Confined Spaces

Confined Spaces

Overview

Confined and restricted spaces are work areas which are not intended for continuous employee occupancy, and which have by design, limited or restricted entry or exit. Typically, these areas are entered for cleaning, inspection, maintenance, repair or construction. The design of the confined areas or spaces may contain, produce or receive from an outside source, a dangerous accumulation of hazardous gases, vapours, mists, dusts, fumes, fog, or biological agents. Other hazards may result from a lack of, or enrichment of, oxygen or an accumulation of worker materials. A confined or restricted space can compromise the provision of first aid, evacuation, rescue or other emergency response service. Before entering any confined or restricted space, it must be assumed that a hazard may exist.

Restricted spaces in Division buildings include:

- Service Tunnels
- Air Handling Units
- Cubbyholes
- Spaces Above Fixed Ceilings
- Storage Areas Under Stages
- Cooling Towers

Confined spaces in Division buildings include:

- Sump Pits
- Catch Basins

Some areas **not** considered a confined or restricted space include:

- Gas Meter Room
- Photography Labs
- Boiler Rooms
- Chemical Storage Rooms
- General Storage Rooms

A worker is considered to have “entered” a confined or restricted space when the worker’s breathing zone crosses the plane of the confined or restricted space access. Each time a confined or restricted space entry is planned the procedures for working in that area should be

reviewed. Some gases and vapours are heavier than air and tend to collect in low-lying pockets, while others are lighter than air and accumulate in upper areas. Atmospheric testing in a confined space should be conducted when the worker has concerns about the air quality of the area. These procedures also apply to any employee entering a confined space to rescue a fellow employee. More than half the people who die in confined space incidents are trying to rescue someone else.

Typically, the only hazard for a restricted space is in the difficulty of getting into or out of the space, and all other potential hazards are non-existent or have been eliminated or controlled. Thus, restricted spaces are not subject to permitting, atmospheric testing and tending worker requirements of a confined space. However, a restricted space may become a confined space if conditions or work practices change.

Some of the hazards of confined spaces include:

- **Oxygen Deficient Atmospheres** - oxygen deficiency can be caused by oxidation (rusting) of a metal, any form of burning (including welding or brazing), absorption by soils or consumption by bacteria, and can cause brain damage and death.
- **Asphyxiant Gas** - inert gases can dilute or displace atmospheric oxygen to a level below that required for normal human functioning. Common examples of asphyxiant gases are carbon dioxide, ethane, helium, hydrogen, methane and nitrogen.
- **Toxic Atmospheres** - contain gases, vapours, dusts or fumes that have poisonous effects on the body. Cleaning, painting or welding may produce dangerous vapours or fumes. Gases such as hydrogen sulphide may leak into a confined space from gas pockets underground. Carbon monoxide may be generated in the space by an internal combustion engine. Methane may be created through the fermentation of plant material in the space.
- **Flammable or Explosive Atmospheres** - contain flammable gases, vapours or dusts that could be ignited by a spark or open flame. The risk of explosion increases if an oxygen-enriched atmosphere is present.
- **Size, Shape and Condition of Space** - walking or working surfaces can be uneven, slippery or blocked, making it difficult to move equipment and materials, blocking vision or creating a slip-and-fall hazard. Earth, sand and cement can become loosened and collapse inward when jarred.
- **Uncontrolled Introduction of Steam, Water or Other Liquids -** these could result from a bursting pipe or faulty valve.
- **Other Hazards** - these could result from the work being done, e.g., poor visibility, noise, extremes of temperature, manual handling, and moving parts.

Legislative Requirements

In the province of Alberta the Occupational Health and Safety Act, Regulation and Code is enforced by Alberta Human Resources and Employment - Workplace Health and Safety. This

legislation establishes the rights and obligations of employers, workers and the government, outlines the general requirements for employers, outlines administrative and policy issues and contains detailed technical requirements that support the Occupational Health and Safety Act, Regulation and Code.

Under legislation, employees have the right to know all the hazards that may be found in the confined space in which they will work and the obligation to know the precautions they are expected to take when entering, working in and exiting this confined space.

The Occupational Health and Safety Code (Part 5) defines a **restricted space** as an enclosed or partially enclosed space that is not designed or intended for continuous human occupancy, with a restricted, limited or impeded means of entry or exit because of its construction. Typically, the only hazard for a restricted space is in the difficulty of getting into or out of the space, and all other potential hazards are non-existent or have been eliminated or controlled. Thus, restricted spaces are not subject to the permitting, atmospheric testing and tending worker requirements of a confined space. However, a restricted space may become a confined space if conditions or work practices change.

A **confined space** is defined as an enclosed or partially enclosed space that is not designed or intended for continuous human occupancy, with a restricted means of entry or exit. It may become hazardous to a worker entering it because of:

- An atmosphere that is or may be injurious by reason of oxygen deficiency or enrichment, flammability, explosively, or toxicity;
- A condition or changing set of circumstances within the space that presents a potential for injury or illness; or
- The potential or inherent characteristics of an activity which can produce adverse or harmful consequences within the space.

For confined spaces, the Occupational Health and Safety Code, requires employers to have a *Confined Space Code of Practice* that provides a process for identifying all existing confined spaces in and around Division facilities and governs the practices and procedures for employees entering and working in confined spaces. The *Confined Space Code of Practice* must be maintained and periodically reviewed.

Confined Spaces

The Confined Spaces section of the Occupational Health & Safety Act, Regulation and Code outlines employer responsibilities to ensure employee safety when entering and working in a confined or restricted space.

An employer must:

- Have a competent person identify and complete a hazard assessment (task hazard analysis) of all confined and restricted spaces.

- Have a written confined space code of practice outlining the practices and procedures to be followed when workers enter and work in a confined space.
- Ensure that a worker assigned duties related to confined and restricted space entry is trained and that records are kept of that training.
- Ensure that the confined space is adequately ventilated and not exhausted to an occupied area. If it is not practical to ventilate the confined space, and there is a possibility of a compromised environment, tests must be carried out to determine hazards from oxygen deficiency and the presence of harmful substances, prior to entry and during the time that an employee is in the confined space.
- Ensure that if the confined space contains a harmful substance or has a deficiency of oxygen:
  (a) the worker is protected by personal protective equipment,
  (b) is attended by and is in communication with another worker at or near the entrance to the confined space, and
  (c) emergency response procedures are in place.
- Ensure that an entry permit system is used for work being done in inherently dangerous confined spaces (e.g., manholes) and when the type of work being done can make the space dangerous (e.g., welding).
- Ensure that all contractors are informed of Division requirements for working in confined and restricted spaces in Division facilities.

Confined and Restricted Spaces Compliance

Confined and Restricted Space entry is judged for compliance from a *pre-planning* and *precautionary* standard.

