



CONFINED SPACE ENTRY PROCEDURES

CONFINED SPACE NAME: Sumps (storm and sanitary)
ID # N/A

LOCATION: Library (2), Gerry Brewer Building (2), Fire Hall (2)

EP # 7

DATE: November 2012

HAZARDOUS ATMOSPHERIC RATING: **Moderate**

SCOPE OF WORK (From Hazard Assessment)

This Hazard Assessment (HA) refers to entry for the purpose of inspection (e.g., inspection of check valves and isolation valves). The majority of the work will be conducted from outside the space and includes removal of objects (debris, leaves) with a sucker truck (if required) and periodic maintenance of pumps with manual tools – the pumps are removed from the space via the chain and guard rails.

Hot work and other atmospheric contaminant generating activities are not included in this Hazard Assessment.

SUMMARY OF POTENTIAL HAZARDS

| | Hazards | Undisturbed Space | Work Tasks | Additional Comments |
|-----------------|-------------------------------------|-------------------|------------|---|
| ATMOSPHERE | Oxygen (O ₂) Deficiency | Yes | No | See Hazard Assessment for additional details. |
| | O ₂ Enrichment | No | No | |
| | Chemical | Yes | No | |
| | Biological Hazards | Yes | No | |
| | Fire/Explosion | Yes | No | |
| SAFETY HAZARDS | Structural | No | No | |
| | Engulfment | Yes | No | |
| | Entrapment | No | No | |
| | Electrical | Yes | No | |
| | Access/egress | Yes | No | |
| | Fall | No | No | |
| | Slip/Trip | Yes | No | |
| | Visibility/Light Level | Yes | No | |
| | Baffles/internal arrangement | Yes | No | |
| | Floor openings in space | No | No | |
| PHYSICAL AGENTS | Noise/Vibration | No | No | |
| | Temperature | No | No | |
| | Non/Ionizing Radiation | No | No | |
| | Laser | No | No | |
| OTHERS | Ingestion/Skin Contact | Yes | No | |
| | Mechanical | No | No | |
| | Traffic Hazard | Yes | No | |
| | Hydraulic/ Pneumatic | No | No | |

COMPLETED BY:

Prepared by: Peter Bergholz, BSc, CIH, AMEC, November 2012

Reviewed by: Victor Leung, MSc, CIH, ROH, CRSP, AMEC, November 2012

SOURCE: Paul Elsoff & Richard Howard

This Entry Procedure pertains to the activity and confined space listed above. This entry procedure is required to be reviewed within 3 years of preparation. Any change in activity requires a review of the related HA and a review of the entry procedures (especially when contaminants will be generated by an activity such as welding, radiation or chemical usage).



CONFINED SPACE ENTRY PROCEDURES

CONFINED SPACE NAME:

ID #

Sumps (storm and sanitary)

N/A

LOCATION:

Library (2), Gerry Brewer Building (2), Fire Hall (2)

EP #

7

DATE:

November 2012

HAZARDOUS ATMOSPHERIC RATING:

Moderate

| Topics | No. | Tasks/ Equipment Required |
|-------------------------------------|-----|--|
| Prior to Entry | | |
| Equipment Required | 1. | <p>Ensure the following is available:</p> <ul style="list-style-type: none"> Pick up gas detector (with pump). Gas detector must be bump tested and/or calibrated prior to use and have the following sensors: <ul style="list-style-type: none"> oxygen (O₂), flammable/combustibles (LEL), carbon monoxide (CO), and hydrogen sulphide (H₂S) (City standard) Blower with a minimum of 50 CFM Two-way radio and/or cellular telephone (for Standby Person and Entry Supervisor) Sucker truck/vacuum truck Portable lighting (flashlight or portable lighting with GFCI) Portable ladder Primary barriers/pylons |
| | 2. | <p>General PPE:</p> <ul style="list-style-type: none"> Coveralls Safety boots Work gloves Hard hat Safety glasses with side shields <p>For sanitary sumps, disposable Tyvek coveralls and disposable nitrile gloves are recommended.</p> |
| | 3. | <p>Rescue equipment:</p> <ul style="list-style-type: none"> Harness (worn) Lifeline (attached at all times) |
| Entry Permit/Gas Testing Log | 4. | Complete and post the Confined Space Entry Permit at the entrance. (NOTE: Update the Permit accordingly.) |
| | 5. | Entry Supervisor to sign Confined Space Entry Permit once all equipment is ready to be installed and observe initial entry. |
| Space Preparation | 6. | Erect primary barriers around opening to the space to isolate space from vehicular and pedestrian traffic. |
| | 7. | If required (storm sump entry), rinse space prior to entry if space contains large amounts of bacteria/fungi/sludge. For sanitary sump entry rinse space prior to entry. Remove water and objects (debris, leaves) from outside the space with sucker truck. |

