

# **EXHIBIT A**

## **CONFINED SPACE**

## Article 108. Confined Spaces

### § 5156. Scope and Definitions.

(a) **Scope.** This Article prescribes minimum standards for preventing employee exposure to dangerous air contamination and/or oxygen deficiency, as defined by Section 5156(b), within such spaces as silos, tanks, vats, vessels, boilers, compartments, ducts, sewers, pipelines, vaults, bins, tubs, and pits.

**NOTE:** This Article does not apply to underwater operations conducted in diving bells or other underwater devices or to supervised hyperbaric facilities.

(b) **Definitions.**

(1) **Confined Space.** A space defined by the concurrent existence of the following conditions:

(A) Existing ventilation is insufficient to remove dangerous air contamination and/or oxygen deficiency which may exist or develop.

(B) Ready access or egress for the removal of a suddenly disabled employee is difficult due to the location and/or size of the opening(s).

(2) **Dangerous Air Contamination.** An atmosphere presenting a threat of causing death, injury, acute illness, or disablement due to the presence of flammable and/or explosive, toxic, or otherwise injurious or incapacitating substances.

(A) **Dangerous air contamination due to the flammability of a gas or vapor** is defined as an atmosphere containing the gas or vapor at a concentration greater than 20 percent of its lower explosive (lower flammable) limit.

(B) **Dangerous air contamination due to a combustible particulate** is defined as a concentration greater than 20 percent of the minimum explosive concentration of the particulate.

(C) **Dangerous air contamination due to the toxicity of a substance** is defined as the atmospheric concentration immediately hazardous to life or health.

**NOTE:** This definition of dangerous air contamination due to the toxicity of a substance does not preclude the requirement to control harmful exposures, under the provisions of Article 107, to toxic substances at concentrations less than those immediately hazardous to life or health.

(3) **Oxygen Deficiency.** An atmosphere containing oxygen at a concentration of less than 19.5 percent by volume.

**NOTE:** Authority cited: Section 142.3, Labor Code.

#### HISTORY

1. New Article 108 (Sections 5156-5159) filed 9-14-78; effective thirtieth day thereafter (Register 78, No. 37).

### § 5157. Operating Procedures and Employee Training.

The employer shall implement the provisions of this section before any employee is permitted to enter a confined space.

(a) **Operating Procedures.**

(1) Written, understandable operating and rescue procedures shall be developed and shall be provided to affected employees.

(2) Operating procedures shall conform to the applicable requirements of this Article and shall include provision for the surveillance of the surrounding area to avoid hazards such as drifting vapors from tanks, piping and sewers.

(b) **Employee Training.** Employees, including standby persons required by Section 5159(a)(4), shall be trained in the operating and rescue procedures, including instructions as to the hazards they may encounter.

**NOTE:** Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

#### HISTORY

1. Amendment of subsection (a)(2) filed 9-5-79; effective thirtieth day thereafter (Register 79, No. 36).

### § 5158. Pre-Entry.

The applicable provisions of this section shall be implemented before entry into a confined space.

(a) Lines which may convey flammable, injurious, or incapacitating substances into the space shall be disconnected, blinded, or blocked off by other positive means to prevent the development of dangerous air contamination and/or oxygen deficiency within the space. The disconnection or blind shall be so located or done in such a manner that inadvertent reconnection of the line or removal of the blind are effectively prevented.

**EXCEPTION:** This subsection does not apply to public utility gas distribution systems.

**NOTE:** This subsection does not require blocking of all laterals to sewers or storm drains. Where experience or knowledge of industrial use indicates materials resulting in dangerous air contamination may be dumped into an occupied sewer, all such laterals shall be blocked.

(b) The space shall be emptied, flushed, or otherwise purged of flammable, injurious or incapacitating substances to the extent feasible.

(c) The air shall be tested with an appropriate device or method to determine whether dangerous air contamination and/or an oxygen deficiency exists and a written record of such testing results shall be made and kept at the work site for the duration of the work. Affected employees and/or their representative shall be afforded an opportunity to review and record the testing results.

(d) Where interconnected spaces are blinded off as a unit, each space shall be tested and the results recorded, in accordance with Section 5158(c), and the most hazardous condition so found shall govern procedures to be followed.

(e) If dangerous air contamination and/or oxygen deficiency does not exist within the space, as demonstrated by tests performed in accordance with Section 5158(c), entry into and work within the space may proceed subject to the following provisions:

(1) **Testing,** in accordance with Section 5158(c), shall be conducted with sufficient frequency to ensure that the development of dangerous air contamination and/or oxygen deficiency does not occur during the performance of any operation.

(2) If the development of dangerous air contamination and/or an oxygen deficiency is imminent, the requirements prescribed by Section 5159 shall also apply.

(f) Where the existence of dangerous air contamination and/or oxygen deficiency is demonstrated by tests performed in accordance with Section 5158(c), existing ventilation shall be augmented by appropriate means.

(g) When additional ventilation provided in accordance with Section 5158(f) has removed dangerous air contamination and/or oxygen deficiency as demonstrated by additional testing conducted (and recorded) in accordance with Section 5158(c), entry into and work within the space may proceed subject to the provisions of Section 5158(e)(1) and (2).

(h) No source of ignition shall be introduced until the implementation of appropriate provisions of this section have ensured that dangerous air contamination due to flammable and/or explosive substances does not exist.

(i) Whenever oxygen-consuming equipment such as salamanders, plumbers' torches or furnaces, and the like, are to be used, measures shall be taken to ensure adequate combustion air and exhaust gas venting.

(j) To the extent feasible, provision shall be made to permit ready entry and exit.

(k) Where it is not feasible to provide for ready exit from spaces equipped with automatic fire suppression systems employing harmful design concentrations of toxic or oxygen-displacing gases, or total foam flooding, such systems shall be deactivated. Where it is not practical or safe to deactivate such systems, the provisions of Section 5159 related to the use of respiratory protective equipment shall apply during entry into and work within such spaces.

### § 5159. Confined Space Operations.

(a) **Entry Into and Work Within Confined Spaces.** The requirements of this subsection apply to entry into and work within a confined space: whenever an atmosphere free of dangerous air contamination and/or oxygen deficiency cannot be ensured through the implementation of the applicable provisions of Section 5158, or whenever, due to the existence of an emergency, it is not feasible to ensure the removal of dangerous air contamination and/or an oxygen deficiency through the implementation of the applicable provisions of Section 5158.

(1) Tanks, vessels, or other confined spaces with side and top openings shall be entered from side openings when practicable.

**NOTE:** For the purposes of this Order, side openings are those within 3 1/2 feet of the bottom.

(2) Appropriate, approved respiratory protective equipment, in accordance with Section 5144, shall be provided and worn

(3) An approved safety belt with an attached line shall be used. The free end of the line shall be secured outside the entry opening. The line shall be at least 1/2-inch diameter and 2,000-pounds test.

**EXCEPTION:** Where it can be shown that a safety belt and attached line would further endanger the life of the employee.

(4) At least one employee shall stand by on the outside of the confined space ready to give assistance in case of emergency. At least one additional employee who may have other duties shall be within sight or call of the standby employee(s).

(A) The standby employee shall have appropriate, approved, respiratory protective equipment, including an independent source of breathing air which conforms with Section 5144(c), available for immediate use.

(B) A standby employee (or employees) protected as prescribed by Section 5159(a)(4)(A) may enter the confined space but only in case of emergency and only after alerting at least one additional employee outside of the confined space of the existence of an emergency and of the standby employee's intent to enter the confined space.

