



**HUMAN RESOURCES**  
ENVIRONMENTAL HEALTH AND SAFETY

# **CONFINED SPACES MANAGEMENT PROGRAM**

Date Created: September 2008  
Date Revised: November 2020



## Revision History

<b>Revision Number</b>	<b>Document Section</b>	<b>Details of Amendments</b>	<b>Date</b>
0		New Program	September 2008
1	All	Full Review/AODA revisions	November 2020



## Table of Contents

<b>1.0</b>	<b>PURPOSE AND SCOPE .....</b>	<b>5</b>
1.1	PURPOSE.....	5
1.2	SCOPE.....	5
1.3	PROGRAM ELEMENTS .....	5
<b>2.0</b>	<b>REGULATORY REQUIREMENTS AND REFERENCES .....</b>	<b>6</b>
<b>3.0</b>	<b>BACKGROUND AND GLOSSARY.....</b>	<b>7</b>
3.1	BACKGROUND.....	7
3.2	GLOSSARY.....	8
<b>4.0</b>	<b>RESPONSIBILITIES.....</b>	<b>11</b>
4.1	DIRECTOR, HUMAN RESOURCES (HEALTH, SAFETY AND WELLNESS) .....	11
4.2	MANAGER, OCCUPATIONAL HYGIENE AND SAFETY AND MANAGER, AGRICULTURAL & VETERINARY SAFETY11	
4.3	DIRECTORS AND MANAGERS WITH RESPONSIBILITY FOR UNIVERSITY FACILITIES.....	12
4.4	CONFINED SPACE SUPERVISOR .....	12
4.5	ENTRY SUPERVISOR.....	13
4.6	ATTENDANT.....	13
4.7	RESCUE-TEAM MEMBERS .....	14
4.8	AUTHORIZED ENTRANTS .....	14
4.9	CONTRACTORS.....	15
<b>5.0</b>	<b>CONFINED SPACE IDENTIFICATION AND INVENTORY .....</b>	<b>16</b>
5.1	IDENTIFICATION .....	16
5.2	INVENTORY .....	16
5.3	UPDATING INVENTORIES .....	17
<b>6.0</b>	<b>HAZARD ASSESSMENT .....</b>	<b>18</b>
<b>7.0</b>	<b>CONFINED SPACE PLAN .....</b>	<b>19</b>
<b>8.0</b>	<b>ATTENDANT AND ON-SITE RESCUE.....</b>	<b>21</b>
8.1	ATTENDANT.....	21
8.2	ON-SITE RESCUE (SEE APPENDIX F).....	21
<b>9.0</b>	<b>ENTRY PERMIT SYSTEM.....</b>	<b>22</b>
<b>10.0</b>	<b>ATMOSPHERIC TESTING OF CONFINED SPACES .....</b>	<b>23</b>



<b>11.0</b>	<b>GENERAL AND PLAN-SPECIFIC TRAINING.....</b>	<b>24</b>
11.1	UNIVERSITY EMPLOYEES .....	24
11.2	CONTRACTORS.....	25
<b>12.0</b>	<b>ACCESS CONTROL .....</b>	<b>26</b>
<b>13.0</b>	<b>CO-ORDINATION DOCUMENT .....</b>	<b>27</b>
<b>14.0</b>	<b>CONFINED SPACE WORK – ENTRY PROCEDURE .....</b>	<b>28</b>
<b>15.0</b>	<b>CONFINED SPACE WORK – ENTRY PROCEDURE FOR CONTRACTORS .....</b>	<b>29</b>
15.1	MULTI-EMPLOYER INVOLVEMENT (INCLUDING THE UNIVERSITY OF GUELPH) .....	29
15.2	SINGLE-EMPLOYER INVOLVEMENT.....	29
<b>16.0</b>	<b>PROGRAM AUDIT AND REVIEW .....</b>	<b>31</b>
16.1	PROGRAM AUDIT .....	31
16.2	PROGRAM REVIEW .....	31
<b>APPENDICES.....</b>		<b>32</b>
	APPENDIX A – CONFINED SPACE INVENTORY.....	32
	APPENDIX B – CONFINED SPACE HAZARD ASSESSMENT .....	33
	APPENDIX C – CONFINED SPACE ENTRY PLAN.....	34
	APPENDIX D – CO-ORDINATION DOCUMENT FOR CONFINED SPACES .....	35
	APPENDIX E - PROVISION OF DOCUMENTS AND ACKNOWLEDGEMENT OF COMPLIANCE FOR ENTRY/WORK IN CONFINED SPACE.....	36
	APPENDIX F – CONFINED SPACE ENTRY PERMIT.....	37
	APPENDIX G – DANGER SIGN.....	38

## **1.0 PURPOSE AND SCOPE**

### **1.1 Purpose**

Work in confined spaces can present a significant risk for workers performing such work when appropriate precautions are not taken. To protect workers entering, working in or working near confined spaces, the University requires that such work is performed following very stringent procedures. To support this, the University has established a Confined Spaces Management Program.

The University's Confined Spaces Management Program establishes a comprehensive system to actively manage and rigorously control all work done in confined spaces. The program is written in accordance with the requirements of Ontario Regulation 632/05, Confined Spaces made under the Occupational Health and Safety Act of Ontario and the Ministry of Labour's Confined Spaces Guideline.

### **1.2 Scope**

The Confined Spaces Management Program applies to all confined spaces in buildings/structures/properties owned or leased by the University of Guelph, and to all faculty, staff and students of the University, and contractors who enter or work in a confined space. As a policy, Physical Resources Staff at the Guelph Main Campus shall not enter a confined space to perform any type of work. The Confined Spaces Management Program does not apply to work in confined spaces that are under the jurisdiction of a constructor.