COMPLETED BY:

Prepared by: Peter Bergholz, BSc, CIH, AMEC, November 2012

Reviewed by: Victor Leung, MSc, CIH, ROH, CRSP, AMEC, November 2012

SOURCE: Paul Elsoff & Richard Howard

This Entry Procedure pertains to the activity and confined space listed above. This entry procedure is required to be reviewed within 3 years of preparation. Any change in activity requires a review of the related HA and a review of the entry procedures (especially when contaminants will be generated by an activity such as welding, radiation or chemical usage).



CONFINED SPACE ENTRY PROCEDURES

CONFINED SPACE NAME:

ID #

Sumps (storm and sanitary)

N/A

LOCATION:

Library (2), Gerry Brewer Building (2), Fire Hall (2)

EP #

7

DATE:

November 2012

HAZARDOUS ATMOSPHERIC RATING:

Moderate

| Topics | No. | Tasks/ Equipment Required |
|------------------------------|-----|---|
| Pre-Work Coordination | 8. | Entry Supervisor to evaluate liquid level prior to entry. Entry prohibited if the flow level is surcharging (the flow level must be stabilized or receding in order to enter) and entry prohibited when significant precipitation is forecasted in the catchment area during entry. |
| | 9. | Inspect all equipment for damage before use. Remove damaged equipment from service. |
| | 10. | Portable ladder required to be set-up. |
| | 11. | Standby and Entry Supervisor must have a two-way radio and/or cellular telephone. |
| | 12. | Standby must have training in monitoring duties, initiating emergency response, operation of retrieval equipment and removal of injured victims using this equipment. |
| | 13. | Rescue personnel must have training in first aid and CPR. |
| | 14. | Rescue equipment must be available and worn at all times (harness, lifeline). |
| Isolation and Lockout | 15. | Electrical source (pumps/electrical switches) must be locked out <ul style="list-style-type: none"> Follow space specific lockout document. Document must be available on-site prior to work. Isolation of the space is not possible. Entry Supervisor to evaluate liquid level prior to entry. Entry prohibited if the flow level is surcharging and when significant precipitation is forecasted in the catchment area during entry. |
| | | |
| Gas Testing | 16. | Persons calibrating/bump testing and operating the instrument must have appropriate training. |
| | 17. | Test the atmosphere no more than 20 minutes prior to entry; continuously during entry and if the space is left vacant for more than 20 minutes. Record the results on the Confined Space Entry Permit every 20 minutes. |
| | 18. | Measure gas concentrations at the top, middle and bottom of the space (using pump and tubing). <i>Remember there is a delay in response as air is pumped into the instrument (approx. 1 sec per foot) and there is additional sensor response time.</i> |
| | 19. | Allowable gas concentrations (before and during entry): Entry and work in the space can occur only if the following conditions are met: <ul style="list-style-type: none"> O₂: 19.5 – 23 % LEL: ≤ 2 % (since methane is a concern) CO: ≤ 25 ppm H₂S: ≤ 10 ppm If these criteria cannot be met then the space must be evacuated. NOTE: The space cannot be re-entered until levels are brought within the acceptable concentrations listed above (adjust ventilation, re-calibrate gas tester etc.). |


COMPLETED BY:

Prepared by: Peter Bergholz, BSc, CIH, AMEC, November 2012

Reviewed by: Victor Leung, MSc, CIH, ROH, CRSP, AMEC, November 2012

SOURCE: Paul Elsoff & Richard Howard


This Entry Procedure pertains to the activity and confined space listed above. This entry procedure is required to be reviewed within 3 years of preparation. Any change in activity requires a review of the related HA and a review of the entry procedures (especially when contaminants will be generated by an activity such as welding, radiation or chemical usage).

