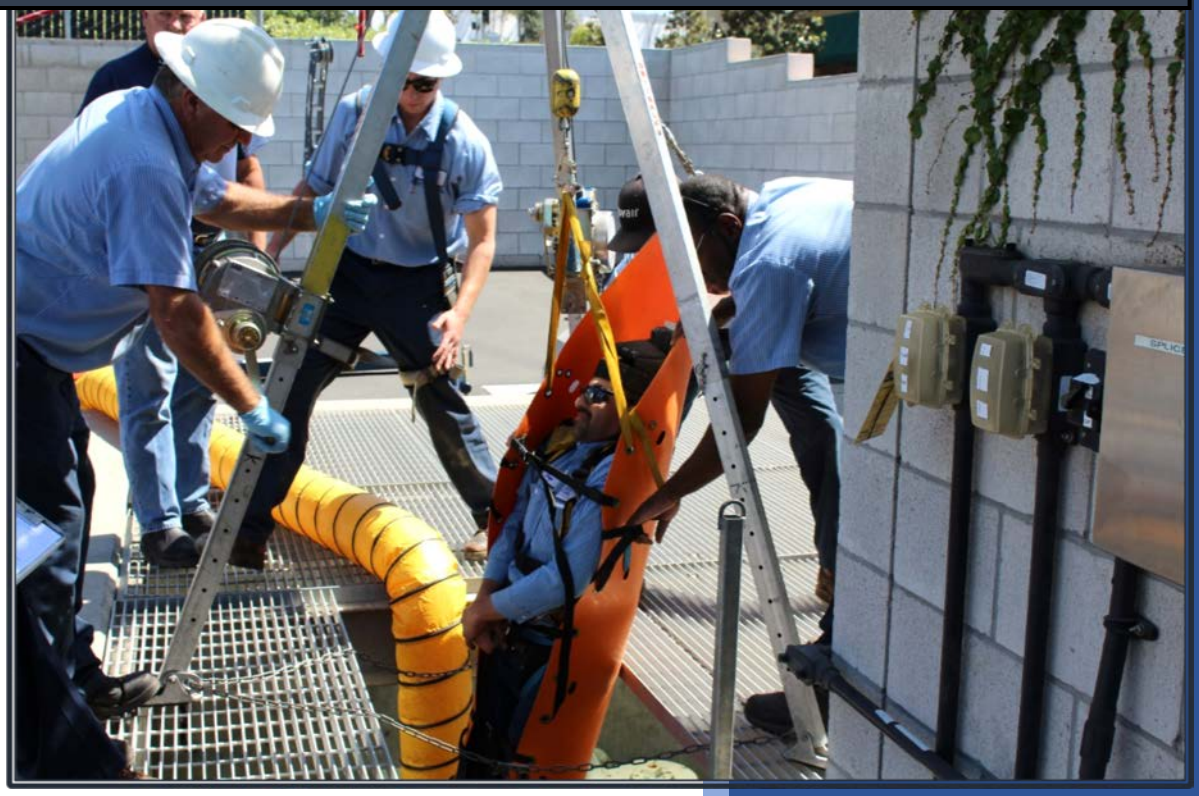
LEUCADIA WASTEWATER DISTRICT | LEADERS IN ENVIRONMENTAL PROTECTION

2017

Confined Space Program



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CONFINED SPACE ENTRY PROGRAM

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1.0 PURPOSE

The Leucadia Wastewater District's (LWD's) Confined Space Entry Program establishes safe entry procedures. This program and these procedures are part of LWD's commitment to preventing illness and injury to LWD employees and contractors, as well as protecting the environment and property.

This program identifies confined spaces at the LWD facilities, prohibits unauthorized entry, and establishes procedures for authorized entry and work within confined spaces at these locations. This program contains requirements for practices and procedures to protect employees from the hazards of entry into permit-required confined spaces as stated in California Code of Regulations, Title 8, Sections 5156-5158.

LWD employees must be able to:

- Recognize a confined space and the specific hazards associated with that space.
- Know and understand Title 8, CCR 5156-5158 and related requirements concerning respiratory protection, fall protection, lockout/tagout procedures, fire prevention and retrieval.
- Implement LWD safety programs and procedures.

LWD recognizes work in confined spaces is inherently hazardous due to a confined space's potentially changing hazards. LWD is aware confined space entry may pose potentially dangerous situations to life and health. Definitions relating to confined space entry are found in Section 3.0 definitions of this document.

Work in confined spaces may require compliance with additional LWD Safety Programs and Procedures, such as: Hot Work, Lockout-Tagout, Fall Protection, Electrical Safety, Line-Breaking, Respiratory Protection, Fire Prevention or other procedures. This Confined Space Entry Program does not include these programs, which are delineated in other related LWD programs and procedures.

2.0 SCOPE

LWD's Confined Space Entry program consists of the following:

- Responsibilities
- Requirements of the Program
- Permit-Required Confined Spaces
- Non-Permit Required Confined Spaces
- Training Requirements
- Emergency Response and Rescue

Confined spaces are inherently hazardous. Conditions can rapidly change because of the confining areas. This program is established to protect employees from injury or illness while working in confined spaces. **If any LWD employee feels his/her safety is in jeopardy, he/she is to immediately report to the Entry Supervisor. If appropriate measures still have not been made to ensure entrant safety, they should report to LWD's Safety Officer.**

Employees are allowed to enter a Permit-Required Confined Space (PRCS) under the guidelines of the PRCS Entry Program section of this program. Non-PRCS may be entered in accordance with the guidelines

established in the Alternative Procedures Section 8.0. LWD's Confined Space Entry Program is available on LWD's server, W:\SAFETY\Safety Programs for inspection by employees.