(5) When entry must be made through a top opening, the following requirements shall also apply.

(A) The safety belt shall be of the harness type that suspends a person in an upright position.

(B) A hoisting device or other effective means shall be provided for lifting employees out of the space.

(6) Work involving the use of flame, arc, spark, or other source of ignition is prohibited within a confined space (or any adjacent space having common walls, floor, or ceiling with the confined space) which contains, or is likely to develop, dangerous air contamination due to flammable and/or explosive substances.

(7) Whenever gases such as nitrogen are used to provide an inert atmosphere for preventing the ignition of flammable gases or vapors, no flame, arc, spark, or other source of ignition shall be permitted unless the oxygen concentration is maintained at less than 20 percent of the concentration which will support combustion.

(A) Testing of the oxygen content shall be conducted with sufficient frequency to ensure conformance with this paragraph.

(B) A written record of the results of such testing shall be made and kept at the work site for the duration of the work.

(C) Affected employees and/or their representative shall be provided an opportunity to review and record the testing results.

(8) Only approved lighting and electrical equipment, in accordance with the Low-Voltage Electrical Safety Orders, shall be used in confined spaces subject to dangerous air contamination by flammable and/or explosive substances.

(9) Employees working in confined spaces which have last contained substances corrosive to the skin or substances which can be absorbed through the skin shall be provided with, and shall be required to wear, appropriate personal protective clothing or devices in accordance with Article 10.

(b) Precautions for Emergencies Involving Work in Confined Spaces.

(1) At least one person trained in first aid and cardiopulmonary resuscitation (CPR) shall be immediately available whenever the use of respiratory protective equipment is required Section 5159(a). Standards for CPR training shall follow the principles of the American Heart Association of the American Red Cross.

(2) An effective means of communication between employees inside a confined space and a standby employee shall be provided and used whenever the provisions of Section 5159(a) require the use of respiratory protective equipment or whenever employees inside a confined space are out of sight of the standby employee(s). All affected employees shall be trained in the use of such communication system and the system shall be tested before each use to confirm its effective operation.



# CENTRAL CONTRA COSTA SANITARY DISTRICT

## CONFINED SPACE AWARENESS AND ENTRY PROCEDURES

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Effective Date: October 2005

**CENTRAL CONTRA COSTA SANITARY DISTRICT****SAFETY DIRECTIVE 3.0****CONFINED SPACE ENTRY PROCEDURES****3.1 PURPOSE**

The purpose of this directive is to establish the policy, procedures, and minimum requirements for the safety and health of all employees who work in or around confined spaces. Entering and working in confined spaces has been and will continue to be an integral part of planned activity by Central Contra Costa Sanitary District employees. This document has been developed to ensure the safety of personnel required to enter and conduct work in confined spaces. Further, the document identifies what precautions must be in place prior to entry and the actions required throughout the entry. The program contained herein describes reasonable and necessary policies and procedures for any and all facilities, departments, and workers who are associated with confined space entry operations, and assigns duties and responsibility to specific positions.

**3.2 AUTHORITY**

California Code of Regulations, Title 8, Chapter 4, Subchapter 7, General Industry Safety Orders, Group 16, Article 108, Section 5155-5158.

**3.3 SCOPE**

This Program applies to all Central Contra Costa Sanitary District employees, including temporary, contract, seasonal and co-op employees. Contractors, vendors, visitors and their sub-contractors or agents, are also subject to this Directive when visiting or performing work on District property, or District-funded projects.

**3.4 DEFINITIONS**

Acceptable Entry Conditions – conditions that must exist in a permit-required confined space to allow safe entry and work.

Alternate Entry Procedures – the procedures for entry into a permit required confined space that may be authorized provided certain conditions are proven (see section 3.8.4). The Entry Supervisor must make the determination after completing the Pre-entry Checklist by:

- demonstrating that the only hazard posed by the permit space is an actual or potential hazardous atmosphere
- demonstrating that continuous forced air ventilation alone is sufficient to maintain that permit space safe for entry
- documented monitoring and inspection data that supports the demonstrations above

**Atmospheric Monitoring** – testing the atmosphere with a direct reading instrument (gas meter) that sounds an audible alarm and provides a visual readout whenever one of the following conditions exists:

1. Atmospheric oxygen concentration below 19.5% (oxygen deficiency) or above 23.5% (oxygen enrichment).
2. Flammable gas, vapor or mist in excess of 10% of its lower explosive/ flammable limit (LEL/LFL).
3. Hydrogen sulfide at or above its permissible exposure limit (PEL) of 10 ppm.
4. Carbon monoxide at or above its permissible exposure limit (PEL) of 25 ppm.
5. Atmospheric concentration of any substance for which a dose or exposure limit is published in CCR, Title 8, Section 5155 Table AC-1 and which could result in employee exposure in excess of its dose or permissible exposure limit (PEL).

**Attendant** – an individual stationed outside a permit-required confined space who monitors the authorized entrants and performs all attendant duties as assigned by the permit program.

**Authorized Entrant** – an individual who is authorized to enter a permitted space.

**Break the Plane** – whenever an entrant crosses the physical boundary or if any part of their body passes over or through the entrance to a confined space, Cal OSHA will consider for the purpose of their investigation that an entry had occurred. For this reason, where there is any penetration into a confined space, the potential hazards and health risks must be considered. Therefore, any individual, whether they are considered an entrant or not, must make a careful and thoughtful evaluation of the confined space before even extending their hand, arm or other body part into the space.

**Confined Space** - any space that has **all three** of the following characteristics; including but not limited to bins, boilers, centrifuges, furnaces, compartments, ducts, tunnels, manholes, pipelines, pits, sewers, tanks, tubs, vaults, and wet wells.

1. Is large enough and so configured that an employee can enter and perform assigned work; **and**
2. Has limited or restricted means for entry or exit; **and**
3. Is not designed for continuous human occupancy.

A confined space may be classified as either a Non-permit Confined space or a Permit-required Confined space.

**Double Block and Bleed** – means the closure of a line, duct, or pipe by closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves.

**Emergency** – any occurrence (including any failure of hazard control or monitoring equipment) or event internal or external to the permit space that could endanger entrants.

Engulfment – 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.

Entry – the action by which a person passes through an opening into a permit-required confined space. Any entry where the employee is subject to exposure to the hazards of the confined space will require an Entry Permit.

Entry Permit (permit) – the written or printed document allowing and controlling entry into a permit-required confined space.

Entry Supervisor – the person trained and responsible for determining if acceptable entry conditions are present at a permit-required confined space, for assigning the Attendant and Entrants, and be the final authority to authorize the entry. The Entry Supervisor will oversee the confined space entry operations, and will terminate the entry when any condition not authorized by the permit changes that might increase the hazards to the entrants. The duties of the Entry Supervisor may be passed from one individual to another during the course of an entry operation following a thorough turnover briefing.

Hazardous Atmosphere – 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:

- (1) Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL);
- (2) Airborne combustible dust at a concentration that meets or exceeds its LFL (This concentration may be estimated by a condition where your vision is obscured by the dust particles at a distance of 5 feet or less.);
- (3) Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;
- (4) Any other atmospheric condition that is immediately dangerous to life or health.

Hot Work Permit – the written authorization to perform operations (for example, riveting, welding, cutting, burning, and heating) capable of providing a source of ignition.

Immediately Dangerous to Life or Health (IDLH) – any condition that poses an immediate or delayed threat to life, that would cause irreversible adverse health effects, or that would interfere with an individual's ability to escape unaided from a permit space.