### **1.3 Program Elements**

The major elements of the Confined Spaces Management Program are:

- 1) documentation and communication of roles and responsibilities;
- 2) written record identifying all confined spaces (types and locations) and confined space supervisors for University buildings/structures/properties;
- 3) identification and assessment of health and safety hazards in each confined space;
- 4) written plan for the control or elimination of hazards identified in the assessment;
- 5) provision of an entry permit system;
- 6) provision of appropriate training to University of Guelph workers and information to contractors who enter and/or work in confined spaces;
- 7) control of access to confined spaces;
- 8) provision of a co-ordination document for confined spaces with multi-employer involvement;
- 9) work performed by University of Guelph workers in confined spaces;
- 10) contract work performed in confined spaces;
- 11) provision of an attendant and written on-site rescue procedures for confined spaces;
- 12) atmospheric testing of confined spaces;
- 13) program audit and review.



## 2.0 REGULATORY REQUIREMENTS AND REFERENCES

The Confined Spaces Management Program is written in accordance with the requirements of **Ontario Regulation 632/05, *Confined Spaces*** made under the Occupational Health and Safety Act of Ontario and the Ontario Ministry of Labour, Training and Skills Development's Confined Spaces Guideline.

## 3.0 BACKGROUND AND GLOSSARY

### 3.1 BACKGROUND

A confined space is defined as a fully or partially enclosed space,

- a) that is not both designed and constructed for continuous human occupancy, and
- b) in which atmospheric hazards may occur because of its construction, location or contents or because of work that is done in it.

Confined spaces may include: storage tanks, process vessels, boilers, water towers, silos, sewer lines, utility service chambers and open top spaces such as pits and tubs.

Confined space accidents do not happen very often, but when they do, they are quite often fatal. Confined spaces vary widely in their physical characteristics (size and shape) and in the reasons for which they are entered. Some typical reasons for entering a confined space include:

- inspection and maintenance of equipment and machinery
- checking and reading meters, gauges, dials, charts and other indicators
- repair work, including welding operations
- maintenance activities such as abrasive blasting or application of paints or other coatings
- installing, inspecting, repairing and replacing valves, piping, pumps, motors, etc. in underground vaults and pits
- cleaning activities to remove sludge and other waste materials
- installing, splicing, repairing, and inspecting electric, telephone and fibre optic cables

Activities which seem safe when conducted in an open space can become quite hazardous when performed in a confined space. The hazards in confined spaces may be broadly divided into two categories: atmospheric hazards and physical hazards.

The three general classes of atmospheric hazards include:

- oxygen-deficiency or oxygen-enrichment
- accumulation of flammable, combustible or explosive agents
- accumulation of “toxic” atmospheric contaminants, including gases, vapours, fumes, dusts or mists

As per the definition of a confined space (above), the only class of hazard that determines its classification as a confined space is an atmospheric hazard; it is necessary, however, to perform an assessment of the physical hazards in a confined space because many of these hazards do exist in confined spaces and are exacerbated by the physical nature of the space (generally, enclosed and not constructed for continuous human occupancy).

Physical hazards, include:

- **mechanical and electrical:** the unexpected movement of mechanical equipment or the unexpected discharge of electrical equipment in a confined space presents a very hazardous situation for anyone within the space.

- **general safety:** means of access and egress, temperature extremes, poor visibility, noise, slips, trips, falls, falling objects, exposure to pathogens, etc.
- **engulfment:** the movement or shifting of material within a confined space has been responsible for many injuries and fatalities. Silos with grain inside are a prime example of this type of hazard.

### 3.2 Glossary

Terms	Definitions
Atmospheric Hazards	<p>mean</p> <ul style="list-style-type: none"> <li>a) the accumulation of flammable, combustible or explosive agents,</li> <li>b) an oxygen content in the atmosphere that is less than 19.5 per cent or more than 23 per cent by volume, or</li> <li>c) the accumulation of atmospheric contaminants, including gases, vapours, fumes, dusts or mists, that could,</li> <li>d) result in acute health effects that pose an               <ul style="list-style-type: none"> <li>i. immediate threat to life, or</li> <li>ii. interfere with a person’s ability to escape unaided from a confined space;</li> </ul> </li> </ul>
Atmospheric Testing	<p>pre-entry testing by a competent person with a calibrated direct-reading instrument to measure (in sequence) oxygen content, flammable gases and vapours, and toxic air contaminants. Because contaminants can stratify at different levels, the entire confined space must be evaluated remotely. If the measurements indicate that the atmosphere is within acceptable limits, the entry may proceed. If not, additional ventilation or respiratory protective equipment must be provided, or entry is prohibited.</p>
Attendant	<p>a worker who is trained in the hazards of confined spaces and whose primary responsibility is to monitor and assist the workers in the confined space</p>
Cold Work	<p>means work that is not capable of producing a source of ignition</p>
Competent Person	<p>means a person who,</p> <ul style="list-style-type: none"> <li>a) is qualified because of knowledge, training and experience to organize the work and its performance,</li> <li>b) is familiar with this Act and the regulations that apply to the work, and</li> <li>c) has knowledge of any potential or actual danger to health and safety in the workplace</li> </ul>
Confined Space	<p>means a fully or partially enclosed space,</p> <ul style="list-style-type: none"> <li>a) that is not both designed and constructed for continuous human occupancy, and</li> <li>b) in which atmospheric hazards may occur because of its construction, location or contents or because of work that is done in it</li> </ul>