A government inspector may ask the following questions:

- Are all confined and restricted spaces at the workplace identified and clearly signed?
- Does each workplace have a written copy of the Division's *Confined and Restricted Space Code of Practice* (see Appendix I) and specific work practices and procedures that cover all confined and restricted spaces?
- Are employees who work in confined and/or restricted spaces competent?
- Is there adequate personal protective equipment (PPE) available?
- Is there an emergency response procedure in place related to the confined or restricted space?

If the answers to the above questions are YES, then there is compliance.

Principals and non-school based department heads demonstrate compliance by ensuring:

- They are familiar with the Division's *Confined and Restricted Space Code of Practice* and that site-specific work practices and procedures exist for each confined and restricted space identified at their workplace.
- Training is provided for employees who work in confined and restricted spaces.

Employees with assigned duties involving confined and restricted space entry are competent if they know:

- The Division's *Confined and Restricted Space Code of Practice*.
- The confined and restricted spaces present in the buildings in which they work.
- The precautions and procedures necessary for safe entry, work, exit and rescue.

Guidelines for Meeting Legislative Requirements

Identification

Although confined spaces come in many shapes and sizes, most can be classified in one of two ways:

1. Spaces that are open-topped and have depth such as pits, wells, vats, hoppers, bins, degreasers and kettles.
2. Spaces with narrow openings such as pipes, tunnels, silos, utility vaults, casings and sewers.

Some confined spaces are inherently dangerous, while others become dangerous as a result of the work that is performed inside. Examples of confined spaces that are inherently dangerous are:

- Manholes in contaminated ground (e.g., near leaking underground gasoline storage tanks).
- Manholes, pits or trenches connected to sewers, in which there can be a buildup of flammable and/or poisonous gasses and/or insufficient oxygen in the air.
- Tanks or pits containing sludges and other residues which, if disturbed, may partially fill the confined spaces with gases.
- Confined spaces that contain rotting vegetation, rusting metal work, and similar natural oxidation processes that may create an oxygen-deficient atmosphere.

Some examples of confined spaces in which the work being performed may make the area dangerous are:

- Some painting work or application of certain adhesives and liquids such as paint thinners. These can produce dangerous amounts of solvent vapour, which can cause dizziness and impair judgement. Such solvents are often flammable which may produce a risk of fire and/or explosion.
- Welding activities may generate toxic gasses or vapours.
- The use of gasoline or diesel engines may lead to a buildup of carbon monoxide gas.

Confined and restricted spaces at each worksite shall:

- Be identified and recorded on a floor plan of the facility and kept in the Occupational Health and Safety Document Binder at each site.
- Be clearly identified with appropriate signage.

A floor plan of each Division facility, identifying confined and restricted spaces, shall be kept by the Facilities and Maintenance Department.

A Confined Space Assessment Checklist is used to identify Division confined spaces (see Attachment I). The checklist is based on the definition and explanation guideline provided by Alberta Workplace Health and Safety.

The Division periodically makes changes to existing facilities and constructs new facilities. When this occurs the Facilities and Maintenance Department shall identify any new confined and restricted spaces that have been created and ensure that relevant staff are informed and that copies of facility floor plans are adjusted to reflect these changes. If a Division employee evaluates an area with this checklist and perceives the area to be a confined or restricted space, this should be brought to the attention of the principal or non-school based department head and in turn to the Facilities and Maintenance Department through the submission of a hazard report.

Code of Practice

The principal or non-school based department head shall:

- Have a copy of the facility floor plan which identifies all of the confined and restricted spaces in the facility. The floor plan should be kept on file in the Occupational Health and Safety section in Docushare.
- Ensure that all confined and restricted spaces in the facility are appropriately signed.
- Ensure that the Division *Confined and Restricted Space Code of Practice* and specific safe work practices and procedures are reviewed with all relevant employees (copies of these documents should be provided to these employees).

Training Requirements

Training shall be provided for all Division employees who will be involved in confined or restricted space work. The training shall be designed for the types of confined and restricted spaces found in Division buildings and include:

- Problems associated with normal entry and exit of these types of spaces.
- Examples of safe work practices and techniques.

- Appropriate emergency response procedures.

The Division is responsible to ensure that all employees involved in confined and restricted space work are trained and competent to work safely in these areas. A competent worker will have previous related work experience and/or can demonstrate an understanding of the requirements of the assigned duty, including knowledge of potential hazards and an adequate understanding of confined and restricted space work practices and procedures.

Re-training shall occur:

- On a regular basis to ensure employees are familiar with current safety practices and procedures. Level I permit holders shall receive retraining at least once every three years, while Level II permit holders shall receive retraining annually.
- When employment responsibilities change.
- When legislation changes.
- When a new type of confined or restricted space is created.
- When a new type of hazard is introduced or identified.

All confined and restricted space training records for Division employees will be retained by the Human Resources for as long as the worker is expected to perform work within confined and/or restricted spaces.

Implementation Process

Getting Started

Principals and non-school based department heads shall ensure that all confined and restricted spaces are identified at the workplace and proper signage is in place. The facilities and maintenance department shall make available a record of the confined and restricted spaces that exist in each Division facility.

Ongoing Activities

Principals and non-school based department heads shall:

1. Annually review the *Confined and Restricted Space Code of Practice* and specific practices and procedures with relevant staff.
2. Review with all staff the confined and restricted space emergency response guide (see Attachment IV in the *Confined and Restricted Space Code of Practice*).
3. Report to the Facilities and Maintenance Department, through the submission of a hazard report, any space where an alteration could result in the creation of a confined or restricted space.

4. Gain approval of the Facilities and Maintenance Department for the change of use of a confined or restricted space area.

The Facilities and Maintenance Department shall be responsible for:

- Identifying any new confined and restricted spaces created though new construction or renovations.
- Ensuring that these areas are properly signed.
- Updating facility floor plans.
- Ensure Docushare has updated facility floor plans identifying confined and restricted spaces.

Appendix I - Confined Space Code of Practice

Confined and Restricted Spaces

Confined and restricted spaces have a history of being potentially dangerous places to work, as hazards within them are often magnified. Both confined and restricted spaces are not intended for human occupancy and ongoing regular work activity. Typically, they are entered for cleaning, inspection, maintenance, repair or construction.

Confined and restricted spaces typically have a restricted means of access making it difficult to initiate a rescue or retrieve an injured worker. A worker may not be able to easily walk into the confined or restricted space, and the confined or restricted space may have to be accessed by ladders, stairways with a steep slope, narrow width or extreme length. There may also be physical obstructions such as bulk heads, collapsed material or machinery. A confined space may have poor ventilation and contain a hazardous atmosphere or energized equipment. Although a confined or restricted space may be safe to enter initially, the work activities may create a hazardous atmosphere.