It is management's responsibility to provide a safe and healthy work environment. It is the Field Service staff's responsibility to strictly adhere to every component of this program and these procedures. Short cuts to this program could endanger the lives and health of LWD employees. Violations of this program and procedure will result in immediate discipline, up to and including termination.

3.0 DEFINITIONS

A **Confined Space** is a space that:

- Is large enough and so configured that an employee can bodily enter and perform assigned work;
- 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);
- Is not designed for continuous employee occupancy;

LWD has identified all confined spaces at the Leucadia Wastewater Facility and the remote facilities, which are documented in Attachment A. Confined spaces, both permit required and non-permit required, will be determined by using the Cal/OSHA and OSHA definitions.

The following locations may exhibit confined space conditions:

- Sewer manholes
- Tanks
- Vaults
- Wells and shafts
- Pits and sumps
- Pipelines
- Crawl spaces

Acceptable Entry Conditions - The conditions necessary in a confined space to allow entry and to ensure that employees can safely enter.

Asphyxiation - A class of dangerous gases that replace oxygen and cause unconsciousness or death by suffocation (lack of oxygen).

Standby Attendant - An individual who is stationed outside one or more permit spaces, who monitors the authorized entrants, and who performs all duties assigned to the Standby Attendant by the employer's permit program.

Authorized Entrant - An employee authorized by the employer to enter a confined space.

Carbon Monoxide - A colorless, odorless, and tasteless gas that is a chemical asphyxia. Carbon Monoxide is produced as the end product of combustion.

Engulfment - The surrounding or capture of a worker by a liquid or finely divided solid that can be inhaled to plug the respiratory system or cause death by strangulation, constriction, or crushing.

Entrapment - The trapping or asphyxiation of a worker by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross section.

Entry - The action by which a person passes through an opening into a permit-required confined space. Entry is said to have occurred as soon as any part of the body crosses the plane of the opening.

Entry Permit (Permit) - An authorization and approval in writing that specifies the location of the confined space and the type of work to be done. It also certifies that all existing hazards have been evaluated by a qualified person and that necessary protective measures have been taken.

Entry Supervisor - An employee assigned by the employer to supervise permit space entries. Responsible for determining if acceptable conditions exist in a permit space prior to entry, authorizing entry with a permit, overseeing operations, and terminating the entry at the completion of work.

Flammable Atmosphere - An atmosphere which poses a hazard because flammable or explosive gases, vapors, or dusts are present at a concentration greater than ten percent of their lower flammable limit.

Hazardous Atmosphere - An atmosphere which exposes employees to a risk of death, incapacitation, injury, or acute illness from one or more of the following causes:

- A flammable atmosphere.
- Airborne combustible dust.
- An atmosphere containing oxygen levels below 19.5% or above 23.5%.
- An atmosphere where the permissible exposure limit for a certain chemical has been exceeded and could result in exposure.
- Any other atmospheric condition that is immediately dangerous to life and health.

Hot Work - Any work that introduces an ignition source into a confined space (i.e. welding, cutting, brazing or soldering).

Hydrogen Sulfide - A colorless gas that, at low levels, has the odor of rotten eggs. It is a chemical asphyxiate and its smell cannot be relied upon for adequate warning.

Immediately Dangerous to Life and Health (IDLH) - Any condition that: poses an immediate or delayed threat to life; could cause irreversible adverse health effects; or could interfere with Authorized Entrants' ability to evacuate the permit space unaided.

Lockout/Tagout - The control of all hazardous energies within a system prior to performing service on the system. The LWD Hazardous Energy Control: Lockout/Tagout Procedure will assist in complying with the Cal/OSHA standard set forth at California Code of Regulations, Title 8, Section 3314.

Non-Permit Required Confined Space - A confined space NOT containing ANY of the characteristics listed under permit-required confined spaces may be considered a non-permit confined space.

Oxygen Deficient - At atmosphere containing less than 19.5% oxygen by volume. Insufficient oxygen is present to sustain life.

Oxygen Enriched Atmosphere - An atmosphere containing more than 23.5% oxygen by volume. Increases the potential for explosion or ignition of an explosive or flammable substance.

Parts Per Million (PPM) - The volume measurement of a gas concentration (parts of a contaminant per million parts of air).

Permit-Required Confined Space (Permit Space) - Is a confined space which has one or more of the following characteristics:

- Contains or has the potential to contain a hazardous atmosphere.
- Contains a material with the potential for engulfment of an entrant.
- Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls, or a floor which slopes downward and tapers to a smaller cross-section.
- Contains any other recognized serious safety or health hazard.

Personal Protective Equipment (PPE) - Equipment that will help prevent accident and personal injury. PPE includes hard hats, goggles, face shields, steel-toed shoes, respirators, aprons, gloves and full body suits.

Prohibited Condition - Any condition in a permit space that is not allowed by the permit that occurs during entry.

Purge - To do a complete air exchange in a confined space prior to entry which is designed to remove the contaminated air and replace it with fresh air.

Qualified Person - A person designated by the employer, in writing, as capable (by education or training) of anticipating, recognizing, and evaluating hazardous substances or other unsafe conditions present in confined spaces.

Retrieval System - The equipment used for non-entry rescue of persons from permit spaces (includes retrieval line, harness and lifting device).

Site Survey - The process by which the workplace is surveyed for confined spaces identifying “permit spaces” and determining whether employees would need to enter the spaces or not.

Stratification - The separation of gases into layers, depending on weight, which tends to occur without normal ventilation in a confined space. This is the reason why atmospheric testing must be performed at various levels to ensure employee safety.

Ventilator - A machine designed for moving quantities of air. This machine is used to ventilate the confined space prior to and during the entry.

