

Appendix G: Form A – Hazard Assessment

CONFINED SPACE NUMBER: /_____/ - /_____/ - /_____/

Building Group Number

DATE OF ENTRY: __/__/____

DD MM YYYY

Confined Space Identification

1. Is the space fully or partially enclosed? Yes No
2. Is the space NOT intended for continuous human occupancy? Yes No
3. Could an acute atmospheric hazard occur? Yes No

Is this a Confined Space? Yes No

If yes to all 3 questions, then this is a confined space; proceed below. If NOT sure, use Decision Tree (next page) to clarify.

Description of Confined Space (check all that apply)

- Campus/Area: UTM UTSC 89 Chestnut St. George Other
- Type of space: Pit Boiler Tank Electrical Cable Chamber Other, specify _____
- Location: Indoors (Room # _____) Outdoors (intersection/nearest building _____)
- At ground / floor level Below ground Elevated
- Access: Horizontal Vertical Other, specify _____
- No. of Openings: __ Description of Primary Access point: _____
- Means of Access: Stairs Permanent Ladder Portable Ladder Winch
- Other, specify _____
- Alternate Access (if any): _____

Unauthorized Entry prevented by: _____
(describe method – e.g. Signs, locks, special tools)

Approximate dimensions of space (LxWxH): _____ Estimated volume: _____

Work to be done: _____

Primary reason for entry: Preventive maintenance

Inspection Cleaning Repair

Project/Service Order #: _____

Other, specify _____

Frequency of Entry: Daily Weekly Monthly

Yearly Other, specify _____

Who will be doing the work?

UofT Staff _____
(specify trade or utility, other)

Contractor(s) _____
(Company Name)

Diagram of Confined Space

Appendix G: Form A – Hazard Assessment

For each hazard below, indicate if it is present (✓), possible (?), or not present (✗) and describe. If hazard is unknown or cannot be adequately controlled, do NOT enter space!

1. **Atmospheric Hazards** (including gases, vapours, fumes, dusts, mists) that may cause an acute health condition (e.g. “immediately dangerous to life and health”) or interfere with a person’s ability to escape unaided?

Hazards		Present (✓) Possible (?) Not Present (✗)	Source, Type, Explanation
Oxygen Deficiency (<19.5%)			
Oxygen Enrichment (>23%)			
Flammable or Combustible Atmospheres			
Toxic Atmosphere	Carbon Monoxide		
	Hydrogen Sulfide		
	Other(s) (specify)		

2. **Other Hazards** (due to design, construction, location, use or contents)

Hazards		Present (✓) Possible (?) Not Present (✗)	Source, Type, Explanation
Chemical (SDS available?)			
Biological, (insects, animals, waste, remains, mold)			
Mechanical, (contact with moving parts, machinery)			
Stored energy, (steam, hydraulic, pneumatic, gravitational energy)			
Electrical (shock, electrocution)			
Physical, (contact w/ irregular/slippery/ sharp surfaces)			
Temperature, heat/cold, humidity			
Engulfment (water, loose materials)			

Appendix G: Form A – Hazard Assessment

2. Other Hazards con'd (due to design, construction, location, use or contents)

Hazards	Present (✓) Possible (?) Not Present (x)	Source, Type, Explanation
Difficult entry/exit		
Different work levels, falls		
Cramped work area		
Noise/vibration		
Poor visibility/lighting		
Ergonomics (awkward posture, high force, repetition)		
Traffic		
Weather		
Hot work, ignition sources		
Other(s) (specify)		

NOTE: This Hazard Assessment must be conducted by a person who has adequate knowledge, training, and experience to conduct Confined Space assessments.

Hazard Assessment conducted by (Owner of Confined Space):