Terms	Definitions
Confined Space Supervisor	a supervisor who has principal authority or charge of the confined space
Continuous Monitoring	means continuous monitoring using a calibrated direct-reading instrument that is appropriate for the atmospheric hazards identified in the relevant assessment
Co-ordination Document	a document prepared by the lead employer that coordinates the work of more than one employer in a confined space to protect the health and safety of all workers
Contractor	an external supplier of services to the University of Guelph for monetary compensation and one who does not come under the jurisdiction of a constructor.
Engulfment	the surrounding and effective capture of a person by liquid or finely divided solid that can be aspirated to cause death by filling or plugging the respiratory system, or that can exert enough force on the body to cause death by strangulation, constriction or crushing
Entry Permit	the written authorization for entry into a confined space for a stated purpose during a given time, which certifies that all potential hazards have been evaluated and are controlled
Entry Supervisor	acting on behalf of the confined space supervisor, a competent person who is responsible for authorizing entry into a confined space, for ensuring that safe procedures are followed for such entries, and for terminating entry. This person may also be the Attendant.
Hot Work	means work that is capable of producing a source of ignition.
Lead Employer	means an employer who contracts for the services of one or more other employers or independent contractors in relation to one or more confined spaces that are located, <ul style="list-style-type: none"> <li>a) in the lead employer's own workplace, or</li> <li>b) in another employer's workplace</li> </ul>
On-Site Rescue Procedures	written on-site rescue procedures that apply to the confined space that have been developed and are ready for immediate implementation
Oxygen-Deficiency	means less than 19.5% oxygen by volume at normal atmospheric pressure of oxygen less than 17.6 kPa (132 mm Hg). Normal air at sea level contains about 21% oxygen at a partial pressure of 21.3 kPa (160 mm Hg)
Oxygen-Enrichment	means more than 23.5% oxygen by volume or any atmosphere with a partial pressure of oxygen greater than 23.7 kPa (178 mm Hg)
Purging	means displacing contaminants from a confined space



<b>Terms</b>	<b>Definitions</b>
Related Work	means work that is performed near a confined space in direct support of work inside the confined space
Rescue-Team Members	workers who are available for immediate implementation of the on-site rescue procedures and who are trained in: the on-site rescue procedures for the confined space, first aid and cardiopulmonary resuscitation and the use of the pertinent rescue equipment.

## 4.0 RESPONSIBILITIES

This section outlines the roles and responsibilities of the confined space participants under the Confined Spaces Management Program.

### 4.1 Director, Human Resources (Health, Safety and Wellness)

The Director, Human Resources (Health, Safety and Wellness) is responsible for overseeing the administration of the Confined Spaces Management Program for the University of Guelph.

### 4.2 Manager, Occupational Hygiene and Safety and Manager, Agricultural & Veterinary Safety

The Manager, Occupational Hygiene and Safety has the following responsibilities at the Guelph Campus, and the Manager, Agricultural & Veterinary Safety has the following responsibilities at the Ridgetown Campus and Research Stations:

1. In accordance with all legislative requirements, to be responsible for the development, implementation, maintenance and effectiveness of the Confined Spaces Management Program,
2. To work in close liaison with departments who perform entry and work in confined spaces such that compliance with the requirements of the Confined Spaces Management Program are met
3. To provide technical advice regarding the identification and assessment of health and safety hazards in confined spaces and the control or elimination of these hazards.
4. To facilitate or provide appropriate training to all University employees who are required to enter or work in confined spaces or perform related work with respect to the same confined space, as well as confined space supervisors and others who authorize entry into or work in confined spaces (Section 11).
5. To assist with the development and maintenance of a list of University employees who are required to enter or work in confined spaces or perform related work with respect to the same confined spaces and who have participated in confined space training (Section 11).
6. To assist departments in identifying all confined spaces and maintaining an inventory of such at the University of Guelph (Section 5.0).
7. To assist departments in conducting hazard assessments of confined spaces (Section 6.0).
8. To assist departments in providing measures and procedures to control hazards identified in assessments of confined spaces (Section 7.0).
9. To assist departments in evaluating the competence of contractors and other related personnel who enter confined spaces on the basis of service, performance and documentation of adequate training and experience, as required.
10. To audit the implementation of the Confined Spaces Management Program (Section 16.0).

11. To review the Confined Spaces Management Program on a regular basis, in consultation with the pertinent joint health and safety committee or health and safety representative (Section 16.0).

### **4.3 Directors and Managers with responsibility for University Facilities**

Directors and Managers with responsibility for University Facilities are responsible for overseeing the implementation of the Confined Spaces Management Program for their respective areas.

### **4.4 Confined Space Supervisor**

The Confined Space Supervisor has the following responsibilities for all confined space(s) under his/her jurisdiction.