4.0 RESPONSIBILITIES

4.1 Administrative Responsibilities

LWD is responsible for ensuring the safety of its employees and for complying with all related regulatory requirements. Because of the importance which LWD places on safety, LWD encourages all employees to promote positive attitudes regarding safety, to incorporate safety into their work practices, and to cooperate fully in the implementation of safety-related programs. LWD's Safety Officer has authority and responsibility for administering this policy and these procedures.

4.2 Managers and Supervisors

All managers and supervisors are responsible for:

- Ensuring all provisions of the LWD Confined Space Entry Program are obeyed.
- Determining whether employees need to enter confined spaces.
- Identifying employees who will be required to participate in confined space entries as part of their duties.
- Ensuring all employees required to participate in confined space entries are properly trained prior to assignment.
- Ensuring proper safety equipment required for entry is made available to employees.

4.3 Employees

Employees are responsible for:

- Observing all practices and procedures contained in the LWD Confined Space Entry Program and other general safety practices.
- Attending all designated training sessions.
- Reporting hazardous or unsafe conditions to their supervisor, the entry supervisor, or the Safety Officer.
- Employees designated as "Authorized Entrants, Entry Supervisors, and/or Standby Attendants" are responsible for additional duties as outlined in "Duties of Designated Employees."

5.0 REQUIREMENTS OF LWD CONFINED SPACE ENTRY PROGRAM

This Confined Space Entry Program includes the following minimum general requirements:

- All confined spaces in the workplace have been identified and are documented in Attachment A.
- Identified confined spaces will be evaluated for hazards, including atmospheric, engulfment and entrapment hazards, hazardous energies, and other serious hazards.
- Confined spaces will be classified as non-permit or permit-required confined spaces based on the hazards identified.
- Employees will be informed of the existence, locations and dangers posed by confined spaces. Methods of notification include posting signs near confined spaces, employee training, and posting a list of all confined spaces in general work areas.
- LWD determines which employees will be required to enter confined spaces and provide them with training on all the necessary entry procedures.

- LWD continuously reevaluates non-permit required confined spaces to determine if uses or configuration of spaces change. Spaces are reclassified as permit-required spaces when necessary.

6.0 PERMIT-REQUIRED CONFINED SPACE (PRCS)

Entry into confined spaces with hazardous atmospheres, or risk of engulfment, entrapment or other serious hazards must be performed in accordance with LWD's PRCS program. The following sections outline the general requirements of this program.

6.1 Identification of Confined Spaces

All confined spaces at LWD will be identified, labeled, and quantified for volume of air requirements. Employees must be made aware of the existence and location of permit-required confined spaces. This may be accomplished by:

- Posting of danger signs to read, "DANGER—PERMIT REQUIRED CONFINED SPACE—DO NOT ENTER."
- Employee training on the existence and location of permit-required spaces.
- Posting a list of all confined spaces in general work areas.

6.2 Required Equipment

Safety equipment is required to assist safe entries into and removal from PRCSs. LWD will supply the required equipment to LWD employees engaged in permit space entries. The extent of actual equipment required depends on the hazards present and the category of confined space being entered. LWD employee training must include hands-on usage of all required confined space entry equipment so employees become proficient in their understanding and use of the equipment. Equipment that may be required includes:

Ventilation fans
Retrieval equipment
Monitoring equipment
Communication equipment
Barricade equipment
Ladders
Life lines
Personal protective equipment (PPE)
Lighting equipment
Lockout/Tagout devices
Other safety equipment required to complete the job

Ladders must be provided in confined spaces that are four (4) feet or deeper within 25 feet of a work area. Ladder side rails shall extend at least three (3) feet above the landing.

6.3 Atmospheric Testing

Atmospheric testing is required for the evaluation of hazards in confined spaces and verification that acceptable conditions exist for entry. At a minimum, the space must be tested for oxygen, combustible gases, and vapors, as well as toxic gases and vapors. These items can be tested individually (oxygen first, combustibles, then toxics) or they can be tested simultaneously. All testing must be recorded on the confined space entry forms.

Acceptable conditions are:

- oxygen content between 19.5% and 23.5%;
- combustible gas concentration less than 10% lower flammable limit (LFL); and
- toxic gas, vapor, dust, and mist concentration below the Occupational Safety and Health Administration permissible exposure limits (See attachment B, CF Permit, or reference OSHA PEL).

It is necessary to test conditions before entry into a PRCS to determine if acceptable entry conditions exist. If isolation of the space is not feasible, pre-entry testing will be performed to the extent possible. Note: Testing refers to atmospheric testing, but may include other types of testing necessary to ensure acceptable entry conditions.

During entry into the space, monitoring must be conducted either continuously or periodically to ensure acceptable entry conditions are maintained. The atmosphere must be tested at various points in the confined space as atmospheric hazards may be stratified and vary at different levels, depending on the contaminant present, location, and the conditions of the space. If the monitoring instrument goes into alarm or fails to operate at any time during entry, the entry must be stopped and entrants removed from the space.

Monitoring equipment must be maintained according to the manufacturer's specifications to ensure proper operation during confined space testing and entry. Instrument calibration must be conducted frequently and recorded to ensure equipment operation is within acceptable ranges.

Proper atmospheric testing is one of the most important subjects covered in employee training. Employees must become familiar with the performance and limitations of their monitoring equipment.

6.4 General Requirements

LWD has developed a permit system for entry to all PRCSs. The permit system outlines the responsibilities of all employees involved and documents the completion of measures for safe entry in PRCSs, including:

- Isolation of permit space, both inside and outside.
- Ventilation of space if necessary.
- Testing of atmosphere both before and periodically throughout the entry.

The key to the permit system is the proper completion of an Entry Permit. The permit, which is described under Section 6.5, must be:

- Signed by the Entry Supervisor before beginning the entry process.
- Available to entrants before and during entry.
- Authorized for the duration of the required task only.
- Kept for a minimum of 1 year for program review purposes. Problems encountered during entry must be noted on the permit so that revisions to the program can be made.
- Canceled when: pre-entry operations have not been completed or covered with entrants; conditions arise which prevent entry; conditions outlined in permit change; conditions not allowed under the entry permit occur in or near the permit space; or the work has been completed.