Isolation – the process by which a permit space is removed from service and completely protected against the release of energy and material into the space by such means as: Blanking or blinding; misaligning or removing sections of lines, pipes, or ducts; a double block and bleed system; lockout or tagout of all sources of energy; or blocking or disconnecting all mechanical linkages.



Line Breaking – the intentional opening of a pipe, line, or duct that is or has been carrying flammable, corrosive, toxic material, an inert gas, or any fluid at a volume, pressure or temperature capable of causing injury.

Non-permit Confined 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.

Oxygen Deficient Atmosphere – an atmosphere containing less than 19.5 percent oxygen by volume.

Oxygen Enriched Atmosphere – an atmosphere containing more than 23.5 percent oxygen by volume.

Permit-required Confined Space – a confined space that has **one or more** of the following characteristics:

- (1) Contains or has a potential to contain a hazardous atmosphere;
- (2) Contains a material that has the potential for engulfing an entrant;
- (3) 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
- (4) Contains any other recognized serious safety or health hazard.

Prohibited Condition – any condition in a confined space that is not allowed by the permit during the period when entry is authorized. In the case of a Non-Permit confined space entry, any condition that would change the atmosphere or create a hazard to the health or safety of an entrant.

Rescue Person or Service – the personnel designated to rescue employees from a permit-required confined space. The person must be CPR, First Aid and respirator certified.

Retrieval System – the equipment (including a retrieval line, chest or full-body harness, wristlets, if applicable, and a lifting device or anchor) used for non-entry rescue.

### **3.5 GENERAL REQUIREMENTS (POLICY)**

It is the policy of the District to establish and maintain effective plans and procedures designed to protect personnel required to enter and conduct work in confined spaces from injury.

It is the District's policy to only permit employees who have received training in confined space entry procedures and the District's Confined Space Safety Directive to conduct duties that require a confined space entry or to act as support during a confined space entry activity.

Because of the potential of a serious injury or death occurring from a confined space entry, the District will not tolerate any variation or violation of the District's policies or procedures.

Extensive efforts have been made to identify and label all permit-required confined spaces located on District property (Appendix D). This effort is a continual process as existing spaces are newly identified, or as new spaces are created. Any confined space not yet classified, or, with classification in question, shall be considered a permit-required confined space until testing and documentation reclassifies the space to a non-permit space.

A sign stating, "DANGER - CONFINED SPACE – ENTER BY PERMIT ONLY" (or the equivalent), shall be posted at all permit-required confined spaces. In situations where posting is impractical, employees will be trained to recognize those spaces as permit-required confined spaces. In the absence of a sign, the access points shall be covered and bolted or otherwise secured to prevent inadvertent entry into a confined space. If at any time the cover is removed or unsecured, a confined space danger sign must be posted at the entry point.

### **3.6 RESPONSIBILITIES**

Success in all safety and health matters depends upon the cooperation among management, supervisors and all employees, and also between each employee and their fellow workers. Only through such cooperation can a safety program in the best interest of all be established and preserved.

Any reference in this document to communications or contacting the control room are used in a generic tone and are intended to imply the Computer Room or Shift Supervisor for "on the Martinez plant site entries" and the CSO Dispatch Center for any "off site entries."

#### **3.6.1 Managers and Supervisors**

It is the responsibility of Managers and Supervisors to:

- A. Ensure that all employees under their supervision receive training and know the appropriate procedures for identifying and entering a confined space.
- B. Ensure that all employees under their supervision follow the appropriate procedures when entering a permit-required confined space and take the appropriate corrective action when procedures are not followed.
- C. Ensure that all appropriate permits are completed and signed before work begins.
- D. Identify all confined spaces located on District owned and operated facilities and ensure those spaces are posted to warn employees of the entry permit requirements. In situations where posting is impractical, ensure employees are trained to recognize those spaces as permit –required confined spaces.
- E. Stop any confined space activity that appears to be unsafe or not in compliance with the District's Safety Directive. Observe contractors performing work on District property and report to Safety and Risk Management Division any clear violation or concerns about worker safety.
- F. Consult with Safety and Risk Management with questions or concerns about Confined Space policies and procedures.

- G. Provide all equipment necessary to implement the plans and procedures for entering into a confined space.
- H. Audit their Section's compliance with the District's Permit-required Confined Space Entry Directive (if applicable) at least annually (CSE Form 4).

### **3.6.2 Employees**

It is the responsibility of employees to:

- A. Follow all procedures outlined in the District Safety procedure on Confined Space Entry.
- B. Only perform duties and activities associated with entry into a confined space in which they are trained and authorized.
- C. Stop any activity or entry into a space that appears to be unsafe, or not in compliance with the District's safety directive.
- D. Report to supervision, any operation or space with exposures related to confined space entry not formally identified and/or labeled as such. (A Report of Hazardous Condition of or Near-Miss IIPP Form 3 may be used for this purpose).
- E. Attend confined space training and tailgate safety meetings.

### **3.6.3 Safety and Risk Management Division**

It is the responsibility of the Safety and Risk Management Division to:

- A. Coordinate and conduct initial and annual training for all affected employees in confined space entry procedures.
- B. Annually inspect and test the mechanical ventilation systems installed in confined spaces for the purpose of providing a hazard-free atmosphere. Ensure the required protection is maintained by measuring the volume of the space ventilated and the velocity of the airflow and calculate the rate of exchange of air. Record and compare these values with design calculations to determine if the rate is sufficient to ventilate the space.
- C. Assist and provide technical support to supervisors and employees in meeting their responsibilities identified of this Directive.
- D. Assist in the determination of a confined space and verify confined spaces are properly identified during annual safety audits.
- E. Audit the effectiveness and compliance of permit-required confined space entry procedures. This is in addition to the supervisors' auditing responsibilities.
- F. Maintain records of training provided to employees.

**3.6.4 Entry Supervisor**

The entry supervisor must be trained in the specific duties of the position and have the requisite knowledge to conduct a confined space activity. The entry supervisor must be aware of the general hazards that may be encountered during a confined space entry as well as the specific hazard(s) unique to each confined space. The person filling the position does not have to be a District Supervisor, but will be designated as the Entry Supervisor by his or her Section Supervisor.

The primary duty of the Entry Supervisor is to ensure all precautions are taken, all possible hazards are considered, and all safety equipment is in place to reduce to the greatest extent any health or safety risk to personnel performing work in a confined space. A technical knowledge of the work is not required, but a general understanding of the scope of the work that may affect the conditions in the space is necessary.

Before authorizing a confined space entry, the Entry Supervisor shall:

- A. Have full knowledge of the hazards associated with the confined space entry and review the Confined Space Entry procedures and the specific duties of the Entry Supervisor.
- B. Understand the purpose of the entry and the work to be performed. Question or evaluate if any of the work may be pre-staged or completed prior to entering the space.
- C. Complete the Confined Space Pre-entry Checklist. The checklist identifies many of the potential hazards associated with a confined space entry and requires that positive actions have been taken to eliminate or reduce the hazard. Actions include system line-up or configurations, blank flanging, lockout and tag out, and ensuring adequate ventilation. Perform a full assessment of the hazards associated with the entry.
- D. Based on the hazard assessment, determine the number of Attendants required to safely monitor the entry. Verify the Attendant(s) is trained and familiar with his or her required duties. Under rare circumstances, one Attendant may monitor more than one entry point if the spaces are in close proximity and the hazards are extremely minimal.
- E. Verify all entrants are aware of any potential hazards and the measures in place to reduce, limit or mitigate their exposure. Review the rescue plan with each entrant.
- F. Verify the Rescue Person or Rescue Service is on alert and available for immediate response in the event of an emergency. For Confined Space entries involving District personnel, the Rescue Person will be a District Rescue trained and qualified employee.
- G. Verify all required rescue equipment is available on site and ready for use as specified in the Confined Space Pre-entry Checklist (CSE Form 1).
- H. Ensure communications are established between the Control Room and the attendant. A Confined Space Entry – Communication Log (CSE Form 3) is available to assist with communications and serves as an excellent tool to aid in an emergency aid response.
- I. Approve the method of communication to be used between the attendant and all entrants. For small spaces, verbal may be acceptable. If the space allows the entrants

to move beyond the view of the attendant or if the work may cause the entrant(s) hearing to be impaired or compromised, a more definite and unquestionable communication method must be used. In some cases, a tag line may be required.