Name (print): _____ Position: _____

Department/Area: _____ Phone: _____

Signature: _____ Date: _____

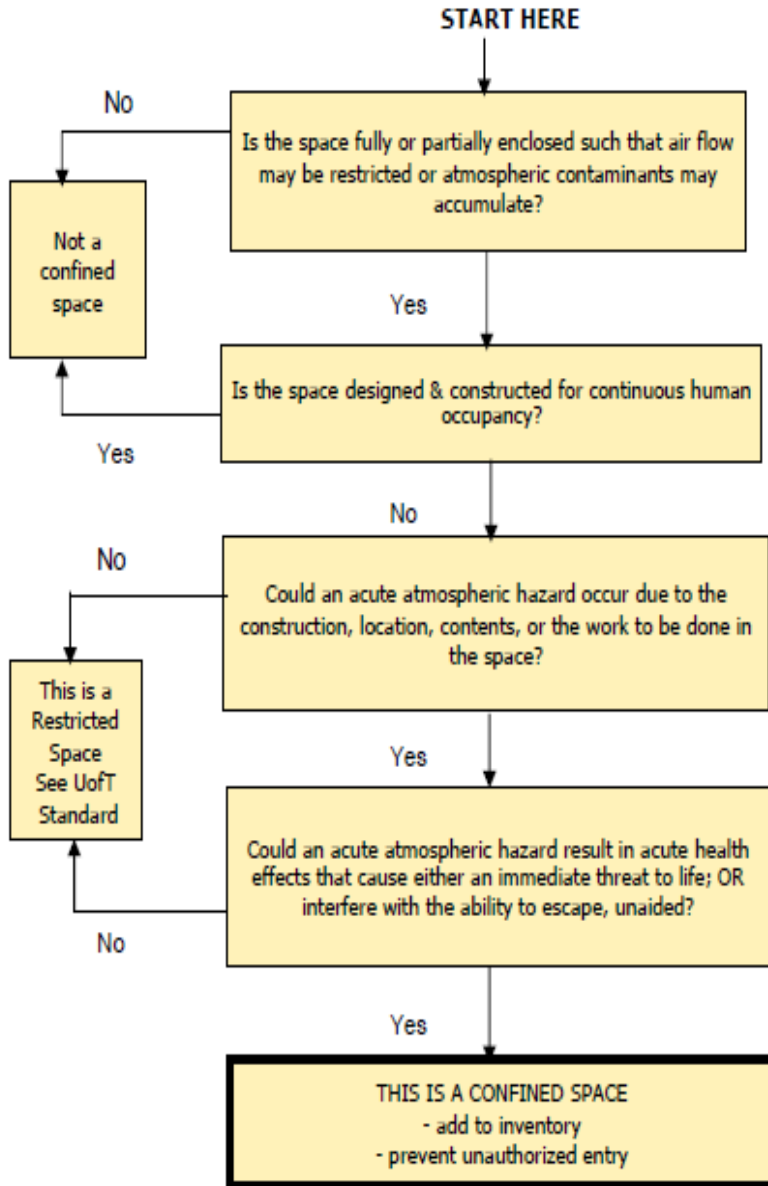
Hazard Assessment reviewed by (non-owner, e.g. Utilities, Trades or Contractor who will be doing the work):

Name (print): _____ Position: _____

Department/Company: _____ Phone: _____

Signature: _____ Date: _____

Recognizing a Confined Space



DEFINITIONS

Fully enclosed : (complete walls, floor ceiling, access only by a limited opening e.g., a tank)

Partially enclosed: (one or more walls, floor , ceiling is absent or a large percentage of surface area is opened to adjacent non-confined space areas e.g., an open pit) such that air may be restricted or atmospheric contaminants may accumulate?

A space designed for continuous human occupancy:
 - has provisions for structural adequacy, ventilation, lighting, access and egress (e.g., full size doors) is designed and constructed according to codes (e.g., Ont. Building Code, Ont. Fire Code, CSA B53, Mechanical Refrigeration Code)
 - i.e. is NOT made primarily to contain, move or manipulate materials or equipment

Acute atmospheric hazards are (O.Reg 623/05) :
 -accumulation of flammable, combustible or explosive agents, or
 - oxygen content in the atmosphere that is less than 19.5% or more than 23 % or
 -accumulation of atmospheric contaminants, including gases, vapours, fumes, dusts or mists

Immediate threat to life :
 -e.g. unconsciousness, respiratory distress, impaired judgement, death

Interfere with a person's ability to escape unaided:
 -without respiratory protection, emergency equipment or assistance from other person's e.g. strong irritation, drowsiness, confusion

Appendix H: Form B – Entry and On-Site Rescue Plans

The following controls, based on the Hazard Assessment (FORM A) of this confined space, will be implemented BEFORE entry.

Duties/Responsibilities:

All Supervisors, Entrants, Attendants, Rescue staff and Contractors will follow the requirements of UofT's Confined Space Program.

All sections of the Entry Plan must be completed. All workers entering the confined space must be trained on this Entry Plan.