PRCS entries must follow all guidelines established in the pre-planning meeting and on the Entry Permit. A minimum of one Standby Attendant must be stationed outside the permit space for the duration of the entry.

6.5 Entry Permit

The Entry Permit (Enclosed) is the item that documents program compliance and authorizes entry to a PRCS. **Only Entry Supervisors are authorized to issue a permit. Both the permit issuer and the permit receiver must physically review the site before a permit is issued.** Entry Permits must be posted at the work site for the duration of entry and must identify the:

- Space to be entered.
- Purpose of entry.
- Date and duration of entry.
- Name(s) of Authorized Entrant(s).
- Standby Attendant name(s).
- Entry Supervisor (with signature authorizing entry).
- Hazards of the permit space to be entered.
- Measures to isolate the space or to eliminate or control space hazards, including lockout/tagout, ventilation, blanking of lines, etc.
- Acceptable entry conditions.
- Results of initial and periodic atmosphere monitoring, including names of those doing monitoring.
- Rescue and emergency procedures to be used.
- Communication procedures to be used by Authorized Entrants and Standby Attendants.
- Required equipment, including PPE, monitors/alarms, rescue items, ladders and any other required safety equipment.
- Additional safety information needed to safely complete the entry.
- Additional permits, such as those for hot work that have been permitted for the space.

6.6 Pre-Planning

A pre-entry planning meeting must be conducted to ensure all parties understand the work to be done, entry procedures, the duties of each employee, hazards that may be encountered, necessary equipment and emergency plans. Work procedures involving any chemicals or work techniques that could create additional hazards within the space should also be covered. Pre-planning should cover all required engineering controls needed to address the space's hazards including ventilation, space isolation, lockout/tagout of equipment or processes, and PPE, as well as emergency response and rescue procedures.

6.7 Duties of Designated Employees

6.7.1 Entry Supervisor

Entry Supervisors are primarily responsible for ordering entries into PRCSs and ensuring all proper procedures contained in this manual are followed. Entry Supervisors are specifically responsible for:

- Staying onsite in communication with the Standby Attendant to assist should rescue of one or more of the entrants become necessary.
- Knowing the hazards faced during entry, including signs, symptoms, and consequences of exposure.
- Verifying all Entry Permit requirements have been properly addressed.
- Authorizing entry by signing Entry Permit.
- Properly terminating or canceling the Entry Permit.
- Canceling the permit if unacceptable conditions arise during entry.
- Verifying rescue services are available and can be summoned.
- Removing unauthorized individuals from the entry area.
- Ensuring that the terms of the Entry Permit are followed and that acceptable entry conditions are maintained.
- Conducting pre-planning meetings with designated employees involved in permit-required confined space entries.

6.7.2 Authorized Entrant

Authorized Entrants are the employees actually entering the PRCS and performing necessary duties. Authorized Entrants are responsible for:

- Knowing the hazards faced during entry, including information on the signs, symptoms, or consequences of exposure.
- Knowing proper use of equipment required for entry, including monitoring, ventilation, PPE, lighting equipment, barriers/shields, safety equipment for entry and egress, and rescue and emergency equipment.
- Communicating with the Standby Attendant to enable the Standby Attendant to continue to monitor the Authorized Entrant.
- Alerting Standby Attendant if warning signs or symptoms of exposure are detected, or if prohibited conditions occur.
- Exiting the space if the Standby Attendant orders evacuation, warning signs or symptoms of exposure are detected, a prohibited condition occurs, or if an evacuation alarm is activated.

6.7.3 Standby Attendant

Standby Attendants are individuals stationed outside PRCSs. Their job is to monitor Authorized Entrants as well as perform required duties. There must be one Standby Attendant with entry gear trained in first aid and cardiopulmonary resuscitation (CPR) within sight or call of the entry point. There must also be an effective means of communication between the employee in the confined space and the Standby Attendant. Standby Attendants are responsible for:

- Knowing the hazards faced during entry, including information on the signs, symptoms, or consequences of exposure.
- Knowing behavioral effects of hazard exposure, such as those from heat or chemical exposure. Effects may include slurred speech and/or physical impairment.
- Maintaining an accurate count of entrants and ensuring the Entry Permit correctly identifies exactly who is in the confined space.

- Remaining outside the permit space during entry until assisted or relieved by another Standby Attendant. **(Even if Standby Attendant is trained in rescue, it must not be attempted until another Standby Attendant or supervisor can assist or relieve.)**
- Communicating with entrants to monitor status and alert them of the need to evacuate the space.
- Monitoring activities inside and outside the space to identify potential hazards to the entrants and call for evacuation if conditions are unsafe.
- Summoning rescue and other emergency services as soon as it is determined that the entrant(s) may need assistance to escape.
- Removing or preventing unauthorized personnel from entering the permitted space.
- Performing non-entry rescues.

6.8 Contractors

When the LWD arranges to have employees of another employer (contractor) perform work that involves permit space entry or confined space entries covered by Title 8 CCR Section 5157, LWD shall:

- Inform the contractor that the workplace contains permit spaces and that permit space entry is allowed only through compliance with a permit space program.
- Apprise the contractor of the elements, including the hazards identified, and LWD's experience with the space, that make the space in question a permit-required confined space.
- Apprise the contractor of any precautions or procedures that LWD has implemented for the protection of employees in or near permit spaces where contractor personnel will be working.
- Coordinate entry operations when employees of more than one employer are working simultaneously as authorized entrants in a permit-required confined space, so that employees of one employer do not endanger the employees of any other employer.
- Debrief the contractor after the entry operations regarding the permit spaced program followed and regarding any hazards confronted or created in permit spaces during entry operations.