- J. Coordinates a confined space pre-entry brief. The Entry Supervisor does not need to conduct the brief if someone more qualified is available to discuss the hazards associated with the entry and the work to be performed. At a minimum, the Attendant, and all planned entrants must attend the pre-entry brief. If the rescue person is on-site, they too must attend the brief.
- K. Confirm acceptable entry conditions exist and sign the confined space entry permit authorizing entry.

During a confined space entry, the Entry Supervisor shall:

- A. Prohibit any action or change of condition that would adversely alter or affect the confined space in any way.
- B. Remain available to the Attendant to address any issues, questions or concerns that may develop. The Entry Supervisor is not required to remain at the entry site; however, some situations may warrant the added scrutiny and attentiveness of an on-site supervisor to ensure the safety of the entrants.
- C. The Entry Supervisor may act as the Rescue Person if the training requirements are satisfied. He or she must be CPR / First Aid and respirator certified.
- D. The Entry Supervisor may relieve the Attendant for short periods provided that all duties of the Attendant are continued and attention to the scene safety is not compromised.
- E. If at any time, the health or safety of the entrant(s) is in question or concern, the Entry Supervisor will direct that all entrants immediately be removed from the confined space and stand-by outside the space until the concern can be resolved.
- F. The Entry Supervisor has the duty and the authority to terminate a confined space entry for any cause, but especially if the safety of any person involved with the entry is in jeopardy. The Entry Supervisor will direct all entrants exit the space and cancel the permit pending an investigation.

### **3.6.5 Attendant**

The Permit-Required Confined Space entry Attendant must be trained in the specific duties of the position and have the requisite knowledge to conduct a confined space activity. The Attendant must be aware of the general hazards that may be encountered during a confined space entry as well as the specific hazard(s) unique to the confined space they will be attending. The person filling the position does not require any additional training to fill the position other than that of the Attendant.

The Entry Supervisor will determine the number of attendants required for a Confined space entry after completing the Pre-entry checklist. Several factors should be considered including the number of entrants, the complexity of the job, the configuration of the space, the number of

possible entry points, any communication difficulty or interference with the Entrants, and a full assessment of the hazards associated with the entry.

The primary duty of the Attendant is to ensure the safety and wellbeing of the Entrants from all possible health or safety hazards. A technical knowledge of the work is not required but a general understanding of the scope of the work that may affect the conditions in the space is necessary.

The **pre-entry** duties of the Confined Space Attendant are:

- A. Have knowledge of the hazards associated with the confined space entry and review the Confined Space Entry procedures and the specific duties of the Entry Attendant.
- B. Understand the purpose of the entry and have a general knowledge of the work to be performed.
- C. Set-up and test the air monitoring equipment. Verify the instrument is in calibration and record the requested information on the Confined Space Entry Permit.
- D. Test the instrument with a clean fresh air sample. The instrument should read between 20.8 – 21.0 % oxygen and the other three measurements (CO, H<sub>2</sub>S, LEL) should read zero. If the oxygen reading is outside the acceptable range, perform a zeroing procedure per the manufacturer's operating manual. If the readings cannot be obtained, do not use the meter and tag the meter out of service. Report the out of service instrument to the appropriate technician.
- E. Perform a pre-entry atmosphere profile of the confined space to be entered. Do not enter the space to conduct the profile. Allow two seconds per foot of sample hose before taking the meter reading. Never submerge the sample hose end as liquid may be siphoned into the meter damaging the delicate sensors.
- F. For a vertical access space, lower the sample hose into the space and measure three locations; one towards the bottom of the space, one near the middle and a third measurement towards the top of the space. Record the meters readings on the permit.
- G. For horizontal access spaces, extend the sample hose into the space as far as practical to get an air sample. A pole may be necessary to extend the sample hose far enough into the space to get a representative air sample. Attempt to measure in the vicinity of the work to be performed. Record the meters readings on the permit.
- H. Compare the measured atmosphere values with the acceptable entry limits. Report to the Entry Supervisor the results of the comparison noting in particular any value that exceeds the allowable standards and may present an atmosphere hazard.
- I. Test communications with the control room.
- J. Determine the most reliable method to communicate with the Entrants. Set up that communication method and test the effectiveness and reliability.
- K. Attend the pre-entry brief conducted by the Entry Supervisor.

The positioning of the Attendant with respect to the entry point will be established such that communication between the Entrant and the Attendant is never in question or compromised. The Attendant will remain in close proximity to the entry point to ensure access control but, as in the case of an open space, may relocate to better observe the Entrants. For a closed space, the Attendant will remain at or near the entry point.

During a confined space entry, the duties of the Attendant shall include:

- A. Report to the Entry Supervisor any issue, question or concern that may develop or any action or change of condition that would adversely affect the confined space in any way.
- B. Control access to the confined space and allow only authorized Entrants to enter. Record on the permit the entry and exit time of each Entrant.
- C. Contact the control room when the entry conditions are acceptable and the permit is authorized by the Entry Supervisor. Inform the control room when each entrant enters the confined space and when they are out. Additionally, contact the control room at approximately 15-minute intervals throughout the entry to test communications and to provide a report of conditions.
- D. Operate the air monitoring equipment and record readings on the Entry Permit at 15-minute intervals. If possible, position the sample hose for a representative atmosphere sample to where the Entrants are working but not directly in the discharge of a supply air blower. If at any time the meter alarms or if the instrument reading exceeds the allowed levels, evacuate all Entrants immediately and investigate the cause of the alarm or source of the contaminant.
- E. Maintain a watchful contact with the Entrant(s). Be attentive to notice signs or symptoms of exposure to potential hazards and expected behavioral changes to that exposure. If at any time, the health or safety of the Entrant(s) is in question or doubt immediately notify all Entrants to exit the confined space and stand-by outside the space until the concern can be resolved.
- F. At the completion of the work and after all Entrants are safely clear of the confined space, secure the access to prevent any inadvertent or unauthorized entry. Advise the control room the entry is complete and the Entry Permit is closed. Return the Permit to the Entry Supervisor for proper routing and filing.

If any Entrant suffers an injury or illness, whether as a result of a confined space hazard or not, the Attendant shall:

- A. Notify all Entrants of the situation. If the injured or ill Entrant is capable of self-rescue, he or she should move towards the entrance and exit the confined space as quickly as possible. The other Entrants may assist in the rescue if possible but shall not place themselves in greater risk by doing so.
- B. Do not under any circumstances enter the space to attempt a rescue. Contact the control room and report the situation. Ensure the Entry Supervisor is aware of the situation. Contact the Rescue person to report to the scene or begin rescue procedures.