1. To accept principal authority or charge of the confined space(s).
2. To be a competent person.
3. To authorize all entry or work in the confined space.
4. To take all steps reasonable such that all confined space activities are performed in accordance with the Confined Spaces Management Program.
5. To identify the confined space(s) (Section 5.0).
6. To provide and maintain confined space inventories for buildings/structures/ properties, and update as construction changes are made. (Section 5.0).
7. To provide for appropriate security to prevent unauthorized entry and the installation of appropriate signage on the confined space(s) (Section 12).
8. To make available hazard assessments for the confined space(s) (Section 6.0).
9. To make available written plans to control hazards identified by the assessments for the confined space(s) (Section 7.0).
10. To make available written on-site rescue procedures for the confined space (Section 8).
11. To assign an Attendant, Entry Supervisor, On-Site Rescue Personnel for each confined space entry (Section 8).
12. To verify appropriate training/instruction has been received by all those (including University employees and workers of contractors) who are required to enter or work in confined spaces or perform related work (Section 11)
13. Where there is multi-employer involvement and as the representative of the lead employer, to prepare and distribute the co-ordination document to the pertinent employers and joint health and safety committees or health and safety representative (Section 13).
14. To advise contractors who are contracted to perform entry/work in confined spaces or related work with respect to the same confined space at the University of Guelph of the requirements of the Confined Spaces Management Program and work in accordance with those requirements (Section 15)

15. To retain the assessment, written plan, co-ordination document, record of training, entry permit and record of atmospheric testing for each confined space entry.

## 4.5 Entry Supervisor

The Entry Supervisor has the following responsibilities:

1. To be a competent person.
2. To be aware of the hazards that may exist/develop during entry and work in the confined space, including information on the mode, signs or symptoms and consequences of over-exposure to any hazard that may be encountered.
3. To confirm that the hazard assessment and written plan have been incorporated into the entry permit and that the entry permit is complete and accurate (Sections 7 & 9).
4. To lead the review of the hazard assessment, written plan, on-site rescue procedures and entry permit with all entrants and other related personnel, prior to entry into the confined space (Section 14).
5. To be familiar with the proper use and limitations of all personal protective equipment that are required for entry and work in the confined space.
6. To follow the entry procedures established by the written plan and entry permit (Sections 7 & 9).
7. To be familiar with what conditions are and are not permitted in the space during entry and work activities.
8. To monitor that acceptable conditions are maintained while the space is occupied.
9. To have available an adequate number of appropriately trained persons for immediate implementation of the on-site rescue procedures which apply to the space (Section 8).
10. To have readily available the rescue equipment identified in the relevant plan, appropriate for entry into the confined space, and has been inspected in accordance with the plan (Section 7).
11. To confirm that appropriate atmospheric testing is performed by a trained person using continuous monitoring, before and while a worker is in a confined space, and that test results are recorded at adequate intervals (Section 14).
12. To take appropriate action when testing indicates that atmospheric levels are not within acceptable limits (Section 10).
13. To terminate the entry/work and cancel the entry permit when the work is completed or when a prohibited condition arises (Section 9).

## 4.6 Attendant

The Attendant (Section 8.1) has the following responsibilities:

1. To understand the hazards that may be encountered during entry and work activities.
2. To participate in the review of the hazard assessment, written plan, on-site rescue procedures and entry permit, prior to entry into the confined space.
3. To be familiar with the proper use and limitations of all personal protective equipment that are required for entry and work in the confined space.

4. To be stationed outside and near the entrance to the confined space as determined by the hazard assessment and the resulting confined space plan.
5. To be in constant communication with all workers inside the confined space, using the means described in the plan.
6. To monitor the safety and provide assistance to all workers in the confined space:
  - knowing the signs and symptoms of exposure to physical and chemical hazards likely to be present in the space;
  - knowing what conditions are and are not permitted in the space during entry and work activities;
  - recognizing when an entrant is impaired or endangered.
7. To keep unauthorized personnel away from the entry point.
8. To immediately summon a rescue response, if required.

#### **4.7 Rescue-Team Members**

Rescue-team members (Section 8.2) have the following responsibilities:

1. To participate in training in the on-site procedures for the confined space
2. To remain available in order to immediately carry out the on-site rescue procedures according to the confined space plan.
3. To use the rescue equipment in accordance with the confined space plan.

#### **4.8 Authorized Entrants**

Authorized entrants have the following responsibilities:

1. To be aware of the hazards that may exist/develop during entry and work in the confined space, including information on the mode, signs or symptoms and consequences of over-exposure to any hazard that may be encountered.
2. To participate in the review of the hazard assessment, written plan, on-site rescue procedures and entry permit, prior to entry into the confined space (Section 14).
3. To be familiar with the proper use and limitations of all personal protective equipment that are required for entry and work in the confined space.
4. To follow the entry/work procedures established by the written plan and entry permit (Sections 7 & 9).
5. To be familiar with what conditions are and are not permitted in the space during entry and work activities.
6. To be familiar with the chosen means of communication, including emergency signals.
7. To be in constant communication with the attendant so as to enable the attendant to monitor entrant status and consequently the ability to immediately evacuate the confined space when necessary (Section 14).
8. To alert the attendant when an entrant recognizes unusual action/behaviour, an unexpected hazard, an unsafe act or detects a condition prohibited by the permit.

9. To exit the confined space as quickly as possible, when an order to evacuate is given by the attendant or entry supervisor, an entrant recognizes a sign or symptom of over-exposure, an unacceptable condition arises, or an evacuation alarm is activated.

## 4.9 Contractors

Contractors have the following responsibilities:

1. To provide written acknowledgement that they have read and will comply with the requirements of Ontario Regulation 632/05 and the University of Guelph Confined Spaces Management Program and that failure to comply may result in immediate termination of the work (Section 15).
2. To validate that all their employees have received training in safe work practices for working in confined spaces and/or for performing related work, including training in the recognition of hazards associated with confined spaces (Section 11).
3. To monitor that all their employees follow the appropriate procedures for entry and work in confined spaces.
4. To work with the lead employer (as required) regarding the co-ordination document such that the duties imposed on employers by the regulation are performed in a way that protects the health and safety of all workers who perform work in the confined space or related work with respect to the confined space (Section 15).

