.
  - (h) Documentation of Training. Employee Training

## **6) Confined Space Entry by Contractors**

The project manager will inform the contractor of the permit spaces where the work is to be performed.

- a) Apprise the contractor of the hazards present in the space.
- b) Apprise the contractor of precautions or procedures that have been implemented
- c) Coordinate entry operations with the contractor.
- d) Debrief the contractor at the conclusion of the entry.
- e) Return completed permit forms to the Environmental Health and Safety office.

## 7) Employee Training

Training is provided to employees potentially exposed to the hazards of confined space entry in order for them to acquire the understanding, knowledge, and skills necessary for the safe performance of the duties.

### a) Training is provided to each affected employee:

- i) Before the employee is first assigned duties;
- ii) Before there is a change in assigned duties;
- iii) Whenever there is a change in permit space operations that presents a hazard about which an employee has not previously been trained;
- iv) Whenever the employer has reason to believe either that there are deviations from the permit space entry procedures or that there are inadequacies in the employee's knowledge or use of these procedures.
- v) Annually.

### b) Employee Training Content

Employees are trained in the

- i) Confined space hazard recognition, evaluation and control.
- ii) Determination and classification of a non-permit confined space and a permit required confined space.
- iii) Confined space entry procedures.
- iv) Roles and responsibilities of the attendant, entrant and entrant supervisor.
- v) Atmospheric testing and instrumentation.
- vi) Completion of a confined space determination and entry permit form.
- vii) Practical demonstration of confined space entry.
- viii) Rescue procedures.
- ix) Recordkeeping.

## 8) Recordkeeping

### a) Training Records

- i) Records are completed for each employee upon completion of training. These documents will be kept for at least three years at San José State University, Environmental Health and Safety, Industrial Studies, Room 134 B.
- ii) The training records include:
  - (1) The dates of the training sessions.
  - (2) The contents or a summary of the training sessions.
  - (3) The names and qualifications of persons conducting the training.
  - (4) The names and job titles of all persons attending the training sessions.

- iii) Employee training records are provided upon request to the employee or the employee's authorized representative within 15 working days. Such requests should be addressed to San José State University, Environmental Health and Safety.

**b) Retention of Canceled Entry Permit**

Canceled entry permits will be retained for at least 1 year by Environmental Health and Safety to facilitate the review of the permit space program. Any problems encountered during an entry operation will be noted on the pertinent permit so that appropriate revisions to the permit space program can be made.



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**Appendix A**

**SAN JOSÉ STATE UNIVERSITY**

**Confined Space Entry Determination Form**

**and the**

**Permit Required Confined Space Entry Permit Form**



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## **READ FIRST**

### **Confined Space Entry Procedure**

- 1. The purpose of a Confined Space Entry Procedure is to save lives by controlling the inherent hazards of a confined space prior to entry.**
  - a. If possible, avoid entering a confined space. Every consideration should be given to completing the task from the outside.
  - b. An entry is considered to have occurred when any part of a person's body crosses the plane of an opening into the space.
  
- 2. The Confined Space Entry Procedure at San Jose' State University is managed by the Environmental Health and Safety within Facilities Development and Operations Department.**
  - a. Employees who enter confined spaces must be trained in confined space entry, respiratory protection and Emergency First Aid and CPR.
  - b. Employees who enter confined spaces must first evaluate the space to determine if the space is a permit required confined space. The attached Confined Space Determination Form is designed to assist employees in determining whether the work environment is considered a confined space and a permit required confined space.
  - c. This Confined Space Entry Procedure is available from Environmental Health and Safety. Forms are returned to Environmental Health and Safety once the determination is completed and approval is needed to issue a confined space entry permit.
  
- 3. A Permit-Required Confined Space fits the definition of a confined space and has one or more of the following characteristics:**
  - a. Contains or has a potential to contain a hazardous atmosphere (presence of toxic chemicals, lack of oxygen).
  - b. Contains a material that has a potential for engulfing the entrant (e.g., liquid, soil).
  - c. Contains inwardly converging walls or a floor that slopes downward and tapers to a smaller cross-section where an entrant could be trapped or asphyxiated.
  - d. Contains any other recognized serious safety or health hazard (e.g., unsafe temperature, electrical shock, corrosive chemicals).
  