Note: For Permit-required Confined Space entries involving District personnel, the Rescue Person will be available at the entry site at any time personnel are in the confined space.

- C. Begin non-entry rescue through the retrieval system if applicable.
- D. If you suspect an entry rescue may be necessary or the entrant may require advanced medical treatment, contact the control room to initiate emergency procedures covered in section 3.9 of this directive.
- E. If the Attendant is also Rescue trained and has the certification and ability to perform the rescue, it may be appropriate and expedient for the Attendant to take over the duties of the Rescue person once another trained Attendant has relieved him of his duties.
- F. After all Entrants have evacuated the space, secure the entrance to prevent any additional entry until the space can be evaluated for re-entry.

### **3.6.6 Authorized Entrant**

The Permit-Required Confined Space Entrant must be trained in the specific duties of the position and have the requisite knowledge to conduct a confined space activity. The Entrant must be aware of the general hazards that may be encountered during a confined space entry as well as the specific hazard unique to the confined space they will be entering. The person filling the position does not require any additional training to fill the position other than that of the Entrant.

The primary duty of the Entrant is to perform his work in a safe manner as quickly as possible and to minimize the exposure to all possible health or safety hazards. A technical knowledge of the work is required and the Entrant must have a full understanding of how the work may affect the conditions in the space.

During a confined space entry, the Entrant shall:

- A. Have knowledge of the hazards associated with the confined space entry and review the Confined Space Entry procedures and the specific duties of the Entrant.
- B. Understand the purpose of the entry and have a thorough knowledge of the work to be performed. Pre-stage the tools and equipment required for the job. Complete as much of the work as possible before entering the confined space.
- C. Attend the pre-entry brief conducted by the Entry Supervisor.
- D. Set-up and properly wear all the required personnel protective equipment (PPE). At a minimum, all entrants will wear a properly fitted harness.
- E. For vertical entries, a self-retracting lifeline will be used for fall protection while climbing ladders. For short duration entries with only one entrant, the lifeline may remain attached to the Entrant. If the lifeline is removed, ensure the cable is self-retracted under the control of the Attendant or another assistant to prevent damage to the device.



- F. Carry no tools while climbing ladders. Use a bucket with a rope or individual lanyard to lower tools to the workers or for removing material from the space.
- G. Never use the safety retrieval device for any other purpose other than the intended use to lower, raise or rescue personnel.
- H. The Entrant is to immediately follow the instructions from the Attendant on any matters concerning safety. Quickly respond to any communication attempt from the Attendant. Failure to reply may result in a rescue attempt unnecessarily placing people at risk.
- I. Report to the Attendant any change of conditions that may adversely affect the confined space.
- J. If the work is delayed, avoid any waiting or stand-by time in the confined space. Exit the space and stand-by out of the confined space.
- K. If as an Entrant, you become injured or begin to feel ill, contact the Attendant and attempt a self-rescue. Warn any other Entrant of the situation and work together to exit the space as safely as possible.
- L. In an emergency situation, the Entrant will exit the confined space as quickly as possible and stand-by to assist the Attendant or Rescue person to retrieve any remaining Entrants.

### **3.7 TRAINING**

All District employees will receive an overview of the District's Confined Space Awareness and Entry Procedures Directive during their New Employee Safety Orientation Training. Prior to initial involvement in a confined space entry, employees will be formally trained in confined space entry procedures. Refresher training will be given annually. The Safety and Risk Management staff may assist. The employee's immediate supervisor is responsible for ensuring this training is accomplished prior to assigning work that might involve entry into a confined space.

Training will also be given whenever there is a change in job assignments, equipment, or processes, that would create a new hazard, or whenever a change occurs in the District's Confined Space Awareness and Entry Procedures Directive. Some of this training may be accomplished through section tailgate training. Supervisors are responsible for ensuring this training is accomplished for all employees under their supervision.

Employees will be trained to perform the specific duties for the position or task they are assigned. Separate training will be given for the Entrant and Attendant, Entry Supervisor and the Rescue person. Any employee serving as the Rescue person must also be trained and certified in CPR and First Aid and be current in the District respirator program.

The Safety & Risk Management Division will maintain training sign-up sheets. Names of persons trained will be entered and maintained on the District's Training Database.

## **3.8 ENTRY PROCEDURES**

### **3.8.1 Entry Preparation**

A confined space may be classified as either a Non-Permit Required Confined Space or a Permit-Required Confined Space. Under certain conditions, a Permit-Required Confined Space may allow for Alternate Entry Procedures. Use the Flowchart of Appendix A for help in determining the classification and the procedure to use.

Use Appendix B for a Summary of the Confined Space Entry Requirements including staff, minimum equipment, documentation requirements and typical examples.

Use Appendix D for a list of previously classified confined spaces. The classifications were based on normal and expected conditions supported by actual testing or past history of working within the space. If for any reason, such as the purpose of the entry is not routine, the conditions are not as expected, or the work to be performed will cause or create a health or safety hazard, then the space will be reevaluated and reclassified as appropriate.

For a Permit-required or an Alternate Confined Space Entry, the Entry Supervisor will complete the Confined Space Pre-entry Checklist. The checklist is provided as a tool for the Entry Supervisor to review numerous areas of concern and thoughtfully consider the potential hazards. The Entry Supervisor will review the listed safety equipment, personal protective equipment (PPE) and rescue equipment, and check all items that will be required at the confined space entry point. The Entry Supervisor may use the Pre-entry checklist as an excellent summary page on which to conduct the pre-entry brief.

### **3.8.2 Confined Space Entry Permit**

Record the following information on the permit:

- A. Indicate if the Permit is issued as a District controlled entry or a Contractor controlled entry. Record the Company name of the contractor if applicable.
- B. The date the permit will be used and the time it is issued. Enter the expected expiration time, usually not to extend past the end of the shift.
- C. Identify the location and the description of the space.
- D. Purpose for the confined space entry.
- E. List any additional hazards that the Attendant and all Entrants must be made aware of.
- F. Names of attendant and the Rescue Standby person. In the absence of a standby rescue person, identify the rescue and emergency services available and the means to summon them.
- G. List the air monitoring instruments, identification numbers, calibration data and location where each meter is sampling.
- H. Atmospheric monitoring results prior to entry.

- I. Names of each Entrant with space available to record the time each Entrant entered the space, and the time each entrant exited the space.
- J. If atmosphere readings are out of specification, continually ventilate the space with air from a clean source to eliminate or control a hazardous atmosphere.

When all data entry is complete, the Entry Supervisor will review all data, conduct a pre-entry brief and sign the permit authorizing the entrants to enter the confined space and commence work.

At the completion of the job, the permit is filed with the respective department administrative personnel. The permit shall be retained on file for a minimum of one year.

Note: A confined space entry permit is only good for one, 24-hour period. A new permit is to be issued each day that work is performed in a confined space.