Regulations and Guidelines

In the province of Alberta the Occupational Health and Safety Act, Regulation and Code is enforced by Alberta Human Resources and Employment - Workplace Health and Safety. This legislation establishes the rights and obligations of employers, workers and the government, outlines the general requirements for employers, outlines administrative and policy issues and contains detailed technical requirements that support the Occupational Health and Safety Act, Regulation and Code.

The Occupational Health and Safety Code (Part 5) defines a **restricted space** as an enclosed or partially enclosed space that is not designed or intended for continuous human occupancy, with a restricted, limited or impeded means of entry or exit because of its construction. Typically, the only hazard for a restricted space is in the difficulty of getting into or out of the space, and all other potential hazards are non-existent or have been eliminated or controlled. Thus, restricted spaces are not subject to the permitting, atmospheric testing and tending worker requirements of a confined space. However, a restricted space may become a confined space if conditions or work practices change.

A **confined space** is defined as an enclosed or partially enclosed space that is not designed or intended for continuous human occupancy, with a restricted means of entry or exit. It may become hazardous to a worker entering it because of:

- An atmosphere that is or may be injurious by reason of oxygen deficiency or enrichment, flammability, explosivity, or toxicity;

- A condition or changing set of circumstances within the space that presents a potential for injury or illness; or
- The potential or inherent characteristics of an activity which can produce adverse or harmful consequences within the space.

For confined spaces, the Occupational Health and Safety Code requires employers to have a *Confined Space Code of Practice* that provides a process for identifying all existing confined spaces in and around Division facilities. The *Confined Space Code of Practice* governs the practices and procedures for employees entering and working in confined spaces and must be maintained and periodically reviewed.

A *Confined Space Code of Practice* must address the following:

• Hazard Assessment

• Worker Training

• Entry Permit System

• Safety Precautions

• Protection from Hazardous Substances, Energy and Conditions

• Hot Work

• Unauthorized Entry

• Engine Exhaust Hazards

• Testing the Atmosphere

• Ventilation, Purging and Inerting

• Emergency Response

• Requiring a Tending Worker

• Retaining Records

The Occupational Health and Safety Act requires that the *Confined Space Code of Practice* be readily available to employees at the worksite and that individuals who have to enter confined spaces receive appropriate training.

Confined and Restricted Space Entry and Work Requirements

Hazard Assessment

The Occupational Health and Safety Code (Part 2) requires employers to assess a work site and identify existing or potential hazards before work begins. A hazard assessment must be thorough and comprehensive and must ensure that the hazards have not been missed or their importance underestimated. The employer must prepare a written hazard assessment that provides the results of the assessment and specify methods that will be used to eliminate or control the hazards. When practical, the workers shall be involved in this process.

Hazards shall be eliminated whenever it is reasonably practicable. If they cannot be eliminated, then either engineering controls, administrative controls, or personal protective equipment must be used to control the hazards identified.

Engineering controls include such things as the use of mechanical ventilation, installing a temporary work platform, substitution of a less toxic substance and installation of guardrails.

Administrative controls include such things as establishing practices and procedures, entry permits and worker training.

Personal Protective Equipment includes the use of such things as respiratory protection, safety glasses and hearing protection.

Hazard assessments of confined and restricted spaces should be periodically reviewed to ensure that the working conditions have not changed to create additional hazards. Workers must also realize that the nature of the work to be conducted in the confined or restricted space may introduce additional hazards. When this occurs, a hazard assessment must be completed to address these issues and establish appropriate controls. This can be completed using a Task Hazard Analysis Form (see Forms at the end of this section).

Worker Training

All Division employees who are required to work within a confined or restricted space must receive training on the Division's *Confined Space Code of Practice* and specific practices and procedures related to confined and restricted spaces in each facility (see Attachment III: Training Requirements). Employees must be able to demonstrate a satisfactory level of understanding of these requirements prior to entering and working in confined and restricted spaces.

Contractors shall have their own confined space code of practice and have developed safe work practices and procedures for their employees when performing work in a confined or restricted space. As part of the contract process contractors shall provide copies of their confined space

code of practice and employee safe work practices and procedures for working in confined or restricted spaces. They must also be familiar with the Division's *Confined Space Code of Practice* and applicable Health and Safety legislation. If there is variance between contractor and Division expectations the most stringent shall apply.

All confined and restricted space training records will be retained for as long as the employee is expected to perform work within confined spaces. Training records for Division employees will be maintained by the Human Resources Department.

Entry Permit System

The Division has developed a confined space entry permit system. An entry permit is a document that sets out the work to be done and the precautions to be taken. Copies of the Division's *Confined Space Entry Permits* can be found in this section under Forms. Level I Permits are site specific, while Level II Permits are provided to individuals who work in multiple Division facilities and have received advanced levels of training.

Please note that restricted spaces do not require an entry permit since they are not deemed to have any additional hazards besides restricted entry and access. If the restricted space becomes hazardous in any way, then the workers must follow all procedures and practices for working in a confined space.

Entry permits to perform inspections or minor maintenance are issued on a yearly basis for caretaking and maintenance staff who must enter confined and restricted spaces as part of their regular work routine. Caretaking Supervisors will issue the permits to caretaking staff, while a Manager from the Maintenance Department will issue the permits to maintenance staff. Caretaking and maintenance staff do not normally perform tasks in a confined or restricted space that would introduce additional hazards to the area. If they are going to perform any work in a confined or restricted space which could create additional hazards (e.g., soldering, welding), they must first obtain authorization from their immediate supervisor. The supervisor will determine if a new hazard assessment needs to be completed and a new entry permit issued.

Contractors working in Division facilities are responsible for issuing entry permits to their employees who are required to perform work in confined spaces. The contractor must maintain a record of these permits for a minimum of three years and is required to produce them for inspection by the Director of Business and Operations or when a Division audit occurs.

An integral part of the permit issuing process is to ensure the worker is familiar with the hazard analysis that has been completed for the relevant confined or restricted space. The Division has completed a hazard analysis for all confined and restricted spaces in light of the work normally performed in these areas by Division staff. Following is a list of the types of confined and restricted spaces found in Division facilities and the type of work typically performed in these areas by caretaking, maintenance and contract staff:

Restricted Spaces:

• Service Tunnels - for inspections and repairs.

• Air Handling Units - for inspections, repairs or to replace filters.

• Cubbyholes - to service or repair pumps or access equipment.

• Spaces Above Fixed Ceilings - to access pipes, ducts or wiring.

• Storage Areas Under Stages - to store or remove furniture or equipment.

• Cooling Towers - for inspections, servicing or repairs.

Please note that the above-noted restricted spaces can become confined spaces if conditions or work practices change.