## 5.0 CONFINED SPACE IDENTIFICATION AND INVENTORY

### 5.1 Identification

- 5.1.1 Every confined space in buildings/structures/properties owned or leased by the University of Guelph shall be in the charge of a confined space supervisor.
- 5.1.2 All confined spaces in buildings/structures/properties owned or leased by the University of Guelph shall be identified and provided with an identification number.
- 5.1.3 The confined space supervisor is responsible for the identification of all confined spaces under his/her jurisdiction.
- 5.1.4 Once the confined space has been identified, it must be properly signed to bear the unique identification number for the confined space. The identification number is comprised of four parts: **building/structure/property number – type – room number – number**:
- **Building/structure/property number** is a unique identifier for the building/structure/property (e.g. Alumni House -- building # 66)
  - **Group/Type** of confined space (see Table 1 on the next page -- e.g. sewer pits have been classified in group “A”)
  - **Room number** is the number of the room in which the confined space is located; if there is no room number associated with its location, identify as “000”
  - **Number** is a unique identifier at that location (e.g. spaces are numbered consecutively -- i.e. 01, 02, 03, etc.).
  - An example of a typical confined space identification number is: **66-A-012-01**.
- 5.1.5 The confined space supervisor is responsible for the installation of identification numbers on all confined spaces under his/her jurisdiction (see Section 12 -- Access Control).

### 5.2 Inventory

- 5.2.1 All confined spaces in buildings/structures/properties owned or leased by the University of Guelph will be inventoried through a survey process. This survey provides the data for the inventory of confined spaces.
- 5.2.2 The survey/inventory shall include:
- Building/structure/property in which the confined space is located
  - Name of the person conducting the inventory
  - Date of the inventory
  - Name of the confined space
  - Name of the confined space supervisor
  - Type of confined space
  - Location of the confined space
  - Location of access points



- Confined space identification number
  - Comments (any other information deemed useful to the inventory)
- 5.2.3 Confined spaces will be inventoried using the form provided in [Appendix A](#).
- 5.2.4 The confined space supervisor is responsible for providing confined space inventories for buildings/structures/properties under his/her jurisdiction.
- 5.2.5 Confined space inventories shall be readily accessible to all authorized personnel.

### 5.3 Updating Inventories

- 5.3.1 The initial confined space inventories will be updated as a result of new or reconfigured confined spaces as well as decommissioned confined spaces.
- 5.3.2 The confined space supervisor is responsible for maintaining the confined space inventories for confined spaces under his/her jurisdiction.
- 5.3.3 The inventory shall be updated at the time of commissioning or decommissioning the confined space.
- 5.3.4 The updated written record (inventory) shall be filed with the pertinent confined space supervisor and copied to Environmental Health and Safety at the time of commissioning or decommissioning the confined space.

**Table 1: Group Designations for Selected Types of Confined Spaces**

GROUP	GROUP DESIGNATION	TYPES OF SPACES
Pits	A	Sewage, Manure, Elevator, etc.
Tanks	B	Open Tanks (e.g. neutralizing, degasifier, dechlorinator, etc.
Tanks	B	Closed Tanks (e.g. condensate, compressor, domestic hot water, etc.)
Silos	C	Silos
Service Chambers	D	Service Chambers that fit the definition of confined space
Cooling Towers	E	Cooling Tower Basins/Systems that fit the definition of confined space
Boilers	F	Boilers

## 6.0 HAZARD ASSESSMENT

In confined spaces, hazards may exist as a result of the design, construction, location, use or contents of the space; they may also develop during the work activity inside the confined space. These hazards may be atmospheric hazards and/or physical hazards.

- 6.0.1 Before any worker enters a confined space, the confined space supervisor or designate shall confirm that an assessment of the hazards related to the confined space has been carried out. The form in [Appendix B](#) shall be used to provide the hazard assessment.
- 6.0.2 The confined space supervisor or designate shall appoint a competent person with knowledge, training and experience to be able to perform the hazard assessment and shall maintain a record containing details of the person's knowledge, training and experience.
- 6.0.3 The hazard assessment shall be recorded in writing, signed and dated by the person who carries out the assessment, and provided to the confined space supervisor, prior to any worker entering a confined space.
- 6.0.4 The confined space supervisor or designate shall confirm that a hazard assessment is repeated each time a new entry permit is issued for work to be done in a confined space. New hazards may have developed since the last time the assessment was carried out. In addition, a different work activity could result in different hazards being introduced into the confined space.
  - Note: an assessment is not needed each time a worker goes in and out of the confined space during the period to which an entry permit applies.
- 6.0.5 Where two or more confined spaces are similar in construction and have the same hazards, the assessment for each specific confined space may be recorded in a single document, however, it is important to clearly identify the specific confined space(s) to which each assessment applies.
- 6.0.6 The entry supervisor or designate shall confirm that the hazard assessment is incorporated into the entry permit and will be available to every worker who performs work to which the assessment relates.
- 6.0.7 The confined space supervisor shall retain records of the hazard assessment for the longer of the following periods:
  1. One year after the document is created.
  2. The period that is necessary such that at least the two most recent records that relate to a particular confined space are retained.

## 7.0 CONFINED SPACE PLAN

The plan is a specific set of measures and procedures to control hazards identified by the assessment for that confined space to allow workers to enter and work in that space safely. The plan also includes provisions for on-site rescue procedures, rescue equipment and methods of communication.