### **3.8.3 Permit-Required Confined Space Entry Procedures**

A Permit-required Confined Space Entry will include three individuals at a minimum, the Attendant, the Entrant and the Entry Supervisor. If the Entry Supervisor is also certified as a Rescue person and trained in the Rescue procedures, then he or she may also fill that position, otherwise a fourth person will be required as the Rescue person. Once the Pre-entry requirements are complete, the confined space entry may continue following this procedure:

- A. Establish the Attendant position in the vicinity of the confined space access point to perform the required duties of Section 3.6.5.
- B. Take measures to prevent entry by any unauthorized entrant.
- C. Guard the opening by railing, or temporary cover where applicable.
- D. When possible, test the atmosphere in a manhole before removing the entrance cover. For solid covers, crack an opening to allow for the sample hose to test the air before the cover is fully removed.
- E. Test the internal atmosphere with a functioning, calibrated, direct-reading instrument. Record the readings on the Permit. Continuously monitor the air in the space while any entrant is in the space and record the readings at 15-minute intervals on the permit. If the confined space is left for any reason, and air testing is interrupted, the atmosphere must be re-tested before re-entering the space.
- F. Test communications equipment between the Attendant and the Entrant.
- G. Test communications equipment between the Attendant and the Control Room. Contact with the Shift Supervisor (Plant) or Dispatcher (CSO) shall be made every 15 minutes. If the 15-minute contact is not made, the Shift Supervisor or Dispatcher shall make an attempt to contact the attendant. If contact is not made, the Shift Supervisor or Dispatcher shall immediately call 911 and initiate rescue procedures.

- H. Inspect the rescue and retrieval equipment to ensure it is ready for use. Test the self-retracting lifeline by a quick tug on the line to make sure it locks in place.
- I. When conditions in the space are determine to be acceptable entry conditions, entry may commence.
- J. If fall protection is necessary, use a self-retracting lifeline or similar device to enter the space.
- K. Maintain available, identified, and operable means to summon additional rescue services.
- L. If an emergency situation develops during a confined space entry, immediately initiate rescue procedures per Section 3.9 of this instruction.

#### **3.8.4 Alternate Entry Procedures**

Alternate entry procedures may be used for entering a Permit-required Confined Space provided that:

- the only hazard posed by the permit space is an actual or potential hazardous atmosphere; and
- continuous forced air ventilation alone is sufficient to maintain that permit space safe for entry; or
- documented monitoring and inspection data that supports the demonstrations above

Two individuals at a minimum are required for the alternate entry procedure; the Entrant and the Entry Supervisor. Test the internal atmosphere with a functioning, calibrated, direct-reading instrument. Record the readings on the Entry Permit.

The Entry Supervisor will complete the Pre-Entry Checklist and review the atmosphere reading to determine if conditions are acceptable to authorize the Alternate Entry procedures. If available, data recorded during previous entries into that space should be considered in authorizing the Alternate Entry procedures.

If the Entry Supervisor concludes that conditions are acceptable, he may authorize the Alternate Entry procedures and indicate the authorization by checking the appropriate block on the Pre-entry checklist and signing the Entry Permit.

If the Entry Supervisor has any doubt of the atmosphere conditions or any other safety concern for the entrant, he shall not authorize the Alternate Entry procedures and the normal entry procedures will be used. If at a later time, the concerns can be addressed and verified to the satisfaction of the Entry Supervisor, he may at that time authorize the Alternate Entry procedures.

Once the Entry Supervisor authorizes the Alternate Entry procedures, the confined space entry may continue following this procedure:

- A. The atmosphere in the space will be continuously sampled while any Entrant is in the space. Record the initial entry readings on the Permit. For an extended entry, record

the air readings hourly and again when you exit the space. If the confined space is left for any reason, and air testing is interrupted, the atmosphere must be re-tested before re-entering the space.

- B. Maintain available, identified, and operable means to summon a rescue person.
- C. Test communications equipment between the Entrant and the control room. Contact with the Shift Supervisor (Plant) or Dispatcher (CSO) shall be made when the space is initially entered and when you exit the space.
- D. If an emergency situation develops during an Alternate Confined Space entry, immediately initiate rescue procedures per section 3.9 of this instruction.

### **3.8.5 Non-Permit Entry Procedures**

A Non-permit Confined Space Entry will include only the Entrant. Once the Pre-entry requirements are complete, the confined space entry may continue following this procedure:

- A. For spaces designed with continuously operating ventilation fans or blowers, ensure the systems are operating to adequately exchange any foul air with fresh air.
- B. Inspect the general area to identify and eliminate potential hazards such as automobile exhaust vapors, drifting chemical fumes or smoke.
- C. Contact the control room to report that you are entering a non-permit confined space and identify the space.
- D. Be aware of your surroundings. If you detect a hazardous atmosphere or if conditions in the space change which create a hazard to your safety or health, leave the space immediately and notify your supervisor.
- E. Contact the control room to report that your work is complete and you are no longer in a non-permit confined space.

### **3.8.6 Source Control Sampling Guidelines**

Source Control has well-defined and practiced guidelines for opening manholes, taking samples, and installing portable monitoring devices into manholes or similar locations. Years of testing and performing sampling operations have demonstrated that the use of these guidelines prevents the employee from exposure to any physical hazard capable of causing death or serious physical harm. The guidelines do not authorize or intend for an employee to enter into the confined space but limits access to incidental reaching to place or retrieve a sampling device. Since the potential for a harmful atmosphere can never be completely eliminated, the guidelines shall require constant atmospheric monitoring during the sampling event. Based on strict adherence to the Source Control Guidelines associated with manholes and sampling events, Source Control supervisors may designate routine sampling as non-entry events, exempt from Entry Permit and reporting requirements.

### **3.9 RESCUE PROCEDURES**

#### **3.9.1 Rescuer Training and Equipment Requirements**

Statistically speaking, more than half of all fatalities associated with confined space entries are to persons attempting rescue operations. Attempting a rescue must be a well-planned evolution using only trained personnel. A Rescuer shall comply with the following minimum requirements.

- A. Trained and equipped with personal protective equipment.
- B. Trained in CPR and basic first aid.
- C. Fully compliant with the District's Respiratory Protection Program.
- D. Wear a chest or full body harness with a retrieval line attached to a mechanical device, i.e. tripod, davit arm, or other fixed point outside the space throughout the rescue effort.
- E. A mechanical hoisting device shall be available to retrieve personnel from vertical type spaces more than 5 feet deep.
- F. All rescue personnel shall be trained annually in simulated rescue operations including removing dummies, manikins, or persons from actual or representative permit spaces.

#### **3.9.2 Rescue and Emergency Services**

If an emergency develops and rescue is necessary, implement the following steps:

- A. Summon on-site and additional rescue, and emergency services.
- B. Use radio, walkie-talkie, cellular telephone or other communications equipment to request assistance from the Shift Supervisor @ x214 (925-229-7214) or the Solids Building Control Room @ x219 (925-229-7219) or CSO Dispatcher (925-229-7166).
- C. Shift Supervisor or CSO Dispatcher shall call 911 first and then additional numbers as designated for further assistance.
- D. For non-entry rescue use retrieval equipment to remove the entrant from the space.
- E. For entry rescue when an emergency exists, implement the following:
  - 1. If possible, place fresh air ventilation in the breathing zone of the person needing rescue. This may be done by repositioning or adding another blower.
  - 2. The person entering the space shall wear a self-contained breathing apparatus and full body harness with a retrieval line.
  - 3. If the attendant is going to enter the space for purposes of rescue, another qualified person must relieve him of his assigned duties before entering the space.
  - 4. One person performing the duties of the Attendant shall remain outside the space at all times.
  - 5. The standby person shall have a self-contained breathing apparatus donned and available for immediate use.