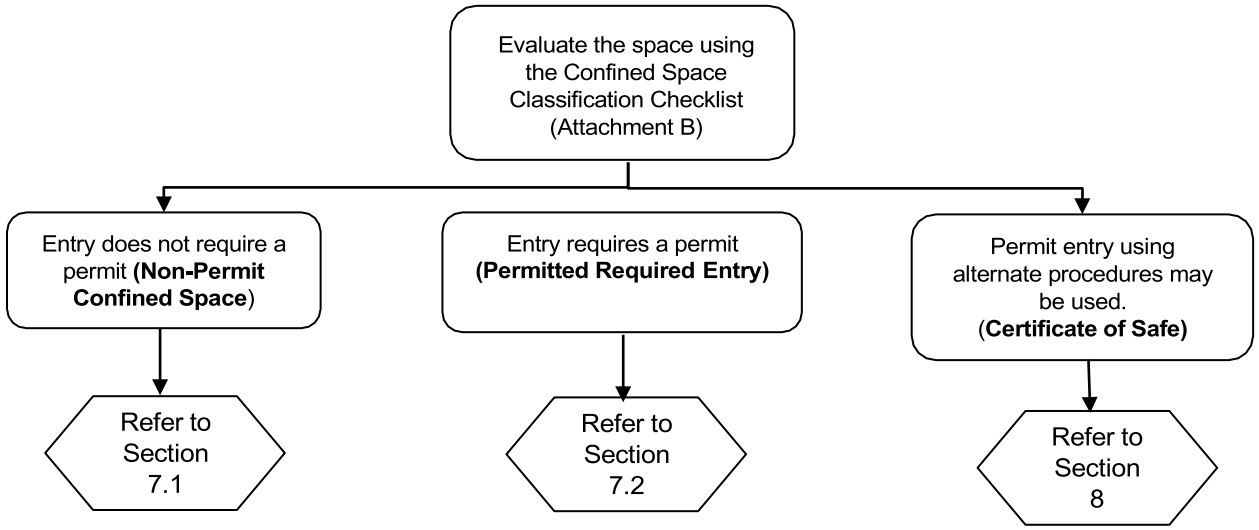
Each contractor who is retained to perform permit-required confined space entry operations is required to:

- Meet or exceed permit-required confined space requirements outlined in the LWD's Confined Space Entry Program.
- Obtain any available information regarding permit-required confined space hazards and entry operations from LWD.
- Coordinate entry operations with the LWD when both LWD personnel and contractor personnel are to be working in or near permit-required confined spaces.
- Inform LWD of the permit space program that the contractor will follow and of any hazards confronted or created in permit spaces, either through a debriefing or during the entry operation.

When LWD arranges to have a contractor perform permit-required confined space entry, and the Contractor has its own rescue team, LWD will provide the Contractor with access to the permit- required confined space from which rescue may be necessary, so that the Contractor can develop appropriate rescue plans.

7.0 CONFINED SPACE ENTRY PROCEDURES

This section provides specific guidelines for the evaluation, classification, and entry of confined spaces. All confined spaces are to be considered dangerous and shall not be opened or entered until proven safe by methods outlined in this section. The first step is to evaluate the space using the Confined Space Classification Checklist found in Attachment B.



Spaces may have to be evacuated and re-evaluated if hazards arise during entry.

7.1 CONFINED SPACE – NON-PERMIT

7.1.1 Those confined spaces and associated activities that have been evaluated using the Confined Space Classification Checklist (Attachment B) and have been identified and designated as ***No Permit Required***. These confined spaces pose no actual or potential atmospheric hazards. Entry to these spaces may occur without the need for a written permit or attendant provided that planned work activities do not introduce new hazards that adversely impact air quality or otherwise increases the hazards to entrants. (See attachment A for a list of confined spaces).

7.1.2 Adequate safety barriers shall be provided to eliminate inadvertent entry into the space guardrails, tape, cones, and obstacles).

7.1.3 Air quality will have been tested to verify that there are no potential or real atmospheric hazards, and recorded prior to space classification on the Confined Space Classification Checklist. The Field Services Department will keep completed Confined Space Classification Checklists. These records are available for review upon request.

7.1.4 When a hazardous condition is detected, all entrants will leave the space immediately and the space will be re-evaluated and re-classified if necessary.

7.2 CONFINED SPACE – PERMIT REQUIRED:

7.2.1 If the Confined Space Classification Checklist (Attachment B) determines that a confined space is a fully permitted confined space, an Entry Permit (Enclosure A) shall be prepared to document that the space is safe to enter.

7.2.2 Additional permits such as HOT WORK shall be attached, as applicable, as a supplement to the Confined Space Entry Permit.

7.2.3 Any other relevant information, such as Safety Data Sheet (SDS) information, shall also be attached as a supplement to ensure the safety of the entrants where applicable.

7.2.4 All pre-entry preparation activities specified on the permit shall be completed before entry is authorized. These preparations include, but are not limited to, the following:

- ✓ Isolating the permit space
- ✓ Depressurizing equipment under positive pressure or re-pressurizing equipment under negative pressure
- ✓ Lockout, block out, tagout, and verification of isolation of all sources of electrical, pneumatic, mechanical, gravity, chemical, thermal, or radiation hazards
- ✓ Purging, inserting, flushing, or ventilating the permit space as necessary to eliminate or control atmospheric hazards
- ✓ Providing pedestrian, vehicle, or other barriers as necessary to isolate the area and protect entrants from external hazards.