Confined Spaces:

• Sump Pits - to clean out debris or repair motors.

• Catch Basins - to clean out debris.

Safety Precautions

Worker safety is of paramount importance to the Division. Only those workers who have received a valid permit are allowed to enter confined spaces. Before entering a specific confined or restricted space the worker must ensure that all of the controls outlined in the Task Hazard Analysis for that confined or restricted space are addressed. Such things as the use of appropriate personal protective equipment, a communication process (the presence of a tending worker or the informing of administrative staff or the use of the man-down lanyard) or a lock-out tag-out system are essential to the safety of the worker. A worker should never enter a confined or restricted space if there is a hazard present that is not identified on the Task Hazard Analysis or entry permit. Under these circumstances a new Task Hazard Analysis must be completed and a new entry permit obtained.

If the type of work to be performed in the confined or restricted space introduces additional hazards, extra precautions must be taken. The worker must obtain an amended entry permit which identifies any new hazards and also identifies the controls needed to address the new hazards.

Protection from Hazardous Substances, Energy and Conditions

The worker must be protected from hazardous substances, uncontrolled energy sources and hazardous conditions. The Task Hazard Analysis identifies the controls that need to be implemented to address these hazards. Examples of appropriate controls include such things as blanking or blinding, double blocking and bleeding, locking out sources of energy, de-energizing equipment and immobilizing or disconnecting all mechanical linkages.

Blanking involves inserting a physical barrier through the cross-section of pipe so that materials are prevented from blowing past that point.

Blinding involves disconnecting a pipe and attaching a physical barrier to the end, so that materials are prevented from flowing out the pipe.

Double blocking and bleeding involves the use of a three-valve system where a pipe has two closed valves and an open drain valve positioned between them. This prevents the material from flowing and re-directs it in case of a valve leak. The valves of a double block and bleed system need to be locked to ensure an acceptable level of safety.

Energized or pressurized equipment may move unexpectedly. Individuals working on or around energized equipment may be required to lock-out and tag-out the equipment. Refer to the Lock-Out Tag-Out Procedure in the Safe Work Practices section of the Health and Safety Manual.

Excessive noise may be produced based on the activities occurring within the confined or restricted space. Appropriate hearing protection should be worn if this is the case.

Objects from outside of the confined or restricted space may fall into the work area and injure the worker. If there is a potential of material falling into the confined or restricted space, controls must be implemented to prevent this from happening. This may include moving the material, installing guard rails, or any other means suitable to protect the worker.

Extreme temperatures may be hazardous to the worker. Based on the Division's assessment, it is likely that the only task that may be susceptible to elevated temperatures would be removing insulation from live steam lines. Workers performing this task should be alert for signs of heat stress. Appropriate clothing should be worn when working in extremely cold environments.

Slippery walking surfaces may be present in a confined or restricted space if water or other liquids are present. Workers need to be made aware of this danger in the Task Hazard Analysis and should work with caution in these areas.

Confined and restricted spaces may be difficult to enter or exit. In some cases a ladder may be required to enter and exit the confined or restricted space. In an emergency, workers may not be able to exit quickly. Workers need to be made aware of this problem.

Some confined and restricted spaces may be dark and additional lighting may be required to perform certain tasks.

Hot Work

Hot work refers to work where a flame, spark or other source of ignition may be produced during:

• Cutting, welding, burning, air gouging, riveting, drilling, grinding, or chipping.

• Using electrical equipment not classified for use in a hazardous location.

• The introduction of a combustion engine to a work process.

Hot work cannot be performed if one of the following conditions exists:

• A flammable substance is or may be in the atmosphere of the work area.

• A flammable substance is or may be stored, handled, or used in the location.

• The hot work is on or in an item of equipment that contains a flammable substance or its residue.

• The hot work is on a vessel that contains residue that may release a flammable gas or vapor when exposed to heat.

If cutting, welding, burning, air gouging, riveting, drilling, grinding, or chipping is to occur in a confined or restricted space, specific Safe Work Procedures must be prepared and controls implemented to ensure compliance with Section 169 (Hot Work) of the Occupational Health and Safety Code. Under no circumstances should hot work occur in a confined or restricted space until procedures are implemented to ensure that the hot work is completed safely.

Unauthorized Entry

Only those individuals who have received an entry permit and have reviewed the relevant Task Hazard Analysis are allowed to enter confined and restricted spaces in Division facilities. No one else should be allowed to enter these areas.

All confined spaces in Division facilities are identified and clearly signed as shown below.

All restricted spaces in Division facilities are identified and clearly signed as shown below.

Engine Exhaust Hazards

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Workers within a confined or restricted space must be protected from the hazard created by engine exhaust (e.g., idling vehicles, generators). The exhaust from an idling engine can enter a confined or restricted space and compromise the atmosphere. As part of the preliminary inspection of a confined or restricted space, the worker must ensure there is no danger of engine exhaust entering the work area.

Testing the Atmosphere

Potential atmospheric hazards are identified though the task hazard analysis process or on the entry permit and considers the work activity to be performed. Atmospheric testing in a confined or restricted space should be conducted when the worker has reasonable concerns about the air quality of the area. When this occurs, the worker should not enter the confined or restricted space until given clearance by their supervisor or until testing is completed by a competent person. A competent person will have equipment capable of identifying and monitoring the potential atmospheric hazards and understand the manufacturer's specifications for the safe use, handling and care of the monitor as well as the limitations of the testing equipment. **Continual testing is required when the type of work being performed in the confined space may compromise the air quality (e.g., hot work).**

Common atmospheric hazards in confined spaces include:

• Oxygen deficiency due to chemical (rusting of steel) or biological (microbiological growth) reactions that consume oxygen.

• Oxygen enrichment due to certain welding tasks.

• Flammable atmospheres due to the presence of acetylene, propane, or methane.

• Toxic atmospheres due to the production of carbon monoxide or other vapours or dusts generated during the work activities.

The following limits, as measured by the testing equipment, shall be used to determine when it is safe to work in a confined space:

• Oxygen content less than 20% or greater than 23%.

• Greater than 5% of the Lower Explosive Limit (LEL).

• Greater than 50% of the 8-hour Occupational Exposure Limit (OEL) for the substance present.

Work in a confined or restricted space must not commence or continue until testing indicates an acceptable atmosphere or until controls are implemented which protect the worker from exposure to the hazardous atmosphere (e.g., respirator). All test results must be recorded on an Atmospheric Testing Record Form which should be attached to the current entry permit.

Ventilation, Purging and Inerting

Ventilating means the use of mechanical ventilation to force outside air into the confined space while workers are working. The amount of ventilation required will be based on the volume of the confined space and the generation rate of the hazardous substance. The volume of the confined space is determined by the formula:

volume (m3) = length (m) x width (m) x height (m).