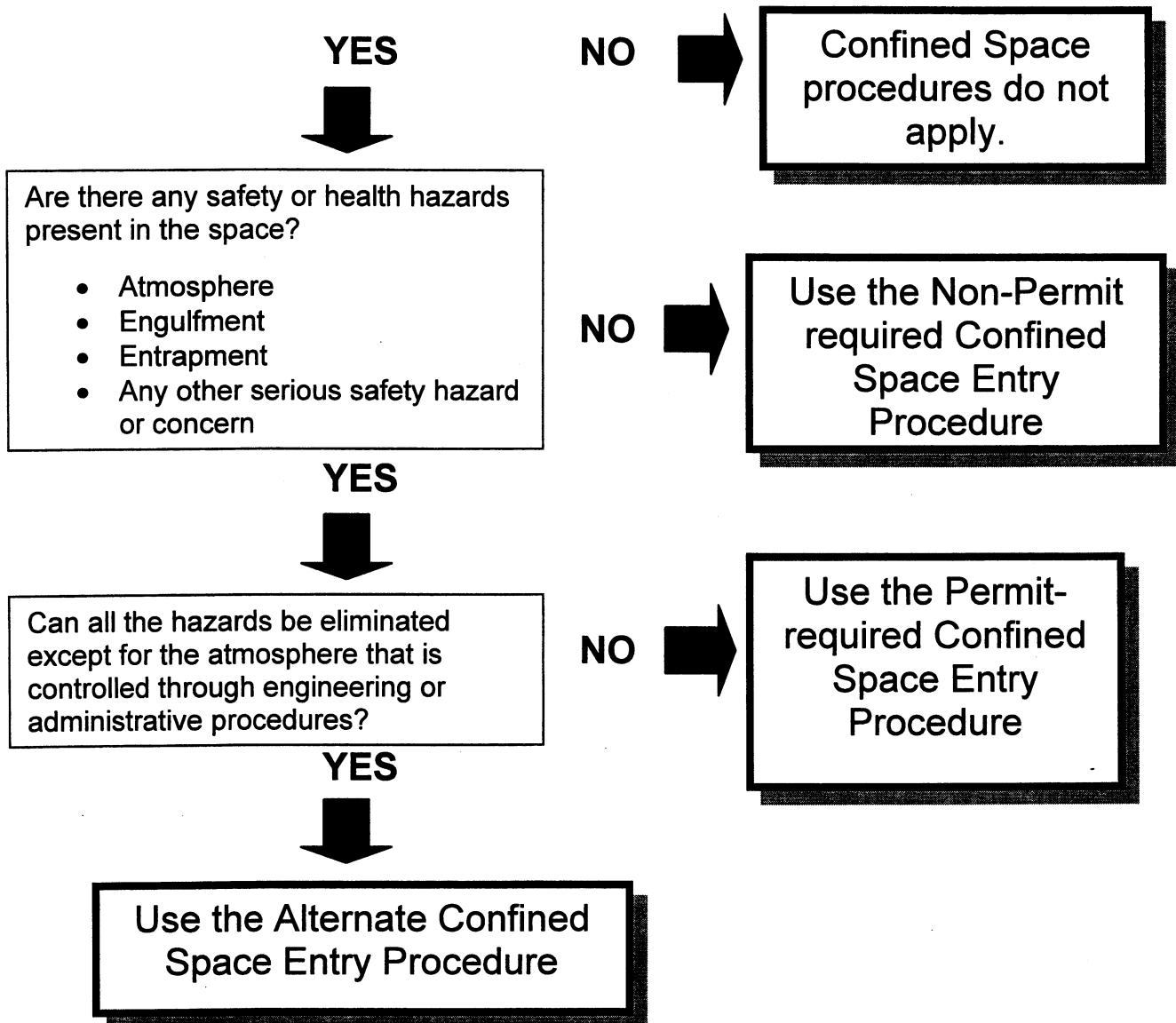
6. At least one additional person shall be within the sight or call of the standby rescuer.
7. The control room will dispatch additional personnel as required to assist where necessary. Station personnel to direct responding emergency response teams (fire department, ambulance) to the rescue scene.

APPENDIX A

### Confined Space Classification Flowchart

Is it a Confined Space? A confined space must have all three of the characteristics listed below.

- 1. Is large enough and so configured that an employee can enter and perform assigned work, and
- 2. Has limited or restricted means for entry or exit, and
- 3. Is not designed for continuous employee occupancy.





## APPENDIX B

## Summary of Confined Space Entry Requirements

Non-Permit Confined Space Entry	Permit-required Confined Space Alternate Entry	Permit-required Confined Space Entry
Confined Space with no identified hazards	Confined Space where all physical hazards are eliminated or controlled and any potential atmospheric hazard is controlled through continuous ventilation	Confined space where hazards exist but are managed through engineering measures or administrative procedures to limit the risk
<u>Staff requirements-</u> - Entrant	<u>Staff requirements-</u> - Entrant - Entry Supervisor	<u>Staff requirements-</u> - Entrant - Attendant - Entry Supervisor * - Rescue Person * * May be shared duties
<u>Equipment</u> ▪ Air Monitoring Meter ▪ Communication equipment ▪ Installed ventilation operating	<u>Equipment</u> ▪ Air Monitoring Meter ▪ Communication equipment	<u>Equipment</u> ▪ Air Monitoring Meter ▪ Communication equipment ▪ Tripod w/ retrieval device ▪ Harness
<u>Documentation</u> None	<u>Documentation</u> Pre-Entry Checklist Alternate Entry Permit	<u>Documentation</u> Pre-Entry Checklist Confined Space Entry Permit Confined Space Entry Procedure Hot Work Permit (if applicable) MSDS (if applicable)
<u>Hazard Control</u> Adequate lighting	<u>Hazard Control</u> Forced ventilation Lockout / tag out Adequate lighting	<u>Hazard Control</u> Forced ventilation Lockout / tag out Fall Protection Adequate lighting
<u>Examples</u> ▪ Non-entry manhole inspection ▪ Primary screenings ▪ Pump Station Drywells	<u>Examples</u> ▪ Clarifiers after cleaning	<u>Examples</u> ▪ Manhole entries ▪ Wet wells ▪ Furnace ▪ Tanks

APPENDIX C

**Confined Space Entry Forms**

**Form 1**                    **Confined Space Pre-entry Checklist**

**Form 2**                    **Confined Space Entry Permit**

**Form 3**                    **Confined Space Entry - Communication Log**

**Form 4**                    **Confined Space Entry Procedures Audit**

**Central Contra Costa Sanitary District**  
**CONFINED SPACE PRE-ENTRY CHECKLIST**  
**TO BE COMPLETED BY THE ENTRY SUPERVISOR**

The Pre-Entry Checklist is provided as a tool for the Entry Supervisor to aid in the determination of potential hazards within a confined space. Although the list is thorough, it should not be considered absolute as special circumstances may present unique hazards. The Entry Supervisor will review each section of the checklist and thoughtfully consider the potential hazards. Ensure each identified hazard is eliminated or controlled. Any remaining hazard will be presented at the pre-entry brief and discussed with regard to minimizing the hazard, level of possible exposure and emergency procedures.