Ventilation and Purging:

1) Space Preparation Methods:

- Empty Clean Inert Purge Ventilate Depressurize Heat/Cool Other _____
 N/A

2) Ventilation:

- Mechanical fresh air supply Mechanical exhaust Natural ventilation only (not recommended)

Ventilation failure warning system: Alarm Verbal Other method _____

Initial ventilation duration: _____ Ventilator to be used: _____

Multiple units required? Yes No

Intrinsically safe blower required? Yes No

Saddle vent required? Yes No

Ventilation required during entry? Yes No

Strategy for ventilating space: _____

Hazardous Energy Isolation, Control of Materials Movement: (UofT Lockout Procedures)

- Electrical Mechanical Hydraulic/Pneumatic Steam Gravity Gases Fluids Materials
 Other, (specify) _____ N/A

Pipeline Isolation:

- Broken Blanked/blind Capped Vented Blocked Double Block & Bleed Isolation valve
 Other, (specify) _____ N/A

Attendant(s): (all must be checked)

- Stationed outside space, near entrance Trained to monitor the safety and assist entrants
 In constant communication with entrants Has device for summoning rescue response
 Will NOT enter the space

Appendix H: Form B – Entry and On-Site Rescue Plans

Work Equipment Required: (see Rescue Plan for Rescue Equipment Requirements)

- Generator Double Insulated Tools Explosion-proof equipment Spark-proof tools
 Ground fault circuit interrupter (GFCI) Low voltage Battery operated lighting Light sticks
 Other (specify) _____
 All Equipment checked by: _____
(name, employer)

Communication Methods: (Indicate Primary (P) or Backup (B), Entrant (E) or Rescue (R))

- Visual Verbal from access Radio – portable Phone Cell Phone
 Intrinsically safe equipment req'd Other, specify _____

Emergency Telephone Number _____

Personal Protective Equipment (PPE):

- Safety goggles Safety Glasses Hardhat Face shield Welding helmet Hearing Protection
 Protective footwear, specify _____ Protective gloves, specify _____
 Protective clothing, specify _____
 Air purifying respirator for _____
 Half mask Full mask Powered air purifying
 Supplied air respirator (non- UofT personnel only) SCBA (non- UofT personnel only)
 Body harness and hand lines Tyvek Suit Cooling Vest
 Other, (specify) _____

Atmospheric Testing:

Hazard	Criteria	Equipment for Air Monitoring*
Oxygen	19.5-23.0%	
Flammable and explosive atmosphere – Lower Explosive Limit (LEL)	<25% (inspection) <10%(cold work) <5% (hot work)	
Carbon Monoxide	10 PPM maximum	
Hydrogen Sulphide	5 PPM maximum	
Other-		
Other-		
Other-		

*All equipment used for air monitoring must meet the following criteria:

- Calibrated by a manufacturer-approved service provider within the last 12 months
- Bump-tested using appropriate span gas on-site prior to use (entry of workers)
- Keep calibration certificates

Appendix H: Form B – Entry and On-Site Rescue Plans

If Explosive and/or Flammable Substances are present workers may NOT enter space unless:

1. Space has been adequately inerted using _____
- Atmosphere is monitored continuously to ensure it remains inert AND
Worker entering space uses
- Adequate respiratory protection _____
 - Adequate equipment to allow persons outside to locate and rescue worker _____
 - Other equipment to ensure workers safety _____

OR

2. Airborne combustible dusts or mists present? Yes No
Control measures in place? (ventilation, purging) Yes No

OR

3. Concentration of explosive or flammable gas or vapour is below the limit for type of work done.
- Inspection only Concentration must be less than 25% LEL
 - Cold Work Concentration must be less than 10% LEL
 - Hot Work Concentration must be less than 5% LEL
 - Oxygen content does not exceed 23%
 - Atmosphere is monitored continuously
 - Entry Permit allows hot work, controls in place
 - Adequate alarm system and exit procedure if levels > 5% LEL or 23% oxygen

Specify type:

- Welding Cutting Grinding Open flame work Other (specify) _____

Hot Work permit required by Fire Prevention Services: Yes No

Attached if required? Yes No

Training

UofT personnel

- List of UofT personnel who will enter the confined is attached.
- Confined space training records for the UofT personnel attached.