- 4. A Non-permit Confined Space fits the definition of a confined space, but does not contain or have the potential to contain any atmospheric hazard capable of causing death or serious physical harm.**
  
- 5. A hazardous atmosphere is any atmosphere that may incapacitate, injure, or impair an employee's self-rescue or lead to acute illness or death to workers and rescuers who enter confined spaces. The following are examples of hazardous atmospheres:**
  - a. Flammable or explosive gas, vapor, or mist in a concentration greater than 10 percent of its lower flammable limit (LFL) or lower explosive limit (LEL).
  - b. Combustible dust suspended in air, which obscures vision at a distance of five feet or less.
  - c. Atmospheric oxygen concentration levels below 19.5% (oxygen deficiency) or above 23.5% (oxygen enrichment) at sea level.
  - d. Atmospheric concentration of any substance with an acutely toxic effect above its PEL, and any other atmospheric condition that is IDLH. **CONTINUE ON NEXT PAGE >>>**

**6. Oxygen deficiency can be caused by:**

- a. Combustion (fire, welding, and operation of internal combustion engines all consume oxygen).
- b. Formation of rust (consumes oxygen).
- c. Decomposition of organic matter (consumes oxygen and produces flammable methane gas, which can also displace oxygen).
- d. Displacement by a heavy gas that has settled in a low-lying space or by another vapor (an inert gas such as argon, carbon dioxide, or nitrogen) used to purge the space.

**7. Atmospheric Testing Protocol Using a Multi-gas Monitoring Device.**

- a. Oxygen is tested first because most combustible gas and toxic atmosphere meters are oxygen-dependent and will not provide reliable readings when used in oxygen-deficient atmospheres. In addition, both oxygen-deficient and oxygen – enriched atmospheres are extremely hazardous to workers' health and safety.
- b. Combustible gases and vapors are tested next because the threat of fire and explosion is both more immediate and more life-threatening, in most cases, than exposure to toxic gases and vapors.
- c. Toxic atmospheres are tested last.

**8. Respiratory Protection Requirements.**

- a. An emergency exists and entry cannot be delayed. Assume that an IDLH atmosphere exists.
- b. There is an inert atmosphere or testing shows that an IDLH exists and additional ventilation cannot reduce concentrations to safe levels.
- c. Current testing indicates atmosphere to be safe, but unsafe conditions could reasonably be expected to develop at any time.

**9. All authorized entrants and rescuers entering Permit Requires Confined Spaces are required to use full body harnesses and retrieval lines, unless it is determined that the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue operation.**

**10. Rescue.**

- a. Self-rescue is the preferred plan. The self- rescue plan provides entrants with the best chance of escaping a permit space when hazards are present. Whenever authorized entrants recognize their own symptoms of exposure to a dangerous atmosphere, or when a prohibited condition is detected, entrants are still able to escape from the space unaided and as quickly as possible.
- b. Non-entry rescue is the next-best approach when self-rescue is not possible because non-entry rescue can be started right away and prevents additional personnel from being exposed to unidentified and/or uncontrolled confined space hazards.
- c. Entry rescue involves rescuers entering the space to retrieve the entrant and/or provide the victim with emergency assistance such as CPR, first aid, and air via a supplied air respirator (SAR), if needed.

**Proceed to the Confined Space Determination Form on the next page. >>>**

<b>Confined Space Determination Form</b>	
<b>Confined Space Jobsite Description</b>	
<b>Permit Requestor &gt;</b>	<b>Work Order Number: &gt;</b>
<b>Permit Request Date &gt;</b>	<b>Work Plan:</b>
<b>Job Site Location &gt;</b>	
<b>Manhole ID / Description &gt;</b>	