- 7.0.1 Before any worker enters a confined space, the confined space supervisor or designate shall confirm that a written plan has been developed, signed, dated and implemented by a competent person for the confined space. The form in [Appendix C](#) shall be used to provide the written plan.
- 7.0.2 The plan shall include provisions for:
- hazard identification and control
  - the duties of workers;
  - co-ordination (multi-employer involvement)
  - attendants
  - means of entry/exit
  - personal protective equipment
  - isolation of energy and control of materials movement
  - ventilation and purging
  - procedures for working in the presence of explosive or flammable substances
  - atmospheric testing
  - on-site rescue -- procedures, equipment and method of communication
- 7.0.3 The confined space supervisor or designate shall confirm that a written plan is repeated each time a new entry permit is issued for work to be done in a confined space. New hazards may have developed since the last time the plan was written. In addition, a different work activity could result in different hazards being introduced into the confined space.
- Note: a written plan is not needed each time a worker goes in and out of the confined space during the period to which an entry permit applies.
- 7.0.4 Where two or more confined spaces are similar in construction and have the same hazards as identified by the assessment for each specific confined space, the written plan may be recorded in a single document, however, it is important to clearly identify the specific confined space(s) to which each written plan applies.
- 7.0.5 The entry supervisor or designate shall confirm that the written plan is incorporated into the entry permit and will be available to every worker who performs work to which the plan relates.
- 7.0.6 The confined space supervisor shall retain records of the written plan for the longer of the following periods:
1. One year after the document is created.



2. The period that is necessary to such that at least the two most recent records that relate to a particular confined space are retained.

## 8.0 ATTENDANT AND ON-SITE RESCUE

### 8.1 Attendant

An attendant is a worker who is trained in the hazards of confined spaces and whose primary responsibility is to monitor the safety of the worker(s) and to provide assistance to the workers in the confined space.

- 8.1.1 Whenever a worker is to enter a confined space, the confined space supervisor or designate shall assign an attendant.
- 8.1.2 The attendant shall not enter the confined space and shall remain located outside and near the entrance of the confined space as determined by the hazard assessment and the resulting confined space plan. As well, he/she shall be in constant communication with the worker(s) inside the space via a communication system and able to immediately summon a rescue response should it be required (see [Appendix C](#)).

### 8.2 On-site Rescue (see [Appendix F](#))

- 8.2.1 Before a worker enters a confined space, the entry supervisor or designate shall confirm that written on-site rescue procedures that apply to the confined space are available and are ready for immediate implementation, in accordance with the relevant plan.
- 8.2.2 Before a worker enters a confined space, the entry supervisor shall review all emergency procedures, including procedures relating to emergencies outside the confined space with all entrants and other related personnel.
- 8.2.3 Before a worker enters a confined space, the entry supervisor or designate shall have available an adequate number of appropriately trained persons for immediate implementation of the on-site rescue procedures that apply to the confined space.
  - Appropriate training shall include:
    - the on-site rescue procedures that apply to the confined space;
    - first aid and cardio-pulmonary resuscitation; and
    - the use of the rescue equipment required in accordance with the relevant plan
- 8.2.4 The entry supervisor or designate is responsible for the rescue equipment identified in the relevant plan to be
  - readily available to affect a rescue in the confined space;
  - appropriate for entry into the confined space; and
  - inspected and recorded in writing as often as is necessary such that it is in good working order, by a person with knowledge, training and experience.

## 9.0 ENTRY PERMIT SYSTEM

Entry permits are documents which certify that an assessment of the confined space has been completed and that specific precautions such as isolation, protective equipment, ventilation and atmospheric testing are required before workers can enter the confined space. Entry permits are required for entry into all confined spaces.

- 9.0.1 Before any worker enters a confined space, the entry supervisor or designate shall verify that a separate entry permit is issued each time work is to be performed in a confined space. The form in [Appendix F](#) shall be used to provide the entry permit.
- 9.0.2 The entry permit shall include provisions for:
- the location of the confined space
  - a description of the work to be performed in the confined space
  - a description of the hazards and the corresponding control measures
  - the time period for which the entry permit applies
  - the name of the attendant
  - a record of each worker's entries and exits
  - a list of equipment required for entry and rescue
  - results obtained in atmospheric testing
  - hot work (if any) and corresponding control measures
- 9.0.3 The entry supervisor or designate shall verify that the hazard assessment and the written plan are incorporated into the entry permit and will be available and reviewed with all entrants and other related personnel prior to entry into the confined space.
- 9.0.4 The confined space supervisor shall retain records of the entry permit for the longer of the following periods:
1. One year after the document is created.
  2. The period that is necessary such that at least the two most recent records that relate to a particular confined space are retained.

## 10.0 ATMOSPHERIC TESTING OF CONFINED SPACES

Atmospheric testing is required when the relevant assessment determines that the confined space may contain atmospheric hazards. The atmospheric hazards of concern include oxygen content outside the acceptable range of 19.5 to 23%, the potential accumulation of flammable, combustible, or explosive agents, or the accumulation of atmospheric contaminants.

Atmospheric test results shall be recorded using the form provided in [Appendix F](#).

- 10.0.1 The entry supervisor or designate shall verify that testing is conducted by a person with knowledge, training and experience to perform tests. Testing is required to maintain acceptable atmospheric levels in the confined space in accordance with the relevant plan.
- 10.0.2 The person performing the tests shall use calibrated instruments that are in good working order and are appropriate for the hazards identified in the relevant assessment. The tests shall be performed in a manner that does not endanger the health and safety of the person performing them.
- 10.0.3 The entry supervisor or designate is responsible for the testing to be performed using continuous monitoring and that the test results are recorded at set intervals as determined by the confined space plan.
- 10.0.4 The entry supervisor or designate shall take appropriate action when testing indicates that atmospheric levels in the confined space are not within acceptable limits.
- 10.0.5 The confined space supervisor shall retain records of testing for the longer of the following periods:
  - One year after the document is created.
  - The period that is necessary to such that that at least the two most recent records that relate to a particular confined space are retained.
  - For a confined space with multi-employer involvement, the confined space supervisor shall retain the record in accordance with the requirements above.