Since it will be difficult to determine the generation rate of the hazardous substance, a minimum of four air changes per hour of outside air must be introduced throughout the confined space. Care should be taken to ensure that all areas of the confined space are ventilated and that no dead spots remain.

If 50% of the 8-hour OEL is still exceeded, then additional ventilation may be required. If additional ventilation is not practical then appropriate personal protective equipment will be required. Work procedures should also be reviewed and revised and an additional Task Hazard Analysis completed to reflect the change in work procedures.

Purging means the introduction of a substance such as steam or water into a confined space to displace or flush out contaminants prior to entering the space.

Inerting refers to the introduction of an inert (unreactive) gas, such as nitrogen, into a confined space to completely displace oxygen. **If entering an inerted confined space, special safety precautions are required (e.g., self-contained breathing apparatus).** Inerting is used in vessels that previously contained flammable materials. By introducing an inert gas, like nitrogen, into the vessel the oxygen is displaced and a flammable mixture cannot be created. For a flammable mixture to burn or explode a source of oxygen and a source of ignition are required.

Emergency Response

In the event of an emergency situation involving an employee working in a confined or restricted space, the emergency response protocol is to **call 9-1-1**. The individual calling for 9-1-1 emergency services should specify that the emergency is related to a worker in a confined or restricted space. Ensure that someone is available outside of the facility to meet the emergency responders to direct them to the exact location of the injured worker.

Contractors are expected, as a minimum, to meet Alberta Workplace Health and Safety and/or Division requirements regarding the establishment of emergency procedures for their employees. This shall include details regarding the use of appropriate safety/rescue equipment for the work being performed.

See Attachment IV Emergency Response Guide for further detail.

Requiring a Tending Worker

Based on a review of the normal type of work activities (inspection and minor maintenance) performed by Division employees (caretaking and maintenance staff) in confined and restricted spaces, a tending worker is not usually required. However, prior to entering confined and restricted spaces that are isolated from regular staff traffic patterns, an employee should inform administrative staff of:

• The location of the confined or restricted space that they are about to enter.

• The duration of time they expect to spend in the confined or restricted space.

If the employee has not returned in the specific time, administrative staff can initiate a search for the individual. They should not enter the confined or restricted space while conducting this search. If an injury has occurred emergency services may need to be called.

If an employee has concerns regarding the atmospheric quality of a confined or restricted space, he/she should not enter the area and should inform their supervisor of the concern. The supervisor will determine if atmospheric testing is required. The supervisor's primary concern should be one of worker safety.

If atmospheric testing is conducted and it is found that one of the following conditions exist:

1. The oxygen content of the atmosphere inside the confined or restricted space is less than 20% by volume,

2. The oxygen content inside the confined or restricted space is greater than 23% by volume,

3. The concentration of a substance is greater than 5% of the Lower Explosive Limit, or

4. The concentration of a substance is greater than 50% of the 8-hour Occupational Exposure Limit

then the supervisor will arrange for a contractor to address the situation. Contractor employees who are required to enter a confined space under these conditions are required to wear appropriate personal protective equipment and will require the presence of a tending worker (safety-watch). A tending worker is also required when a hazard is identified during the hazard assessment process where the hazard cannot be effectively eliminated or controlled.

The tending worker is responsible to:

• Ensure that the Entry Permit and Task Hazard Analysis have been completed.

• Know the potential hazards of the confined space.

• Document the time of entry and exit for all worker(s) in the confined space.

• Ensure unauthorized personnel stay clear of the area and do not enter the confined space.

• Remain in communication with the worker(s) in the confined space.

• Order the evacuation of the confined space if there is a concern of an unsafe condition.

• Stay in the area of the confined space until all workers, who are able to, have left the confined space.

• Refrain from entering the confined space under any circumstances.

• Summon 911 assistance in serious situations (e.g., injury accident, loss of communication).

• Remain available to direct emergency services to the accident scene.

For a restricted space, a tending worker is not required; however, a competent worker must be in communication with the worker in the restricted space.

Contractor employees who are required to work in Division confined and/or restricted spaces should have a tending worker present as required by Section 56 of Occupational Health and Safety Code. This is especially critical when the type of work being performed introduces additional hazards to the area or when the work is being performed during times when Division employees are not normally in the facility.

Retaining of Records

The contractor will retain records of their employees' entry permits, atmospheric testing data and other applicable information related to confined and restricted space entry, and immediately submit these records to the Facilities and Maintenance Department upon request or audit. All records will be retained for a minimum of three years.

Confined Space Entry Summary

A summary of many of the requirements outlined in the preceding sections is provided in Attachment V: Confined Space Entry Summary.

Identifying Confined and Restricted Spaces

Confined and restricted spaces at each worksite shall:

• Be identified and recorded on a floor plan of the facility and kept in the Occupational Health and Safety Document Binder at each site.

• Be clearly identified with appropriate signage.

A floor plan of each Division facility, identifying confined and restricted spaces, shall be kept by the Maintenance Department.

A Confined Space Assessment Checklist is used to identify Division confined spaces (see Attachment I). The checklist is based on the definition and explanation guidelines provided by Alberta Workplace Health and Safety.

The Division periodically makes changes to existing facilities and constructs new facilities. When this occurs the construction and maintenance department shall:

• Identify any new confined and restricted spaces that have been created.

• Ensure that relevant staff are informed.

• Ensure that copies of facility floor plans are adjusted to reflect these changes.

• Ensure that updated copies of the floor plans are provided to the Principal or non-school based department head as well as all confined space manual holders.

If a Division employee evaluates an area with this checklist and perceives the area to be a confined or restricted space, this should be brought to the attention of the Principal or non-school based department head and in turn to the Construction Department and Maintenance Department through the submission of a Hazard Report Form using EARS.

Types of Confined Spaces

Although confined spaces come in many shapes and sizes, most can be classified in one of two ways:

1. Spaces that are open-topped and have depth such as pits and catch basins.

2. Spaces with narrow openings such as tunnels, crawl spaces, utility vaults and cubbyholes.

Some confined spaces are inherently dangerous, while others become dangerous as a result of the work that is performed inside. Examples of confined spaces that are inherently dangerous are:

• Manholes in contaminated ground (e.g., near leaking underground gasoline storage tanks).

• Manholes, pits or trenches connected to sewers, in which there can be a buildup of flammable and/or poisonous gasses and/or insufficient oxygen in the air.

• Tanks or pits containing sludges and other residues which, if disturbed, may partially fill the confined spaces with gases.

• Confined spaces that contain rotting vegetation, rusting metal work, and similar natural oxidation processes that may create an oxygen-deficient atmosphere.