7.2.5 Once all pre-entry preparations have been made, the Entry Supervisor conducts a Pre-Entry Briefing with the Attendant and Entrant. The following information is covered:

- ✓ The hazards that may be encountered during entry procedures.
- ✓ The steps each person shall take to control the hazards and identify and control any new hazards that may arise.
- ✓ The emergency procedures to be followed within the space in the event of a problem.
- ✓ The communications method between the entrant and attendant.
- ✓ The atmospheric testing results
- ✓ Each person's expected task during the entry.
- ✓ Any time limits placed upon them in reference to their time in the space and/or total mission time.

7.2.6 When entry operations are conducted, permit space conditions are to be evaluated as follows:

- ✓ Test conditions in the permit space to determine if acceptable entry conditions exist before entry is authorized to begin.
- ✓ If isolation of the space is not feasible because the space is large or is part of a continuous system (such as a sewer), pre-entry testing is performed to the extent

feasible before entry is authorized and, if entry is authorized, conditions shall be continuously monitored in the area where authorized entrants are working (i.e. in the entrants breathing zone). This requirement can be satisfied by requiring the entrant to wear a personal air monitor at all times.

- ✓ Test or monitor the permit space as necessary to determine if acceptable entry conditions are being maintained during the course of entry operations.
- ✓ When testing for atmospheric hazards test for the following in the order given:
    1. Oxygen (19.5% - 25.5%)
    2. Combustible gases and vapors (Less than 10% LFL)
    3. Toxic gases and vapors (Carbon Monoxide <25 ppm, Hydrogen Sulfide <10ppm)
- ✓ At least one attendant shall be stationed outside the permit space into which entry is authorized for the duration of entry operations.
- ✓ The completed permit shall be made available at the time of entry to all authorized entrants, or their authorized representatives, and to the attendant. This availability is accomplished by posting the permit at the entry portal or by any other equally effective means; so that the entrants and attendant can confirm that pre-entry preparations have been completed.

7.2.7 The permit space is evacuated immediately under any of the following conditions:

- ✓ The entrant or attendant detects a prohibited condition
- ✓ The entrant recognizes any warning sign or symptom of exposure to a dangerous situation
- ✓ An air monitoring instrument alarms
- ✓ The attendant detects the behavioral effects of hazard exposure in an authorized entrant
- ✓ The attendant detects a situation outside the space that could endanger the authorized entrant, or
- ✓ The attendant cannot effectively and safely perform all the required duties.

8.0 CONFINED SPACE-PERMIT REQUIRED ENTRY USING ALTERNATE PROCEDURES

8.1 If the evaluation, using the Confined Space Classification Checklist, determines that the only hazards or potential hazards of the confined space are atmospheric contaminants that can be eliminated or controlled by continuous forced air (or other equally effective means), and eliminate all other risks/hazards that would make the space unsafe to enter, entry into the permit-required confined space may be made using alternate confined space entry procedures.

8.2 Alternate procedures can be used to enter the space when:

- ✓ No other potential hazards exist; and
- ✓ Atmospheric hazards can be effectively removed and controlled by forced ventilation; and
- ✓ Workers can safely enter and work in the space; and
- ✓ All testing results and monitoring data are documented, retained, and made available to each employee who enters the space.

8.3 In order to classify confined space for entry using alternate procedures, documentation of specific data about the space must be made. This documentation and collection of data is recorded on the Confined Space Classification Checklist (Attachment B) prior to and during the entry.

The completed checklist is returned to the employees' supervisor at the completion of the entry. The Supervisor will review and file the checklist with the permit log book.

8.4 Prior to entering a confined space using alternate procedures, the following is performed:

- ✓ Any conditions making it unsafe to remove the cover to the space are eliminated.
- ✓ All hazards or eliminated or controlled
- ✓ Signs and warnings to avoid unauthorized entry are posted.
- ✓ All sources of ignition are eliminated.
- ✓ The air around the opening to the space is tested and then the air inside the space is tested. The results of this testing are recorded on the Confined Space Classification Checklist (Attachment B).
- ✓ When testing for atmospheric hazards test for the following in the order given:
    1. Oxygen (19.5% - 25.5%)
    2. Combustible gases and vapors (Less than 10% LFL)
    3. Toxic gases and vapors (Carbon Monoxide <25 ppm, Hydrogen Sulfide <10ppm)

- ✓ Ventilation equipment is activated as necessary to maintain acceptable air quality. If ventilation equipment malfunctions or stops operating, for any reason, the space will be immediately evacuated.
- ✓ Atmospheric monitoring is continuously performed while inside the space. If, at any time, the gas meter signals an unsafe condition or any other condition arises that may affect employee safety, all entrants will immediately vacate the space. Entry is not allowed again until the space has been re-evaluated for hazards and a determination made whether alternate entry procedures are appropriate.

9.0 CONFINED SPACE ENTRY TRAINING REQUIREMENTS

9.1 General Training Requirements

LWD provides annual training so all employees whose work involves confined space entries become proficient in the requirements of this program. Employees must possess the understanding, knowledge, and skills necessary for the safe performance of the assigned duties. When respirators or lockout/tagout procedures are required to enter a confined space, training is provided to all affected employees within the requirements of each specific regulation.

General confined space entry training must be provided to affected employees:

- Before the employees are first assigned duties under this regulation.
- Before there is a change in regulations and/or assigned duties.
- Whenever there has been a change in permit space operations which presents one or more hazards about which an employee has not previously been trained.
- Whenever LWD has reason to believe there are deviations from the permit space entry procedures required by the Entry Permit.
- When LWD becomes aware there are inadequacies in the employee's knowledge or use of required procedures.

9.2 Authorized Entrant Training Requirements

Authorized Entrants must receive general training as well as specific training on the:

- Proper uses of equipment required for entry, including monitoring, ventilation, PPE, lighting equipment, barriers/shields, safety equipment for entry and egress, and rescue and emergency equipment.
- Procedures to ensure communication between the Authorized Entrant and the Standby Attendant when the Authorized Entrant recognizes any warning signs, symptoms of exposure to a dangerous situation, or a prohibited condition.
- Required communication with entrants to monitor status and alert them of the need to evacuate the space.