## 11.0 GENERAL AND PLAN-SPECIFIC TRAINING

### 11.1 University Employees

11.1.1 The University of Guelph shall provide appropriate training to all University employees who are required to enter or work in confined spaces or perform related work with respect to the same confined space, as well as confined space supervisors and others who authorize entry into or work in confined spaces.

11.1.2 Instruction shall include the following:

- University of Guelph Confined Spaces Program
- Responsibilities under the Confined Spaces Program
- Identification/Inventory of Confined Spaces
- Identification and Assessment of Hazards in Confined Spaces
- Confined Space Entry/Work Plan (General and Specific Procedures)
- Access Control
- Entry Permits
- Attendant and On-Site Rescue
- Atmospheric Testing of Confined Spaces
- Isolation of Energy and Control of Materials Movement
- Explosive and Flammable Substances
- Ventilation and Purging of Atmospheric Hazards
- Respiratory Protection

11.1.3 Only individuals who have been trained to the standards outlined above will be permitted to perform/manage confined space work.

11.1.4 Further to 11.1.1 above, the University of Guelph shall provide appropriate training to all University employees contributing to the work activity, even those not entering the confined space, for example, attendants.

- Also, rescue personnel shall receive appropriate training in on-site procedures, first aid and cardiopulmonary resuscitation and the use of the specific rescue equipment required. On-site rescue procedures should be practiced so as to demonstrate a high level of proficiency.

11.1.5 Attendance records will be kept to record the training provider, the type of training and the dates training was given to University of Guelph employees.

- The confined space supervisor and EHS shall retain attendance records for the longer of the following periods:
- One year after the document is created.
- The period that is necessary to such that at least the two most recent records that relate to a particular employee are retained.



- 11.1.6 Training shall be developed and reviewed at least annually in consultation with the relevant joint health and safety committee or health and safety representative.

## 11.2 Contractors

- 11.2.1 All contractors who are contracted to perform entry/work in confined spaces or related work with respect to the same confined space at the University of Guelph shall be familiar with the requirements of the University's Confined Spaces Management Program.
- 11.2.2 All contractors who are contracted to perform entry/work in confined spaces or related work with respect to the same confined space at the University of Guelph shall provide written evidence that their employees have received adequate training in safe work practices for working in confined spaces and/or for performing related work, including training in the recognition of hazards associated with confined spaces.

## 12.0 ACCESS CONTROL

Only authorized personnel are allowed entry to the confined space, in accordance with procedures identified in the plan. Therefore, appropriate measures must be put in place to adequately secure the confined space against unauthorized or accidental entry.

- 12.0.1 All confined spaces shall be secured against unauthorized entry and/or properly signed to warn against unauthorized entry and work. [Appendix G](#) provides an example of appropriate confined space signage. The sign shall also bear the unique identification number for the confined space.
- 12.0.2 The confined space supervisor is responsible for ensuring appropriate security for unauthorized entry and the installation of appropriate signage on all confined spaces under his/her jurisdiction.
- 12.0.3 While workers are in the confined space an attendant shall have control over access (see Section 8.1).
  - Note: In some circumstances, the use of signs may not be practical, such as for service chambers and grates. A tool is usually required for removal of the cover, and therefore, it would likely be considered secure against entry.

## 13.0 CO-ORDINATION DOCUMENT

When workers of **more than one employer** enter or perform work in the same confined space or related work with respect to the same confined space, that work has to be coordinated in a way that protects the health and safety of **all workers**.

- 13.0.1 Before any worker enters a University of Guelph confined space or begins related work with respect to the confined space, the University of Guelph as the lead employer (see glossary) shall prepare a **co-ordination document** in accordance with legislative requirements such that the duties imposed on employers by the regulation are performed in a way that protects the health and safety of **all workers** who perform work in the confined space or related work with respect to the confined space.
- 13.0.2 On behalf of the lead employer, the confined space supervisor or designate shall prepare the co-ordination document (a sample of the co-ordination document is provided in [Appendix D](#)).
- 13.0.3 The confined space supervisor or designate shall provide a copy of the co-ordination document to the following:
  - a) each employer of workers who enter or perform work in the same confined space or related work with respect to the same confined space; and
  - b) the pertinent joint health and safety or health and safety representative, if any, for each employer of workers who enter or perform work in the same confined space or related work with respect to the same confined space.
- 13.0.4 The confined space supervisor shall retain records of co-ordination documents for the longer of the following periods:
  1. One year after the document is created.
  2. The period that is necessary such that at least the two most recent records that relate to a particular confined space are retained.

## 14.0 CONFINED SPACE WORK – ENTRY PROCEDURE

The confined space supervisor has principal authority or charge of the confined space and has a responsibility to confirm that all confined space activities are performed in accordance with the University of Guelph Confined Spaces Management Program. To support this, **all workers** who enter/perform work in confined spaces or related work with respect to confined spaces at the University are required to follow very stringent procedures.