Some examples of the work performed that may make a confined space dangerous are:

• Some painting work or application of certain adhesives and liquids such as paint thinners. These can produce dangerous amounts of solvent vapour, which can cause dizziness and impair judgement. Such solvents are often flammable which may produce a risk of fire and/or explosion.

• Welding activities may generate toxic gases or vapours.

• The use of gasoline or diesel engines may lead to a buildup of carbon monoxide gas.

Confined and Restricted Spaces in the Division and Associated Hazards

The Division has very few confined and restricted spaces that are inherently dangerous. Based on the assessment process the following areas are considered to be confined and restricted spaces in Division facilities:

<u>Restricted Spaces:</u>

• Service Tunnels

• Air Handling Units

• Cubbyholes

• Spaces Above Fixed Ceilings

• Cooling Towers

• Storage Areas Under Stages

Confined Spaces:

• Sump Pits

• Catch Basins

Attachment II displays photographs of a variety of confined and restricted spaces observed during the assessment of Division facilities.

Service Tunnels

The service tunnels in Division facilities are primarily designed for mechanical services such as steam, water and electrical lines. Lighting is provided in some of these tunnels. Some tunnels have a restricted means of access and may require the use of a ladder. Some tunnels may have piping or equipment obstructing the entrance.

Service tunnels are restricted spaces not designed for continuous human occupancy. They often have a restricted means of entry or exit which could compromise the provision of first aid, evacuation or rescue. Division employees are required to enter these areas for inspection and minor maintenance purposes from time to time.

The risk of a hazardous atmosphere in tunnels is minimal unless created by the nature of the work activity. However, a worker may become injured in the tunnel due to slips, trips, falls, or impact injuries. Depending on the age of the school, some tunnels may have insulation containing asbestos present on mechanical fittings or cement pipes which contain asbestos. There is also a potential for rodent nests in these areas which could produce various bio-hazardous concerns such as hantavirus. Some tunnels are quite long and many of them have numerous turns preventing a tending worker (if required) from maintaining visual contact.

Review Task Hazard Analysis for Service Tunnels (See Section on Safe Work Practices).

Air Handling Units

An air handling unit is primarily designed for the distribution of fresh air to all occupied spaces in a facility. Division employees are required to enter these spaces routinely for inspection purposes and to change filters. If other maintenance or repairs are required then a contractor could be used to perform the work.

Air handling units are restricted spaces not designed for continuous human occupancy. They often have a restricted means of entry or exit which could compromise the provision of first aid, evacuation or rescue.

The risk of a dangerous atmosphere is minimal, unless created by the nature of the work activity. However, a worker may become injured in the air handling unit due to energized equipment, slips, trips, falls, or impact injuries. Depending on where the work is being performed, the air handling unit may accidentally energize and seriously injure the worker. It is essential that a lock-out tag-out system be used when performing these tasks.

Review Task Hazard Analysis for working on Air Handling Units (See Section on Safe Work Practices).

Cubbyholes

Cubbyholes are enclosed areas. Division employees typically enter these areas to store or retrieve materials or equipment. Some of these areas may contain mechanical equipment and if maintenance or repairs are required then a contractor would be used to perform the work.

The cubbyholes under stairs are restricted spaces not designed for continuous human occupancy. They often have a restricted means of entry or exit which could compromise the provision of first aid, evacuation or rescue.

The risk of a dangerous atmosphere in cubbyholes is minimal unless created by the nature of the work activity. However, a worker may become injured in the cubbyhole due to slips, trips, falls or impact injuries.

Review Task Hazard Analysis for Cubbyholes (See Section on Safe Work Practices).

Spaces Above Ceilings

The spaces above ceilings are primarily designed for electrical and mechanical equipment and return air plenums. Division employees do not normally enter these areas, but may look into these areas to perform a visual inspection.

The ceiling spaces above hard ceilings are restricted spaces not designed for continuous human occupancy. They often have a restricted means of entry or exit which could compromise the provision of first aid, evacuation or rescue.

The risk of a dangerous atmosphere is minimal unless created by the nature of the work activity. Depending on the age of the facility, some spaces may have asbestos-containing materials such as insulation on mechanical fittings, cement pipes, sprayed-on insulation or stippled coatings. There is also a potential for rodent nests in these areas which could produce bio-hazardous concerns such as hantavirus. A worker may also become injured due to trips, falls, or impact injuries.

Review Task Hazard Analysis for Spaces Above Fixed Ceilings (See Section on Safe Work Practices).

Storage Areas Under Stages

Under stage areas are typically used to store chairs and gym equipment on movable carts. Division employees do not normally enter these areas since the equipment is typically on rolling carts that can be reached from outside of the area. However, Division employees may be required

to enter these areas if the carts become jammed, when equipment falls off of a cart, or when lights need bulbs changed. Contractors may enter these areas to test fire alarm systems or heating systems.

The storage areas under stages are restricted spaces not designed for continuous human occupancy. They often have a restricted means of entry or exit which could compromise the provision of first aid, evacuation or rescue.

The risk of a dangerous atmosphere is minimal since there are typically no natural gas lines or hazardous materials in the area. However, a worker may become injured due to trips, falls, or impact injuries.

Review Task Hazard Analysis for Storage Areas Under Stages (See Section on Safe Work Practices).

Cooling Towers

The cooling towers in Division facilities are mechanical systems primarily designed for cooling the temperature in the facility. Division employees are required to enter these areas routinely for inspection purposes. If maintenance or repairs are required then a contractor could be used to perform the work.

Cooling towers are restricted spaces not designed for continuous human occupancy. They often have a restricted means of entry or exit which could compromise the provision of first aid, evacuation or rescue.

The risk of a dangerous atmosphere is minimal unless created by the nature of the work activity. However, a worker may become injured in the cooling tower due to energized equipment, slips, trips, falls or impact injuries. Depending on where the work is being performed, the cooling tower may accidentally energize and seriously injure the worker. It is essential that a lock-out tag-out system be used when completing this task.

Review Task Hazard Analysis for Cooling Towers (See Section on Safe Work Practices).

Sump Pits

Sump pits are drainage systems that are designed to collect excess water that may accumulate due to seepage or drainage. These systems sometimes include pumps which are used to expel the excess water. Division employees typically do not enter these areas. If maintenance or repairs are required then a contractor would be used to perform the work.

Sump pits are confined spaces not designed for continuous human occupancy. They often have a restricted means of entry or exit which could compromise the provision of first aid, evacuation or rescue.

There may be a risk of a dangerous atmosphere in a sump pit due to:

• The drainage and collection of other fluids such as gasoline, oil, solvents etc.

• Stagnant water with biological growth.

• Gases or vehicle exhaust that may collect as the sump pit is below grade.

Review Task Hazard Analysis for Sump Pits (See Section on Safe Work Practices).

