

CSE Plan	
CSE Identification: SANITARY SEWERS	Date: November 17, 2006
Proposed Task(s): Inspection and Cleaning	
Competent Person Verification of CSE Plan (Name, Date, Signature)	

CSE Hazards and Controls		
Hazard(s)	Source(s)	Controls(s) Required
Atmospheric – Oxygen deficiency, Flammability – Methane, Toxic – Hydrogen sulfide	Decomposing organic material	Air quality monitoring (%O ₂ , %LEL, ppm CO, ppm H ₂ S) passive ventilation (intrinsically safe - powered), adequate respiratory PPE, entrant wears monitor
Fall, Slip, trip & fall	Vertical access	Adequate fall arresting / restricting system to assist in vertical access
Limited access/egress	24" manhole, vertical access	Tripod and winch – access & rescue
Biohazardous materials, wet, pests, decomposing organic materials	Decomposing organic material	Adequate skin protective gear, neoprene boots or waders, neoprene / nitrile gloves,
Engulfment, entanglement	Rain events, complex configuration	Check weather forecast, attendant tends lifelines
Unauthorized entry,	Personnel accidentally accessing the space – fall, curious bystanders	Attendant to guard access, barricades

Duties of Workers
Competent Person:
<ol style="list-style-type: none"> Review plan with entry team Ensure all hazardous energy sources are controlled (Lockout/Tag out locations, Gas Valves, Electrical, etc.) Perform air quality monitoring, using an "in calibration" instrument, throughout the vertical depth of the vessel Fill out and post in the immediate area a Confined Space Permit Monitor the worksite continuously for hazards and restrict access to hazardous areas
Attendant:
<ol style="list-style-type: none"> Assist Entrant with access/egress to the confined space Prepare, check and make readily available egress system Ensure Entrant is securely fitted with an inspected 5-point rescue harness connected to the egress line Ensure Entrant is fitted with an 4 gas monitor (in the breathing zone) Monitor the activities of the Entrant continuously for the duration of the entry Call for assistance, activate the rescue plan and operate the egress winch when Entrant requires assistance
Entrant:
<ol style="list-style-type: none"> Enter the confined space only in accordance with this Plan If uncertain of any task or one's personal safety address concerns with the Competent Person Egress the space immediately upon hearing the alarm or at the direction of the Attendant or Competent Person
All Personnel:
<ol style="list-style-type: none"> Participate in the review and signing of relevant permits Adhere to the requirements of the Plan and any other required procedures such as Lockout/Tag out Review Confined Space Entry Permit to ensure completeness Promptly assist the Entrant should he/she require assistance

Personal Protective Equipment Required (As per hazard controls):

Personal Protective Equipment Required (As per hazard controls):

Entrant Name:

Attendant Name:

Competent Person Name:

Rescue Equipment:

Pre-Entry Checklist

Pre-entry

1. A Competent Person knowledgeable in the requirements of the OSHA and confined space regulations is in charge of the job.
2. All Confined Space Entry staff are familiar with the requirements of Company Confined Space Entry Program.
3. All Confined Space Entry staff are trained and Competent in Confined Space Entry and the requirements of this plan. **Rescue procedures have been reviewed and understood.**
4. Atmospheric readings are and will continue to remain within acceptable perimeters; oxygen concentration 19.5-23.0%, less than 5, 10 or 25% (dependent on work – see program document) of the lower explosive limit, less than 10 ppm hydrogen sulfide concentration and less than 25 ppm carbon monoxide concentration.
5. A Confined Space Entry Permit has been completed and reviewed with all Personnel prior to any entry being initiated.
6. Rescue Worker(s) must have current First aid and CPR training, and are familiar with the rescue plan and equipment.

Access and Egress Procedure

Access

1. **Perform air quality tests through manhole (see above), lift lid and retest, set ventilator – blowing in**
2. **Don fall protection harness, set up tripod & self retracting lifeline (SRL) winch – test to ensure adequate function**
3. **Connect SLR to entrant’s shoulder “d” ring, Connect air quality monitor to entrant’s harness**

Egress

1. **The entrant should exit the space using the cast in rung ladder usually present in these spaces**
2. **If no ladder is available, a portable ladder may be used**
3. **The winch may be used to lift the entrant out of the space should he/she need assistance as alternative access/egress**

Rescue Plan and Rescue Equipment

Rescue Equipment:

Self: Air quality monitor on the entrant, 5 point harness, portable light, air horn – warning alarm, weather forecast check
Non Entry: Tripod winch, light, ventilator, communication device (radio, cell), stand-by personnel available
Entry: Next level of respiratory protection (APR->SCBA), back-up attendants, additional lifeline or SRL