Contractors

- Hiring department has received written confirmation that contract workers has received confined space training

Entry Plan Training

Location: _____ Date: _____ By whom? _____

Appendix H: Form B – Entry and On-Site Rescue Plans

Rescue Plan

1. Non-entry rescue

2. Entry Rescue

Primary Access point _____ Alternate Access (if any) _____

Rescue Equipment Required (Number of each):

Tripod system _____

SCBA _____

CSA group D, full body harness with “D” rings _____

SAR _____

Lifeline _____

Escape SCBA _____

First Aid Kit _____

Fire Extinguisher _____

Personal Alert/Distress Device _____

Other, specify _____

Communication to Emergency Services:

Radio - portable Cell Phone Radio - hardwired Other, specify _____

Emergency Telephone Number _____

Rescue and Communication Equipment Checked by _____ Date: _____
(name, employer)

Equipment Certifications are located: _____

Number of rescuers required: _____ Rescue Training verified First Aid/CPR Training verified

Name of Rescuer	Duties	Methods

NOTE: This Entry Plan must be developed and implemented by a competent person who has adequate knowledge, training, and experience to organize the work, is familiar with legislation that applies to the work, and has knowledge of any potential or actual danger to health or safety in the workplace.

Entry Plan prepared by:

Name: _____ Position: _____

Dept./Contractor: _____ Phone: _____

Signature: _____ Date: _____

Coordination document (Form C) required and attached: Yes N/A

Appendix I: Form C – Coordination Document

CONFINED SPACE NUMBER: / ____ / - / ____ / - / ____ / Building Group Number	DATE OF ENTRY: ____ / ____ / ____ - ____ DD MM YYYY
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NOTE: This Co-ordination Document ONLY needs to be filled out IF there will be workers from more than one employer (i.e. UofT employee(s) AND outside contractor(s)) performing work in the same confined space or related work with respect to the same confined space.

The University of Toronto (as the lead employer) and the following contractor(s) will be doing work in or related to the same Confined Space. In order that the work is done in a manner which protects the health and safety of ALL workers and according to the U of T Confined Space Program, the following terms and conditions have been agreed upon. If, during the course of the work, any changes are required or new issues are discovered, the work will be suspended until such changes have been discussed, resolved, recorded and signed off by all employers. A copy of this document will be provided to each employer, the JHSC/Representative of each employer (or, if none, the employees of each employer).

Campus / Area / Building / Room Number (or Location): _____

Type of space: Pit Tank Boiler Cable Chamber
 Other, please specify _____

Reason(s) for Work: _____

Brief description of work to be done by the University: _____

Name of Contractor(s): _____

Brief description of work to be done by the contractor(s): _____

The UofT Confined Space Program has been reviewed and understood by ALL participants: Yes <input type="checkbox"/>
General Confined Space training of ALL participants has been verified: Yes <input type="checkbox"/>
Entry Plan specific training for ALL participants has been conducted: Yes <input type="checkbox"/>
by: _____ (name, employer)

Documents Available:
<input type="checkbox"/> Hazard Assessment prepared by: _____ (name, UofT owner of CS)
<input type="checkbox"/> Entry Plan prepared by: _____ (name, employer)
<input type="checkbox"/> On-Site Rescue Plan prepared by: _____ (name, employer)
<input type="checkbox"/> Entry Permit prepared and maintained by: _____ (name, employer)

The attendant(s) will be provided by: _____
(employer)

Appendix I: Form C – Coordination Document

Safe entry and exit will be by: _____
(describe method, e.g. ladder, winch)

Unauthorized entry will be prevented by: _____
(describe method – e.g. signs, locks, special tools)

Atmospheric testing equipment will be supplied by _____ and operated by _____
(employer) (name)

Procedures & controls are in place for working in flammable or explosive atmospheres: Yes N/A

Ventilation/purging equipment will be supplied by _____ and operated by _____
(employer) (name)

Isolation of energy & control of materials movement (Lockout, etc.) will be done by: _____
(employer, name)

Primary and back up communication will be supplied by: _____
(employer)

Rescue equipment will be provided by: _____
(employer)

On-site rescue procedures will be performed by: _____
(employer, name,)

Other control measures to be provided by _____ & operated by _____
(employer) (name)

Other Comments: _____

The undersigned agree to the above conditions.