Catch Basins

Catch basins are collection areas at the entrance to a sewer designed to keep out large or obstructive matter. Division employees may have to reach into these areas to remove debris which is obstructing the drainage.

Catch basins are confined spaces not designed for continuous human occupancy. They often have a restricted means of entry or exit which could compromise the provision of first aid, evacuation or rescue.

There may be a risk of a dangerous atmosphere in a catch basin due to the collection of:

• Organic matter that may rot or decompose.

• Other fluids that may have spilled such as oils, antifreeze, paints, solvent, etc.

• Gases or vehicle exhaust that may collect as the catch basin is below grade.

Review Task Hazard Analysis for Catch Basins (See Section on Safe Work Practices).

Areas Not Considered to be Confined or Restricted Spaces in Division Facilities

The following spaces are **not** considered to be confined or restricted spaces as they are designed to accommodate regular work activity:

- Gas Meter Rooms
- Boiler Rooms
- Photography Labs
- Chemical Storage Rooms
- General Storage Rooms
- Clay Traps
- Grease Traps
- Paint Finishing Rooms

Attachment I: Confined Space Assessment Checklist

Facility: _____ Date: _____

Location in Facility: _____ Originator: _____

Criteria for Identifying a Confined Space:

1. The area is enclosed or partially enclosed (e.g., service tunnel, air handling unit, cubbyhole, space above fixed ceiling, storage area under stage, cooling tower, sump pit, catch basin). Yes/No

   Describe: _____

   _____

2. Area is not designed or intended for continuous human occupancy. The area is only entered for such activities as cleaning, inspection, maintenance, repair or construction activities. Yes/No

3. The area has a restricted means of entry or access (e.g., access by ladders, stairways, sloped walkway, narrow entrance, bulkheads, collapsed materials). Yes/No

   Describe: _____

   _____

4. The area is hazardous to the worker due to:

   - Location (e.g., below grade, restricted height, isolated) Yes/No
   - Compromised emergency response service Yes/No
   - Materials or substances present (e.g., stored items, low level pipes) Yes/No
     Describe: _____
   - Hazardous atmosphere (e.g., poor natural ventilation, oxidation) Yes/No
     Describe: _____
   - Hazardous atmosphere due to work activities (e.g., hot work, paint supplies) Yes/No
     Describe: _____
   - Construction of the area (e.g., unstable soil or materials, depth) Yes/No

Additional information: _____

_____

_____

If there was a positive (yes) response in each of the four sections above, the area would be considered a confined space. The principal or non-school based department head should be notified and they in turn should notify the Facilities and Maintenance Department through the submission of a Hazard Report Form using SchoolWorks.

Attachment II: Sample Photographs of Confined and Restricted Spaces

Photograph 1: Access to tunnel where a ladder is required – Restricted Space

Photograph 2: Floor access to a tunnel – Restricted Space

Photograph 3: Access panel to air handling unit – Restricted Space

Photograph 4: Inside of an air handling unit where the filters are changed – Restricted Space

Photograph 5: Cubby hole – Restricted Space

Photograph 6: Cubby hole – Restricted Space

Photograph 7: Space above fixed ceiling – Restricted Space

Photograph 8: Storage under stage – Restricted Space

Photograph 9: Sump pit – Confined Space

Photograph 10: Catch basin – Confined Space

Attachment III: Training Requirements

All individuals involved with working in a confined space area must receive training related to their roles and responsibilities.

Employees

All Division employees involved with working in a confined space must receive training with respect to the Division's Confined and Restricted Space Code of Practice and applicable Health and Safety Legislation. The following areas shall be addressed in this training:

- Confined space definition.
- Types of confined spaces in the Division.
- Hazards within confined spaces.
- Division's Task Hazard Analysis for confined spaces.
- Entry Permit System.
- Atmospheric testing equipment.
- Worker role and responsibilities.
- Required record keeping.
- Man-down System.
- Emergency response.

Supervisors

Division employees who supervise contractors or issue entry permits must receive additional training with respect to their specific role and responsibilities. The following areas shall be addressed in this training:

- Entry Permit Issuing.
- Ensuring contractors have appropriate confined space procedures in place.
- Confined space hazard assessment process (identifying and controlling hazards).

Contractors

The Division has an obligation to ensure that contractors who perform work in confined spaces meet or exceed applicable Health and Safety Legislation requirements. This requires that they have developed a written Confined and Restricted Space Code of Practice that addresses the following areas:

- Hazard Assessment
- Worker Training
- Entry Permit System
- Safety Precautions

- Protection from Hazardous Substances, Energy and Conditions
- Hot Work
- Unauthorized Entry
- Engine Exhaust Hazards
- Testing the Atmosphere
- Ventilation, Purging and Inerting
- Emergency Response
- Requiring a Tending Worker
- Entry and Exit Documentation
- Retaining Records

Depending upon the nature of the work being performed, contractors shall be required to provide other documentation, such as:

- Respiratory Protection Code of Practice
- Hearing Protection Code of Practice
- Personal Protective Equipment Code of Practice

Attachment IV: Emergency Response Guide

The Division has established a protocol for responding to an emergency that involves the rescue or evacuation of a worker from a confined or restricted space. This protocol will be reviewed with all Division employees. The Division protocol for emergency situations where an employee working in a confined or restricted space is injured is as follows:

- Call 911 for Emergency Service response.
- Specify that the emergency is related to a worker injured in a confined or restricted space.
- Remain available to direct the Emergency Service responders to the exact location of the injured worker.
- Other employees should **not** enter the confined or restricted space to attempt rescue.
- Complete an Accident Report and First Aid Record Form and submit it through SchoolWorks.

Contractors working in Division facilities are required to have developed their own emergency response protocol in relationship to confined and restricted spaces. This protocol must meet Alberta Occupational Health and Safety requirements and address the following areas:

- Identification of potential emergencies based on hazards assessed.
- Specific responses to identified potential emergencies.
- Location of emergency equipment (fire extinguishers, first aid, etc.).
- List of workers trained in protocol and use of emergency equipment.
- Location and access to emergency facilities (fire station, ambulance, hospital, etc.).
- Alarm and emergency communication requirements.
- Procedures for rescue and evacuation.
- Designated rescue and evacuation workers.

Attachment V: Confined Space Entry Summary

Supervisor's Responsibilities

1. Ensure that employees who are required to work in confined spaces are appropriately trained.
2. Issue Entry Permits to employees required to work in confined spaces and maintain a record of entry permit holders.
3. Ensure that appropriate personal protective equipment and safety equipment is available for workers entering confined spaces.
4. Ensure that the Division's Code of Practice for Confined Spaces is followed by those entering confined spaces.
5. Respond to concerns expressed by employees regarding atmospheric conditions in a confined space. This may or may not involve atmospheric testing.