Self Rescue Plan:	The entrant must immediately leave the space if: 1) directed to do so by the attendant or competent person; 2) the monitor on the entrant or that held by the attendant “alarms” 3) the entrant is injured; 4) the entrant experiences a breach in his/her personal protective gear; 5) the depth of the water increases to an unacceptable levels
Non-Entry Rescue Plan:	The attendant uses the tripod and winch to haul the entrant vertically out of the space – Note: the entrant should never be hauled out of a sewer horizontally or if the entrant is entangled in equipment, etc, because mechanical advantage systems (winches, rope haulers) exert high force on the entrant’s body.
Entry Rescue Plan:	If the attendant is unable to remove the entrant from the space, as previously described, 2 rescuers dressed in appropriate personal protective gear will have to enter the sewer and drag the entrant to a position where he/she can be lifted using the tripod. Adequate back up personnel must be present as attendants and rescue assistants.

ATTACHED DOCUMENTS:

LOCKOUT TAGOUT PROCEDURE
 COORDINATION DOCUMENT
 HOT WORK PERMIT

YES NO NA
 YES NO NA
 YES NO NA

CSE Plan	
CSE Identification: STORM SEWERS	Date: November 17, 2006
Proposed Task(s): Inspection and Cleaning	
Competent Person Verification of CSE Plan (Name, Date, Signature)	

CSE Hazards and Controls		
Hazard(s)	Source(s)	Controls(s) Required
Atmospheric – Oxygen deficiency, Flammability – Methane, Toxic – Hydrogen sulfide	Decomposing organic material	Air quality monitoring (%O2, %LEL, ppm CO, ppm H2S) passive ventilation (intrinsically safe - powered), adequate respiratory PPE, entrant wears monitor
Fall, Slip, trip & fall	Vertical access	Adequate fall arresting / restricting system to assist in vertical access
Limited access/egress	24" X 36" grate, vertical access	Tripod and winch – access & rescue
Biohazardous materials, wet, pests, decomposing organic materials	Decomposing organic material	Adequate skin protective gear, neoprene boots or waders, neoprene / nitrile gloves,
Engulfment, entanglement	Rain events, complex configuration	Check weather forecast, attendant tends lifelines
Unauthorized entry,	Personnel accidentally accessing the space – fall, curious bystanders	Attendant to guard access, barricades

Duties of Workers
Competent Person:
<ol style="list-style-type: none"> 1. Review plan with entry team 2. Ensure all hazardous energy sources are controlled (Lockout/Tag out locations, Gas Valves, Electrical, etc.) 3. Perform air quality monitoring, using an "in calibration" instrument, throughout the vertical depth of the vessel 4. Fill out and post in the immediate area a Confined Space Permit 5. Monitor the worksite continuously for hazards and restrict access to hazardous areas
Attendant:
<ol style="list-style-type: none"> 1. Assist Entrant with access/egress to the confined space 2. Prepare, check and make readily available egress system 3. Ensure Entrant is securely fitted with an inspected 5-point rescue harness connected to the egress line 4. Ensure Entrant is fitted with an 4 gas monitor (in the breathing zone) 5. Monitor the activities of the Entrant continuously for the duration of the entry 6. Call for assistance, activate the rescue plan and operate the egress winch when Entrant requires assistance
Entrant:
<ol style="list-style-type: none"> 1. Enter the confined space only in accordance with this Plan 2. If uncertain of any task or one's personal safety address concerns with the Competent Person 3. Egress the space immediately upon hearing the alarm or at the direction of the Attendant or Competent Person
All Personnel:
<ol style="list-style-type: none"> 1. Participate in the review and signing of relevant permits 2. Adhere to the requirements of the Plan and any other required procedures such as Lockout/Tag out 3. Review Confined Space Entry Permit to ensure completeness 4. Promptly assist the Entrant should he/she require assistance

Personal Protective Equipment Required (As per hazard controls):

Personal Protective Equipment Required (As per hazard controls):

Entrant Name:

Attendant Name:

Competent Person Name:

Rescue Equipment:

Pre-Entry Checklist

Pre-entry

1. A Competent Person knowledgeable in the requirements of the OSHA and confined space regulations is in charge of the job.
2. All Confined Space Entry staff are familiar with the requirements of Company Confined Space Entry Program.
3. All Confined Space Entry staff are trained and Competent in Confined Space Entry and the requirements of this plan. **Rescue procedures have been reviewed and understood.**
4. Atmospheric readings are and will continue to remain within acceptable perimeters; oxygen concentration 19.5-23.0%, less than 5, 10 or 25% (dependent on work – see program document) of the lower explosive limit, less than 10 ppm hydrogen sulfide concentration and less than 25 ppm carbon monoxide concentration.
5. A Confined Space Entry Permit has been completed and reviewed with all Personnel prior to any entry being initiated.
6. Rescue Worker(s) must have current First aid and CPR training, and are familiar with the rescue plan and equipment.