9.3 Standby Attendant Training Requirements

Standby Attendants must receive general safety training as well as confined space-specific training in:

- Current First Aid / CPR certification.
- Behavioral effects of hazard exposure, such as those from heat or chemical exposure. Example effects include slurred speech and/or physical impairment.
- Process of maintaining an accurate count of entrants and ensuring permit correctly identifies exactly who is in the space.
- Requirement for the Standby Attendant to remain outside the confined space at all times during confined space entry operations until relieved by another trained Standby Attendant or supervisor.
- Activities and hazards associated with confined spaces.
- Ability to evacuate workers from the space immediately if a prohibited condition is detected, behavioral effects of hazard exposures to Authorized Entrants are detected, conditions outside the confined space change such that Authorized Entrants are endangered, or if the Standby Attendant cannot perform all duties required.
- Procedures to summon rescue and other emergency services as soon as the Standby Attendant determines Authorized Entrants need assistance to escape permit space hazards.
- Prevention of confined space entry by unauthorized personnel.

9.4 Entry Supervisor Training Requirements

Entry Supervisors must receive general safety training as well as confined space-specific training on the:

- Isolation of permit space, both inside and outside;
- Hazards associated with confined space entry, including information on the mode, signs symptoms, and consequences of exposure;
- Proper procedures for filling out Entry Permits;
- Conditions in which a permit can be canceled;
- The requirement to stay onsite and in communication when confined space entry is in process;
- Procedures needed to ensure that rescue services are available and the means for summoning them are operable; and
- Procedures to ensure that operations are consistent with the requirements of the Entry Permit.
- Proper communication to standby attendant.

10. EMERGENCY RESPONSE AND RESCUE

LWD contracts with an agency for Confined Space Rescue Standby Services. The agency shall comply with all CalOSHA confined space regulations and will provide the following services:

- Develop a site-specific Health and Safety Plan
- Inspect permit required confined spaces and develop confined space rescue plans
- Review the plan with all affected personnel and identify the nearest communication method, preferred emergency response vehicle entry/exit route, safety shower, eye wash, fire alarm, etc.
- Mobilize necessary personnel, equipment, and materials.
- Stage rescue equipment in close proximity to confined space entry point
- At a minimum, at least one standby person at the site is trained and immediately available to perform rescue and emergency services. (Per CalOSHA Section 5157)
- Assume their roles and take on emergency rescue operations.

ATTACHMENT A
INVENTORY OF CONFINED SPACES

NON-PERMIT ENTRIES
(After the atmospheric conditions have been tested)

DRY WELLS
- BATIQUITOS PUMP STATION
- LEUCADIA PUMP STATION
- ENCINITAS ESTATES
- VILLAGE PARK #7

VALVE VAULTS
- LEUCADIA FORCE MAIN
- LEUCADIA ELECTRICAL VAULT
- BATIQUITOS FORCE MAIN

AWT PLANT
- INFLUENT METERING VAULT

SUBMERSIBLE PUMP STATIONS
- AVOCADO PUMP STATION
- DIANA PUMP STATION
- SAXONY PUMP STATION
- RANCHO VERDE PUMP STATION
- VILLAGE PARK #5 PUMP STATION

CONFINED SPACE PERMIT CERTIFICATE OF SAFE ENTRY USING ALTERNATE PROCEDURES or CONFINED SPACE PERMITS ENTRIES

WET WELLS
- AVOCADO PUMP STATION
- BATIQUITOS PUMP STATION
- DIANA PUMP STATION
- ENCINITAS ESTATES
- LA COSTA PUMP STATION
- LEUCADIA PUMP STATION
- RANCHO VERDE PUMP STATION
- SAXONY PUMP STATION
- VILLAGE PARK #5 PUMP STATION
- VILLAGE PARK #7 PUMP STATION

OVER FLOW BASINS
- BATIQUITOS PUMP STATION
- LEUCADIA PUMP STATION

COLLECTION SYSTEM
- ALL MANHOLES

AWT PLANT
- CHLORINE CONTACT CHAMBER
- INLET WETWELLS
- AIR GAP TANK

CARBON SCRUBBER TANK
- BATIQUITOS PUMP STATION
- LEUCADIA PUMP STATION

HYDRONEUMATIC TANK
- BATIQUITOS PUMP STATION
- LEUCADIA PUMP STATION

ATTACHMENT B
CONFINED SPACE CLASSIFICATION CHECKLIST

SPACE TO BE ENTERED:	SPACE ASSESSED BY:
PURPOSE OF ENTRY:	COMMUNICATION DEVICE(S) to SUMMON OFF-SITE HELP: ☐ Phone ☐ Radio ☐ Other:

NOTE: This Classification Check list is to be completed ONLY by an AUTHORIZED employee

Step 1: Test the Air: Ensure explosive or other hazardous conditions that make it unsafe to remove or open the cover are eliminated.

ATMOSPHERIC MONITORING EQUIPMENT
EQUIPMENT:
SERIAL#:
DATE CALIBRATED:
DATE BUMP TESTED:
BATTERY CHARGED?