Worker's Responsibilities

Pre-Entry Planning

1. Review the Entry Permit.
2. Review the type of work and required tasks.
3. Identify the tools and equipment required for the task prior to entering the confined space. Ensure all tools and equipment are operating according to manufacturer's specifications.
4. Review the existing Task Hazard Analysis for the confined space and understand the potential hazards.
5. Complete a new Task Hazard Analysis if a new hazard will be introduced due to the work being performed.
6. Identify and acquire appropriate personal protective equipment.
7. Collect and obtain all Safety Data Sheets (SDS) for products that are going to be used within the confined space.
8. Review established communication procedures.
9. Review emergency response procedures.
10. Ensure a properly trained tending worker is available at the entrance if required by the conditions and the type of work identified in the Confined Space Code of Practice.

Entry and Work

1. Ensure that appropriate controls are implemented (e.g., inform proper authority of entry, wear appropriate personal protective equipment, use man-down system, etc.).
2. Leave the confined space if conditions change or if symptoms of overexposure to atmospheric hazards are experienced.
3. Complete a new Task Hazard Analysis if a new hazard(s) is identified.

Tending Worker Responsibilities

Contractor employees required to enter confined spaces may require a tending worker depending on conditions.

1. Ensure that the Entry Permit and Task Hazard Analysis have been completed.
2. Know the potential hazards of the confined space.
3. Document the time of entry and exit for all worker(s) in the confined space.
4. Ensure unauthorized personnel stay clear of the area and do not enter the confined space.
5. Remain in communication with the worker(s) in the confined space.
6. Order the evacuation of the confined space if there is a concern of an unsafe condition.
7. Stay in the area of the confined space until all workers, who are able to, have left the confined space.
8. Refrain from entering the confined space under any circumstances.
9. Summon 911 assistance in serious situations (e.g., accident injury, loss of communication).
10. Remain available to direct emergency services to the accident scene.

Summoning Emergency Assistance

All staff should be aware of the protocol for summoning emergency assistance in situations involving confined spaces.

- Call 911 for Emergency Service response.
- Specify that the emergency is related to a worker injured in a confined space.
- Remain available to direct the Emergency Service responders to the exact location of the injured worker.
- Other employees should **not** enter the confined space to attempt rescue.
- Complete an Accident Report and First Aid Record Form and submit it through SchoolWorks.

Forms

Confined Space Entry Permit (Level I)

Name: _____ School or Facility: _____

Duration of Permit Start Date: _____ Finish Date: _____
day/month/year day/month/year

Permit No.: _____ Permit Issuer: _____

This entry permit is specific to the individual and facility identified above. Entry is authorized only for inspection purposes or to perform minor maintenance. By definition, minor maintenance activities do not introduce additional hazards to the confined space. Confined spaces in the facility are identified on the floor plan map provided to the school by the Division (on file in the Occupational Health and Safety Document Binder).

Type of Confined Space		**Safety Precautions/Equipment Required** (see list below)
1. Sump Pit	☐	_____
2. Catch Basin	☐	_____

Relevant Task Hazard Analysis provided: ☐ Yes ☐ No

Safety Precautions/Personal Protective Equipment

A. Protective Gloves
B. Safety Glasses
C. Dust Mask
D. Hard Hat
E. Hearing Protection
F. Protective Footwear
G. Fire Extinguisher
H. Flashlight
I. Signs Posted
J. Lock-Out Tag-Out Procedure
K. Communications Process
L. Man-down System

If permit holder has concerns regarding atmospheric conditions when entering a confined space, he/she should consult with their supervisor for direction before entry.

Signature of Permit Holder: _____

Confined Space Entry Permit (Level II)

Name: _____ Valid for all Division Facilities

Duration of Permit Start Date: _____ Finish Date: _____
day/month/year day/month/year

Permit No.: _____ Permit Issuer: _____

Permit holders are required to have received advanced levels of Division training related to confined space entry. This entry permit allows the above named individual to enter confined spaces identified below in any Division facility. Entry is authorized only for inspection purposes or to perform minor maintenance. By definition, minor maintenance activities do not introduce additional hazards to the confined space. Confined spaces in the facility are identified on the floor plan map provided to the school by the Division (on file in the Occupational Health and Safety Document Binder).

Type of Confined Space		**Safety Precautions/Equipment Required** (see list below)
1. Sump Pit	☐	_____
2. Catch Basin	☐	_____

Relevant Task Hazard Analysis provided: ☐ Yes ☐ No

Safety Precautions/Personal Protective Equipment

A. Protective Gloves
B. Safety Glasses
C. Dust Mask
D. Hard Hat
E. Hearing Protection
F. Protective Footwear
G. Fire Extinguisher
H. Flashlight
I. Signs Posted
J. Lock-Out Tag-Out Procedure
K. Communications Process
L. Man-down System

If the permit holder has concerns regarding atmospheric conditions when entering a confined space, he/she should consult with their supervisor for direction before entry.

Signature of Permit Holder: _____

Atmospheric Testing Record Form

School or Facility: _____ Date and Time: _____

Type of Confined Space: _____

Location of Confined Space: _____

Reason for Testing: _____

Person Conducting Testing: _____

Testing Instrument Used: _____

Substance	Test Conducted	Results	Action
Oxygen	Percentage Level		☐ Entry Okay ☐ Do Not Enter ☐ Retest Before Entry
	Lower Explosive Limit (LEL)		☐ Entry Okay ☐ Do Not Enter ☐ Retest Before Entry
	Occupational Exposure Limit (OEL)		☐ Entry Okay ☐ Do Not Enter ☐ Retest Before Entry

If recommended action above is for retesting, record retesting data below.

Date and Time: _____

Person Conducting Testing: _____

Testing Instrument Used: _____

Substance	Test Conducted	Results	Action
Oxygen	Percentage Level		☐ Entry Okay ☐ Do Not Enter
	Lower Explosive Limit (LEL)		☐ Entry Okay ☐ Do Not Enter
	Occupational Exposure Limit (OEL)		☐ Entry Okay ☐ Do Not Enter

If the results of the testing are less than or exceed acceptable limits (see Code of Practice for Confined Spaces - Testing the Atmosphere), then no Division employee shall enter the area and a contractor should be brought in to address the issue. If the initial results are borderline, retesting should occur before any entry is attempted by an employee. If retesting results are still borderline or exceed acceptable limits, a contractor should be employed.

Task Hazard Analysis

To be completed by principals or non-school based department heads or their designates, with relevant employees.

Assessment Team Member(s):_____ Date:_____

Task	***Title***	
HAZARDS	**Specifics**	**Possible Consequences**
Physical	•	•
Chemical		
Biological		
CONTROLS	**Do**	
	Don't •	