Access and Egress Procedure

Access

1. **Perform air quality tests through grate holes (see above), lift lid and retest, set ventilator – blowing in**
2. **Don fall protection harness, set up tripod & self retracting lifeline (SRL) winch – test to ensure adequate function**
3. **Connect SLR to entrant’s shoulder “d” ring, Connect air quality monitor to entrant’s harness**

Egress

1. **The entrant should exit the space using the cast in rung ladder usually present in these spaces**
2. **If no ladder is available, a portable ladder may be used**
3. **The winch may be used to lift the entrant out of the space should he/she need assistance as alternative access/egress**

Rescue Plan and Rescue Equipment

Rescue Equipment:

Self: Air quality monitor on the entrant, 5 point harness, portable light, air horn – warning alarm, weather forecast check
Non Entry: Tripod winch, light, ventilator, communication device (radio, cell), stand-by personnel available
Entry: Next level of respiratory protection (APR->SCBA), back-up attendants, additional lifeline or SRL

Self Rescue Plan:	The entrant must immediately leave the space if: 1) directed to do so by the attendant or competent person; 2) the monitor on the entrant or that held by the attendant “alarms” 3) the entrant is injured; 4) the entrant experiences a breach in his/her personal protective gear; 5) the depth of the water increases to an unacceptable levels
Non-Entry Rescue Plan:	The attendant uses the tripod and winch to haul the entrant vertically out of the space – Note: the entrant should never be hauled out of a sewer horizontally or if the entrant is entangled in equipment, etc, because mechanical advantage systems (winches, rope haulers) exert high force on the entrant’s body.
Entry Rescue Plan:	If the attendant is unable to remove the entrant from the space, as previously described, 2 rescuers dressed in appropriate personal protective gear will have to enter the sewer and drag the entrant to a position where he/she can be lifted using the tripod. Adequate back up personnel must be present as attendants and rescue assistants.

ATTACHED DOCUMENTS:

LOCKOUT TAGOUT PROCEDURE
 COORDINATION DOCUMENT
 HOT WORK PERMIT

YES NO NA
 YES NO NA
 YES NO NA

CSE Plan	
CSE Identification: UTILITY VAULTS	Date: November 17, 2006
Proposed Task(s): Servicing, Inspection and Cleaning	
Competent Person Verification of CSE Plan (Name, Date, Signature)	

CSE Hazards and Controls		
Hazard(s)	Source(s)	Controls(s) Required
Atmospheric – Oxygen deficiency, Flammability – Methane, Toxic – Hydrogen sulfide	Decomposing organic material	Air quality monitoring (%O ₂ , %LEL, ppm CO, ppm H ₂ S) passive ventilation (intrinsically safe - powered), adequate respiratory PPE, entrant wears monitor
Fall, Slip, trip & fall	Vertical access	Adequate fall arresting / restricting system to assist in vertical access
Limited access/egress, entanglement	Variable manhole covers, vertical access, complex configuration	Tripod and winch – access & rescue, attendant tends lifelines
Wet, pests, possible decomposing organic materials	Possible decomposing organic material	Adequate skin protective gear, neoprene boots or waders, neoprene / nitrile gloves as required
Energy	Electrical and water services	Lockout / Tagout as adequate to protect a worker
Unauthorized entry,	Personnel accidentally accessing the space – fall, curious bystanders	Attendant to guard access, barricades

Duties of Workers
Competent Person:
<ol style="list-style-type: none"> 1. Review plan with entry team 2. Ensure all hazardous energy sources are controlled (Lockout/Tag out locations, Gas Valves, Electrical, etc.) 3. Perform air quality monitoring, using an “in calibration” instrument, throughout the vertical depth of the vessel 4. Fill out and post in the immediate area a Confined Space Permit 5. Monitor the worksite continuously for hazards and restrict access to hazardous areas
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Personal Protective Equipment Required (As per hazard controls):

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Attendant Name:

Competent Person Name:

Rescue Equipment:

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6. Rescue Worker(s) must have current First aid and CPR training, and are familiar with the rescue plan and equipment.

Access and Egress Procedure

Access

1. Perform air quality tests through pick holes of lid (see above), lift lid and retest, set ventilator – blowing in
2. Don fall protection harness, set up tripod & self retracting lifeline (SRL) winch – test to ensure adequate function
3. Connect SLR to entrant’s shoulder “d” ring, Connect air quality monitor to entrant’s harness

Egress

1. The entrant should exit the space using the cast in rung ladder usually present in these spaces
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