ON BEHALF OF UofT:
NAME (print): _____
JOB TITLE: _____
DEPT: _____
PHONE/MIKE: _____
SIGNATURE: _____
DATE: _____

ON BEHALF OF CONTRACTOR:
NAME (print): _____
JOB TITLE: _____
COMPANY NAME: _____
PHONE: _____
SIGNATURE: _____
DATE: _____

Appendix J: Entry Permit (Permit must be available at the job site)

ENTRY PERMIT

Date: _____

Confined Space Number: / _____ /- / _____ /- / _____ /
Building Group Number

Permit number: _____ (Confined Space number – Date)

Location of confined space: _____
(Campus, building, floor/room)

Description of the work to be done: _____

Assessment and Controls:

- Form A Hazard Assessment has been completed or if required, updated based on work scope.
- Form B Entry and On-Site Rescue Plans or corresponding SOP has been completed and attached
- Form C Co-ordination Document, if needed, has been completed and is attached.
- If work lasts for more than 1 shift, a new permit has been issued and Form B Hazard Assessment/SOP has been reviewed to ensure that conditions have not changed between shifts.
- All controls on Entry Plan have been inspected and implemented.
- All emergency and rescue equipment has been inspected and is in good working order
- Hot work permit, if needed, is attached and controls have been implemented.
- Gas monitor has been inspected and bump tested.
- All participants have had general confined space training.
- All workers have been trained on Entry Plan and On-site Rescue plan.
- Rescuers have required training (on-site rescue procedures, first aid/CPR, use of rescue equipment).

Plan-Specific Training Record:

The following workers have been trained on the Entry Plan and the On-site Rescue Plan for this confined space entry.

Instructors Name: _____ Training Date: _____

Name	Company	Role: entrant, attendant, rescuer, entry supervisor	Signature

Description of hazards:

- Oxygen Deficiency (<19.5%) Oxygen Enrichment (>23%) Carbon Monoxide
- Hydrogen Sulphide Flammable or Combustible Atmospheres
- Other atmospheric hazards: _____
- Biological Stored Energy Engulfment Mechanical contact or Moving Parts
- Electrical Temperature/weather Difficult entry/exits Working at Heights
- Ergonomics Noise
- Other hazards not listed: _____

Comments: _____

Appendix J: Entry Permit (Permit must be available at the job site)

Control of hazards:

List controls used for each hazard addressed above and verify that they are in place. Refer to Hazard Assessment and the Entry & Rescue Plan as needed.

Control	Description
Space Preparation Methods	
Ventilation	
Hazardous Energy Isolation, Control of Materials Movement	
Pipeline Isolation	
Work Equipment Required	
Communication Methods	
Emergency Phone Number	
Personal Protective Equipment (PPE)	
Rescue Equipment	
	Rescue Equipment in good working order? Yes No (circle one)
Hot work provisions	(Attach Hot Work Permit)

Safety Attendant/Atmospheric Testing

Name of the Safety Attendant: _____ Company: _____

Oxygen Combustibles/Flammables Carbon Monoxide Hydrogen Sulfide Other(s): _____

Continuous monitoring Yes No Periodic monitoring (state frequency) _____

Multi-gas detector Remote sampling probe Colourimetric tubes/pump Other _____

Operated by: _____ Initials: _____ Dept./Contractor: _____

Instrument(s) Name
/Model No./Serial No.

Factory Calibration Date(s):

Span Gas/Bump Test Date(s):

_____	_____	_____
_____	_____	_____
_____	_____	_____

Appendix J: Entry Permit (Permit must be available at the job site)

Authorization

NOTE: This Entry Permit must be authorized by a competent person who has adequate knowledge, training, and experience to organize the work, is familiar with legislation that applies to the work, and has knowledge of any potential or actual danger to health or safety in the workplace.

This permit is valid from _____ am/pm on _____ to _____ am/pm on _____ ONLY
(time) (date) (time) (date)

This permit must be available at the job site.

Permit is void if any of the following occurs: -significant deviation from conditions noted in assessment
-change in personnel
-date/time has expired

I have reviewed the Hazard Assessment, Coordination Document (if applicable), Entry Plan, On-Site Rescue Plan and this Entry Permit and authorize the listed employees to enter and conduct work in accordance with the UofT Confined Space Program.

Authorized by:

Name: _____ Position: _____ Dept./Contractor: _____

Phone: _____ Signature: _____ Date: _____

Permit Cancellation

I hereby confirm that the work related to this permit has been completed and no workers remain in the space.

Permit cancelled by:

Name: _____ Position: _____ Dept./Contractor: _____

Phone: _____ Signature: _____ Date: _____