<b>Confined Space Determination</b>	
<p><b>1. Is this space a Confined Space in accordance with the criteria listed here?</b>            ___(1) Is large enough and so configured that an employee can bodily enter and perform assigned work; <b><i>and</i></b>            ___(2) Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry.); <b><i>and</i></b>            ___(3) Is not designed for continuous employee occupancy.</p>	<p><b>If NO&gt;&gt;NOT A CONFINED SPACE</b></p> <p>Enter and proceed with the regular work assignment.</p> <p>Supervisor Signature&gt;_____</p>
<p><b>2. If YES ...</b>  <b>Survey the surrounding area for known or potential hazards. Are hazards present?</b>            ___Atmospheric, ___engulfment, ___entrapment,            ___internal convergent configurations,            ___List any other safety hazards _____            _____  <b>Atmospheric Test Results:</b>            Oxygen % _____ H2S ppm _____ LEL % _____ CO ppm _____</p>	<p><b>If NO&gt;&gt;NON-PERMIT REQUIRED CONFINED SPACE</b></p> <p>Enter and proceed with the regular work assignment.</p> <p>Supervisor Signature&gt;_____</p>
<p><b>3. If YES ...</b>  <b>Can the hazards be eliminated?</b>            List how the hazards are eliminated: _____</p>	<p><b>If YES&gt;&gt;NON-PERMIT REQUIRED CONFINED SPACE</b></p> <p>Eliminate the hazards and Reclassify to a Non-Permit Required Confined Space. Enter and proceed with the regular work assignment.</p> <p>Supervisor Signature&gt;_____</p>
<p><b>4. If NO ...</b>  <b>Can the space be maintained in a condition safe to enter by continuous forced air ventilation only?</b></p>	<p><b>If YES&gt;&gt;NON-PERMIT REQUIRED CONFINED SPACE. VENTILATE SPACE</b> and Reclassify to Non-Permit Required Confined Space. Enter and proceed with the regular work assignment.</p> <p>Supervisor Signature&gt;_____</p>
<p><b>5. If NO ...</b>  <b>Submit a Permit Required Confined Space Entry Permit Form on the next page for approval to proceed....</b></p>	<p><b>REQUEST ENTRY INTO A PERMIT REQUIRED CONFINED SPACE. SUBMITTED BY:</b></p> <p>Supervisor Signature&gt;_____</p>

**Authorized Entry for a Non-permit Required Confined Space**

- 1) If there are no atmospheric hazards present and if the pre-entry tests show there is no dangerous air contamination and/or oxygen deficiency within the space and there is no reason to believe that any is likely to develop, entry into and work within may proceed.
- 2) Continuous testing of the atmosphere in the immediate vicinity of the workers within the space will be accomplished.
- 3) The workers will immediately leave the permit space when any of the gas-monitor alarm set points are reached.
- 4) Workers will not return to the area until a supervisor who has completed the gas detector training has used a direct reading gas detector to evaluate the situation and has determined that it is safe to enter.
- 5) Rescue. Arrangements for rescue services are not required if hazards are eliminated or controlled.
- 6) Employees will not work alone.
- 7) The minimum Personal Protective Equipment (PPE) for entry includes eye, head, hand, and foot protection and a full body harness.

**Permit Required Confined Space Entry Permit Form**

<b>1. Work Assignments</b>	<b>Responsible Person</b>	<b>Special Instructions</b>
<i>Trades Manager</i> >	1.	
<i>Standby Attendant</i> >	2.	
<i>Entrant</i> >	3.	
<i>Hoist Operator</i> >		
<i>Radio</i> >		
<i>Communication Runner</i> >		
<i>Gas Testing and Recordkeeping</i> >		
<i>CPR – 1<sup>st</sup> Aid Certified</i> >		

<b>2. Employee Training and Pre-Entry Briefing</b>	<b>Special Instructions</b>
1. Safe Entry & Rescue Training Conducted? <span style="float: right;">Yes / No</span>	
2. Mandatory Pre-Entry Briefing Conducted? <span style="float: right;">Yes / No</span>	
3. Does the job require special training? <span style="float: right;">Yes / No</span>	

<b>3. Emergency Contact / Equipment Information</b>	<b>Special Instructions</b>
<i>Nearest Phone Land Line</i> >	
<i>Radio Channel</i> >	
<i>University Police Dept Phone</i> >	
<i>University Police Dept Radio Channel</i> >	
<i>First Aid Kit Location</i> >	

<b>4. Rescue Plan</b>	<b>Entry Rescue Team Members</b>	<b>Rescue / Hoist Equipment at Jobsite</b>
<u>  </u> 1. Self Rescue, <b>or</b>	1	<u>  </u> Hoist & Harness & Rigging
<u>  </u> 2. Non entry Rescue – Hoist, <b>or</b>	2	<u>  </u> Supplied Air Respirator
<u>  </u> 3. Entry Rescue Team, <b>or</b>	3	<u>  </u> SCBA
<u>  </u> 4. Entry Rescue – 911 Fire Rescue	4	<u>  </u> Stretcher