HAZARD	LIMIT/PEL	TOP 1/3 RESULTS	MID LEVEL RESULTS	LOWER 1/3 RESULTS	AIR QUALITY ACCEPTABLE
Oxygen	19.5-23.5%				
Flammable, LFL	10% (max)				
H_2S	10 ppm				
CO	25 ppm				

Step 2: Is the air quality acceptable:
IF YES - Continue to **Step 3.**
IF NO: Purge space until air is acceptable. If air cannot be controlled through forced ventilation alone, **the space must be entered using an ENTRY PERMIT.**

Step 3: Is this an active, flowing sewer manhole?
IF YES - Continue to Step 4. **IF NO** - Continue to Step 6

Step 4: Will the entrant's feet or face be passing through an opening to perform this task?
IF NO - Continue to Step 5
IF YES - **STOP! The space must be entered using an ENTRY PERMIT.**

Step 5: Will the entrant's body part (e.g. hand) that will be breaking the plane be exposed to a hazardous condition inside the space (thermal, electrical, chemical, etc.)?
IF NO- **STOP!** Complete a Non-Entry Manhole Opening Log for additional non-entry manhole work.
IF YES - **STOP! The space must be entered using an ENTRY PERMIT.**

Step 6: Check the space for physical hazards:

	CONDITION	YES	NO	N/A
1	All conditions making it unsafe to remove an entrance cover are eliminated before cover is removed. *(live electrical, moving parts or other forms of energy potential for explosions, etc.)*			
2	Hazardous energy sources (electrical, pressure, mechanical, pneumatic, etc.) are either **totally** contained (e.g. covers & guards in place, no line-breaking activities, no leaks, etc.) or **properly isolated** (e.g. locked/blocked out, blind flanged, valve off, disconnected, blanked, etc.)			
3	Space has been Purified, flushed or is otherwise clean of any hazardous materials/chemicals.			
4	Space has been cleaned of excessive/accumulated sewage or other potentially harmful materials and does not impact workspace safety conditions (e.g. atmospheric conditions remain acceptable, no other acute exposures)			
5	Hazardous material lines and pipes (gas lines, chemical lines, etc.) have been properly isolated (e.g. blinded, blanked, valves locked out, disconnected, etc.)			
6	The work area is free of fire hazards and the work to be performed in the space will not create any fire hazards.			
7	Space can be entered by a ladder or other method that allows self-entry and self-rescue options (e.g. entrant is not lowered on a retrieval system, entrant can exit the space without assistance, etc.)			
8	Traffic and pedestrian controls have been adequately addressed.			
9	Space is clear of particulates (Dusts, fumes, mists) greater than permissible exposure limits.			
10	Space is clear of any engulfment or entanglement hazards.			
11	If this is an excavation, all hazards have been controlled/eliminated *(i.e. spoils away from edges, protective systems in place (if required), means of entry/exit available, Competent Person on site, etc.)*			
12	No other recognized safely hazards that could cause injury /death or that could impede exiting the space exist or have the potential to exist (e.g. visual hazards, falling objects, and slip/trip hazards).			

Step 7: Is the space clear of physical hazards (i.e. all questions above have been answered YES/NA)?

IF YES - Continue to Step 8

IF NO - STOP! If physical hazards cannot be eliminated, the space must be entered using an ENTRY PERMIT.

Step 8. Could your work activities create physical hazards while working in the space? Conditions to consider:

- ☐ Performing hot work inside the space
- ☐ Bringing hazardous chemicals inside space (solvents, paints, coatings, gas-powered motors, exposed electrical, etc.)
- ☐ Creating slip/trip hazards
- ☐ Using electrical equipment in wet conditions without GFI protection
- ☐ Opening up a pressurized system

IF NO: Go to **Step 9.**

IF YES: Can you eliminate those hazards? Describe how: _____

- If hazards can be eliminated go to **Step 9**
- If hazards cannot be eliminated. **STOP! The space must be entered using an ENTRY PERMIT.**

Step 9: Could hazardous atmospheric conditions develop due to work activities or external conditions? Conditions to consider:

- ☐ Opening a line/system that could release atmospheric hazards (gases, chemicals, etc.) into the space.
- ☐ Performing an activity that could create an oxygen deficient or enriched condition
- ☐ Performing an activity that could create a toxic atmospheric condition
- ☐ External conditions (e.g. vehicular exhausts) that could migrate into the space and create hazardous atmospheric conditions.

IF YES - Go to **Step 10**

IF NO - This is a **Non-Permit Space.** This means that this confined space does not contain, or have the potential to contain, any hazard capable of causing death or serious harm. Work may proceed without any additional precautions.

Step 10: Can air quality be maintained within acceptable limits by using continuous forced ventilation?

IF NO: **The space must be entered using an ENTRY PERMIT. SCBA respiratory protection must be worn.**

IF YES - This permit confined space may be entered using alternate procedures. Complete the Certificate of Safe Entry form below.

NON - PERMIT Authorization: Person Completing this Confined Space Evaluation Signs below:

_____ _____

Signature *Date*

CERTIFICATE OF SAFE ENTRY USING ALTERNATE PROCEDURES

REQUIRED ENTRY CONDITIONS:

1. Employee(s) may not enter the space until forced air ventilation has eliminated any hazardous atmosphere
2. The forced air ventilation will be used and directed as to ventilate the immediate areas where an employee is or will be present within the space and will continue uninterrupted until all employees have left the space
3. The air supply for forced air ventilation will be from a clean source and may not increase the hazards in the space
4. The atmosphere within the space will be continuously tested to ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere

ADDITIONAL ENTRY CONDITIONS *(check those that apply);*

☐ Safety Watch ☐ Other: _

REQUIRED PPE *(check those that apply):*

☐ Hard hat ☐ Gloves ☐ Safety glasses ☐ Goggles ☐ Chem. resistant suit ☐ Rain boots ☐ Other:

List all Entrants who will be entering this space:

Entrant 1 Name: _____ Entrant 2 Name: _____

Entrant 3 Name: _____ Entrant 4 Name: _____

Entrants initial here: _____

Person Completing this Confined Space Classification Signature: _____

Date: _____

NOTE: Should unexpected hazards or conditions arise, work shall stop, entrants shall evacuate, and the space shall be revaluated.