| | | | | |
|--|---|--------------------|---|---|
|  | CONFINED SPACE ENTRY PROCEDURES | | EP # 7 DATE: November 2012 | |
| | CONFINED SPACE NAME: Sumps (storm and sanitary) | ID # N/A | | LOCATION: Library (2), Gerry Brewer Building (2), Fire Hall (2) |
| | HAZARDOUS ATMOSPHERIC RATING: Moderate | | | |

| Topics | No. | Tasks/ Equipment Required |
|--|-----|--|
| | | <i>If the problem persists contact Entry Supervisor for further instructions, see Entry Permit.</i> |
| | 20. | The entrant must wear the atmospheric testing instrument. |
| Ventilation | 21. | Set up blower (minimum 50 cfm) with duct through the entrance hole discharging at approx. 2 feet from bottom of the space. Air intake of blower must be positioned away from and upwind from any nearby combustion exhaust. Minimum ventilation requirements are based on achieving 20 air changes per hour. Ducting may be temporarily removed to allow entrant access – replace ducting inside space immediately after entry. |
| | 22. | Ventilation must be operating for 20 minutes prior to entry to allow 'clean respirable air' to circulate throughout the space. |
| During Entry | | |
| Gas Testing | 23. | Continuous monitoring required – as above. |
| | 24. | Record the gas testing results on the Confined Space Entry Permit at least every 20 minutes. |
| Ventilation | 25. | Ventilation must be running during the entire entry. Ducting may be temporarily removed to allow entrant from exiting/entering– replace ducting inside space immediately after exiting/entering. |
| Standby Person | 26. | Standby person must remain at or near the entrance to the space during the entry. |
| | 27. | Standby person must monitor traffic in the area. |
| | 28. | Standby person must monitor the flow for debris and for water levels above the stated threshold values. |
| | 29. | Standby must order the evacuation of the confined space if an alarm sounds. |
| Personal Protective Equipment (PPE) | 30. | All entrants must wear General PPE (see equipment required list above). |
| | 31. | Harness must be worn and lifeline attached at all times during entry. |
| Task/Additional Requirements | 32. | Portable lighting (flashlight or portable light with GFCI) required. |
| Rescue Plan | 33. | To activate the emergency response, Standby Person contacts 911 if first aid is required. |
| | 34. | Standby Person contacts the Entry Supervisor using radio/cell phone and advises them of the situation and Entry Supervisor will respond to the scene. |

| | | |
|----------------------|--|---|
| COMPLETED BY: | Prepared by: Peter Bergholz, BSc, CIH, AMEC, | SOURCE: Paul Elsoff & Richard Howard |
| | November 2012 | |
| | Reviewed by: Victor Leung, MSc, CIH, ROH, CRSP, AMEC, November 2012 | |

This Entry Procedure pertains to the activity and confined space listed above. This entry procedure is required to be reviewed within 3 years of preparation. Any change in activity requires a review of the related HA and a review of the entry procedures (especially when contaminants will be generated by an activity such as welding, radiation or chemical usage).

| | | | | |
|--|---|--------------------|---|---|
|  | CONFINED SPACE ENTRY PROCEDURES | | EP # 7 DATE: November 2012 | |
| | CONFINED SPACE NAME: Sumps (storm and sanitary) | ID # N/A | | LOCATION: Library (2), Gerry Brewer Building (2), Fire Hall (2) |
| | HAZARDOUS ATMOSPHERIC RATING: Moderate | | | |

| Topics | No. | Tasks/ Equipment Required |
|---------------------------------------|-----|---|
| | 35. | Ventilation can be removed temporarily to allow extraction from space since there is only one entry point. |
| | 36. | Self-rescue if possible |
| | 37. | If self-rescue is not possible: Lifeline attached: <ul style="list-style-type: none"> Standby Person removes person from space using lifeline and winch. |
| After Entry Has Been Completed | | |
| Gas Testing | 38. | After the entry, record the peak, TWA, STEL, occurrence of alarms on the Confined Space Entry Permit. |
| | 39. | Entry Supervisor to return the completed Confined Space Entry Permit to the Confined Space Program Administrator for filing (must be kept for 1 year). |
| Work Coordination | 40. | Ensure all entrants and tools have been removed from the space and secure the opening. |
| Equipment | 41. | Return all equipment to its proper location. |
| | 42. | Return gas detector to the storage location. |

| | | |
|----------------------|--|---|
| COMPLETED BY: | Prepared by: Peter Bergholz, BSc, CIH, AMEC, November 2012 | SOURCE: Paul Elsoff & Richard Howard |
| | Reviewed by: Victor Leung, MSc, CIH, ROH, CRSP, AMEC, November 2012 | |

This Entry Procedure pertains to the activity and confined space listed above. This entry procedure is required to be reviewed within 3 years of preparation. Any change in activity requires a review of the related HA and a review of the entry procedures (especially when contaminants will be generated by an activity such as welding, radiation or chemical usage).