### 5. Safety Hazard Elimination Checklist

	Yes	No	N/A
1. All lines leading to and from the confined space have been blinded or disconnected.			
2. Electrical service is disconnected or locked out.			
3. All grounding and bonding cables in place.			
4. All lighting, fitting, and extension cords are approved explosive proof equipment.			
5. Ground Fault Circuit Interrupter devices checked and functioning.			
6. All ignition sources are isolated and eliminated.			
7. Supplied Air Respirator Systems are checked and in proper operation.			
8. Safety Harnesses and life lines checked and in proper operation.			
9. Required PPE clothing, gloves, and boots, are provided and used.			
10. Employees have been trained in the use, care, and limitations of their respiratory protection equipment.			
11. Rescue / standby employees are trained in emergency procedures and resuscitation.			
12. Rescue tripod and rigging provided and inspected for use.			
13. Emergency systems such as respiratory protection, fire extinguishers, communications, are tested and ready for use.			
14. Barricade erected around the manhole and area cordoned to control access.			
15. Ventilation Equipment provided and in place and in use.			

### 6. Personal Protective Equipment Plan (Check all that apply)

<b>Eye Protection</b>	<b>Respiratory Protection</b>
<input type="checkbox"/> Chemical Goggles	<input type="checkbox"/> Air Line Respirator
<input type="checkbox"/> Face Shield & Chemical Goggles	<input type="checkbox"/> Air Line w/Egress Bottle
<input type="checkbox"/> Safety Glasses	<input type="checkbox"/> Cartridge Respirator
<b>Extremities</b>	<input type="checkbox"/> Cartridge Type: >>
<input type="checkbox"/> Hard Hat	
<input type="checkbox"/> Gloves: Type >>	<b>Other PPE</b>
<input type="checkbox"/> Boots	<input type="checkbox"/> Hearing Protection
<input type="checkbox"/> Hoods	<input type="checkbox"/> Harness and Lifeline (top entry)
<b>Body Protection</b>	<input type="checkbox"/> Chest Harness and Lifeline (side entry)
<input type="checkbox"/> Coveralls, Cloth	<input type="checkbox"/> Tripod Hoist and Equipment
<input type="checkbox"/> Tyvek, White	<input type="checkbox"/>
<input type="checkbox"/> Tyvek, Yellow (Coated)	<input type="checkbox"/>
<input type="checkbox"/> Waterproof Suit	<input type="checkbox"/>

**7. Oxygen Deficiency – Toxic Gas Monitoring Equipment**

Portable Gas Detector ID #	Make	Model	Gas Sensors	Calibration Date
1.			<input type="checkbox"/> Oxygen <input type="checkbox"/> H2S <input type="checkbox"/> LEL <input type="checkbox"/> CO	
2.			<input type="checkbox"/> Oxygen <input type="checkbox"/> H2S <input type="checkbox"/> LEL <input type="checkbox"/> CO	

**8. Atmospheric Testing: Pre-Entry & 15 min Periodic Testing**

Date	Time	Oxygen %	H2S (ppm)	LEL %	CO (ppm)	Ventilation Plan
						<p><b><u>Ventilation Method</u></b></p> <input type="checkbox"/> Natural Ventilation <input type="checkbox"/> Forced Exhaust <input type="checkbox"/> Forced Supply <p><b><u>Time Duration Needed</u></b></p> <input type="checkbox"/> Ventilate Continuously <input type="checkbox"/> Ventilate Until Monitoring is Satisfactory <input type="checkbox"/> Other:

**9. Entrant Log**

[Entrant's Name]

Time In

Time Out

1		
2		
3		
4		
5		
6		

**10. Permit Approved**

Supervisor:	Date
EHS Director:	Date

**11. Work Completed**

Supervisor:	Date
EHS Director	Date



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## Confined Space Entry Program

Environmental Health and Safety

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**Appendix B**

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**Atmospheric Testing Instrumentation**

**QRAE II™**  
**4 Gas Meter**

**Oxygen Deficiency**

**Flammability**

**Carbon Dioxide**

**Hydrogen Sulfide**



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Environmental Health and Safety

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