- 14.0.1 Before any worker enters a confined space, the confined space supervisor or designate shall confirm that an assessment of the hazards related to the confined space has been carried out -- see Section 6.0 (Hazard Assessment).
- 14.0.2 Before any worker enters a confined space, the confined space supervisor or designate shall confirm that a written plan has been developed and implemented -- see Section 7.0 (Confined Space Plan).
- 14.0.3 Whenever a worker is to enter a confined space, the confined space supervisor or designate shall assign an entry supervisor and an attendant to the confined space -- see Section 8.0 (Attendant and On-Site Rescue).
- 14.0.4 Before any worker enters a confined space, the entry supervisor or designate shall confirm that a separate entry permit is issued each time work is to be performed in a confined space -- see Section 9.0 (Entry Permit).
- 14.0.5 The entry supervisor or designate shall confirm that the hazard assessment and written plan are incorporated into the entry permit which will be available to and reviewed with every worker who performs work to which the assessment and plan relate.
- 14.0.6 Before a worker enters a confined space, the entry supervisor or designate shall confirm that written on-site rescue procedures that apply to the confined space have been developed and are ready for immediate implementation, in accordance with the relevant plan -- see Section 8.0 (Attendant and On-Site Rescue).
- 14.0.7 Before a worker enters a confined space, the entry supervisor or designate shall review all emergency procedures, including procedures relating to emergencies outside the confined space with all entrants and other related personnel.
- 14.0.8 The entry supervisor or designate shall confirm that appropriate atmospheric testing is conducted to make certain that acceptable atmospheric levels are maintained in the confined space in accordance with the relevant plan -- see Section 10.0 (Atmospheric Testing of Confined Spaces).
- 14.0.9 Only individuals who have been trained to the standards outlined in Section 11.0 (General and Plan-Specific Training) will be permitted to perform/manage confined space work.

## 15.0 CONFINED SPACE WORK – ENTRY PROCEDURE FOR CONTRACTORS

In addition to the procedures in Section 14 (Confined Space Work – Entry Procedure) of this program, the following procedures also apply to Contracted Work.

Contractors shall demonstrate compliance with the requirements of the University of Guelph Confined Spaces Management Program.

### 15.1 Multi-Employer Involvement (including the University of Guelph)

Applies when workers of more than one employer are to perform work in the same confined space or related work with respect to the same confined space at the same time, or consecutively.

- 15.1.1 Contractors who are contracted to perform entry/work in confined spaces or related work with respect to the same confined space at the University shall provide written acknowledgement ([Appendix D](#)) that:
- they have read and will comply with the requirements of the O. Reg. 632/05;
  - they have read and will comply with the University's Confined Spaces Management Program;
  - failure to comply with the above can result in termination of the work.
- 15.1.2 Contractors who are contracted to perform entry/work in confined spaces or related work with respect to the same confined space at the University shall provide written evidence that all their employees have received training in safe work practices for working in confined spaces and/or for performing related work, including training in the recognition of hazards associated with confined spaces.
- 15.1.3 The confined space supervisor shall prepare a **co-ordination document** ([Appendix D](#)) in accordance with legislative requirements such that the duties imposed on employers by the regulation are performed in a way that protects the health and safety of **all workers** who perform work in the confined space or related work with respect to the confined space.
- The confined space supervisor or designate shall provide a copy of the co-ordination document to each employer of workers who enter or perform work in the same confined space or related work with respect to the same confined space.
- 15.1.4 The confined space supervisor/entry supervisor shall make certain that contractors fully comply with the University's Confined Spaces Management Program.

### 15.2 Single-Employer Involvement

- 15.2.1 A contractor who is contracted to perform entry/work in confined spaces or related work with respect to the same confined space at the University shall provide written acknowledgement ([Appendix E](#)) that:



- the contractor has read and will comply with the requirements of the O. Reg. 632/05;
- the contractor has read and will comply with the University's Confined Spaces Management Program;
- failure to comply with the above can result in termination of the work.

15.2.2 A contractor who is contracted to perform entry/work in confined spaces or related work with respect to the same confined space at the University shall provide written evidence that all workers have received training in safe work practices for working in confined spaces and/or for performing related work, including training in the recognition of hazards associated with confined spaces.

15.2.3 The confined space supervisor/entry supervisor shall make certain that the contractor fully complies with the University's Confined Spaces Management Program.

## **16.0 PROGRAM AUDIT AND REVIEW**

### **16.1 Program Audit**

Environmental Health and Safety will audit various components of the confined spaces management program on an on-going basis. This will include an audit of:

- the status of the confined space inventory;
- the management of confined spaces at the University of Guelph;
- the status of worker training;
- worker compliance with confined space entry/work procedures

### **16.2 Program Review**

On a regular basis the University will review and may amend the program in consultation with the Joint Health and Safety Committee(s) or Health and Safety Representative.



## **APPENDICES**

### **Appendix A – Confined Space Inventory**

Refer to "[Appendix A – Confined Space Inventory](#)"





## Appendix B – Confined Space Hazard Assessment

Refer to "[Appendix B – Confined Space Hazard Assessment](#)"



## Appendix C – Confined Space Entry Plan

Refer to "[Appendix C – Confined Space Entry Plan](#)"



## Appendix D – Co-ordination Document for Confined Spaces

Refer to "[Appendix D – Co-ordination Document for Confined Spaces](#)"



## **Appendix E - Provision of Documents and Acknowledgement of Compliance for Entry/Work in Confined Space**

Refer to "[Appendix E - Provision of Documents and Acknowledgement of Compliance for Entry/Work in Confined Space](#)"



## Appendix F – Confined Space Entry Permit

Refer to "[Appendix F – Confined Space Entry Permit](#)"



## Appendix G – Danger Sign

Refer to "[Appendix G – Danger Sign](#)"