Written Operating and Rescue Procedures are available at the Job Site (District Safety Directive 3) Initial \_\_\_\_\_

Assigned Personnel Have Appropriate Training and Certification \_\_\_\_\_

**Hazard: Describe safety procedures in place or the measures taken to control the hazard.**

1. Atmosphere:        Forced ventilation blower    Respirators    SCBA \_\_\_\_\_ \_\_\_\_\_
2. Engulfment: N/A \_\_\_\_\_ \_\_\_\_\_
3. Internal Configuration:        N/A \_\_\_\_\_ \_\_\_\_\_
4. Mechanical Equipment: Isolate, and Lockout exposure to mechanical energy.        N/A \_\_\_\_\_ \_\_\_\_\_
5. Electrical Equipment: Isolate, de-energize and Lockout exposure to electrical energy. N/A \_\_\_\_\_ \_\_\_\_\_
6. Hot Work Permit:    N/A \_\_\_\_\_ \_\_\_\_\_
7. Fluid Systems: Isolate, blank flange, drain, flush and Lockout any exposure to fluid systems. \_\_\_\_\_ \_\_\_\_\_
8. Flammable Material:        N/A \_\_\_\_\_ \_\_\_\_\_
9. Fall Protection:        N/A \_\_\_\_\_ \_\_\_\_\_
10. Communications:  (Attendant/Entrant)  (CSE Site/ Dispatch) \_\_\_\_\_ \_\_\_\_\_
11. General Area \_\_\_\_\_ \_\_\_\_\_
12. Rescue Plan:         Rescue On-site         Rescue Service: \_\_\_\_\_ \_\_\_\_\_

Check all required equipment:     Permit-required Confined Space     Non-Permit

**Safety Equipment**

**Personal Protective Equipment**

**Rescue Equipment**

- Fall Protection
- Explosion Proof Lighting
- Hoist Rigging Device (Tripod)
- Fixed High Point (Crane, beam)
- Body Harness for Attendant
- Self-retracting Lifeline
- Retrieval Winch
- Traffic Control Cones / Barriers
- Other \_\_\_\_\_

- Body Harness for all Entrants
- Gloves
- Respirator
- Safety Glasses
- Tool Pouch with Rope
- Rubber Boots / Waders
- Personal Air Monitor
- Protective Clothing

- Body Harness
- Gloves
- SCBA or Air Line
- Lanyard / Tag Line
- Fire Extinguisher
- Flash Light
- Area Lighting

Entry Supervisor: (Name/Signature) \_\_\_\_\_ / \_\_\_\_\_ Date: \_\_\_\_\_

**CONFINED SPACE ENTRY PROCEDURES AUDIT**

Confined Space Entry Location \_\_\_\_\_

Type of Entry:      Non-permit      Permit-required      Alternate Entry

Entry Supervisor \_\_\_\_\_ Date of Entry: \_\_\_\_\_

For auditing the actual entry, complete parts A and B. For a Post-entry audit, skip to part B.

<b>Part A – On-site Audit</b>	Yes	No	Comments
Did the Entry Supervisor complete the Pre-entry Check list?			
Confined Space Safety Directive SD-3 available at the entry site?			
Did all participants attend the Pre-entry brief? (Attendant, Entrant(s), Rescue)			
Were all hazards properly identified and reduced or eliminated?			
All required equipment available			
Safety equipment ready for use			
PPE appropriate for the job			
Rescue equipment ready for use			
Air monitoring performed correctly			
Forced ventilation appropriate for job			
Attendant understands his role and duties and performing those duties			
Entrant following all prescribed safety provisions			
Entry Supervisor understands his role and duties and performing those duties			
Rescuer understands his role and duties and performing those duties			
Communications properly maintained			
Any other observed safety concerns			
<b>Part B – Post-entry Review</b>	Yes	No	Comments
Entry Permit properly completed			
Atmosphere reading as expected and within acceptable limits			
Entry Permit properly filed			
Training records verified for Attendant			
Training records verified for Entrant(s)			
Training records verified for Supervisor			
Training records verified for Rescuer			
Remarks:			

Auditor: \_\_\_\_\_ Date: \_\_\_\_\_

**Central Contra Costa Sanitary District**  
**CONFINED SPACE ENTRY PERMIT**  
**TO BE KEPT ON JOB SITE UNTIL ENTRY COMPLETED**

**PERMIT ISSUED TO:**

CCCSD     Contractor: \_\_\_\_\_

Project Title: \_\_\_\_\_ Number: \_\_\_\_\_

Location and Description of Confined Space: \_\_\_\_\_

Date: \_\_\_\_\_

Time Issued: \_\_\_\_\_

Expiration Time: \_\_\_\_\_

Purpose of Entry: \_\_\_\_\_

Additional Hazards/comments: \_\_\_\_\_

Attendant \_\_\_\_\_ Rescue Standby: \_\_\_\_\_

Air Monitoring Instrument Name / Type:	Identification No.	Calibration Date	Monitoring Location
#1			
#2			

**Note:** Continuous air monitoring shall be established before beginning the job and throughout the duration of the job.

<b>Atmosphere Readings</b> <i>(For Permit-required entry Log at 15 minute intervals)</i> <b>Acceptable Entry Conditions</b>				
TIME	OXYGEN (19.5-23.5%)	H <sub>2</sub> S Less than (10 ppm)	LEL Less than (10%)	CO Less than (25 ppm)
Pre-Entry				

I certify that all required precautions have been taken and the necessary equipment has been provided for a safe confined space entry.

Alternate Entry Procedures Authorized    YES / NO

Entry Supervisor: \_\_\_\_\_

Attendant: Make reports to the computer room (on site) or to the CSO Dispatch (off Site) when each Entrant enters and exits the confined space. Make condition reports every 15-minutes.

Authorized Entrant	Time in	Time out

Notes: \_\_\_\_\_

In the event of an Emergency Rescue, record significant events here: \_\_\_\_\_

Collection System Operations Division  
CONFINED SPACE ENTRY – COMMUNICATION LOG

▶▶▶▶ To be completed by Confined Space Entry Crew Leader:

Confined Space to be entered and location of Rescue Unit meeting site:

Note: The exact location of the site that the attendant will meet rescue units (emergency responders) must be a specific street location, not an easement location.

MAP# (new Thomas Bros.): \_\_\_\_\_ Manhole #: \_\_\_\_\_ Manhole in easement?  Yes  No

ADDRESS AND STREET/WORK SITE LOCATION: \_\_\_\_\_

RESCUE UNIT MEETING SITE LOCATION/ADDRESS AND STREET: \_\_\_\_\_

NEAREST CROSS STREET: \_\_\_\_\_ CITY: \_\_\_\_\_

Copy of Permit and map attached (check as applicable):

- Copy of Authorizing Permit
- Copy of map, with location(s) highlighted:
  - Entry manhole/work site
  - Rescue unit meeting site (if in easement)

Dispatch contact numbers: Dispatch 1: Nextel ID 1197  
Dispatch 1: 229-7166

Dispatch 2: Nextel ID 27  
Dispatch 2: 229-7153

Authorized Entrant: \_\_\_\_\_

Attendant (CPR, first-aid): \_\_\_\_\_

Rescue (CPR, first-aid SCBA): \_\_\_\_\_

Emergency Services Escort (easement): \_\_\_\_\_

Radio \_\_\_\_\_ Cellular telephone no.: \_\_\_\_\_

Entry Supervisor: (Print Name) \_\_\_\_\_

(Signature) \_\_\_\_\_ Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

▶▶▶▶ To be completed by Supervisor authorizing Permit that may require a confined space entry:

Supervisor: (Print Name) \_\_\_\_\_

(Signature) \_\_\_\_\_ Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

▶▶▶▶ To be completed by Dispatcher receiving and verifying Communication Log/Map with Crew:

Dispatcher: (Print Name) \_\_\_\_\_ Phone #: \_\_\_\_\_

(Signature) \_\_\_\_\_ Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

Time	Attendant Caller Name	Truck #	Entrant Name	Action: Entry, check-in, exit, emergency	Dispatch Receiver Name

Time completed/filed: \_\_\_\_\_ By Dispatcher: \_\_\_\_\_