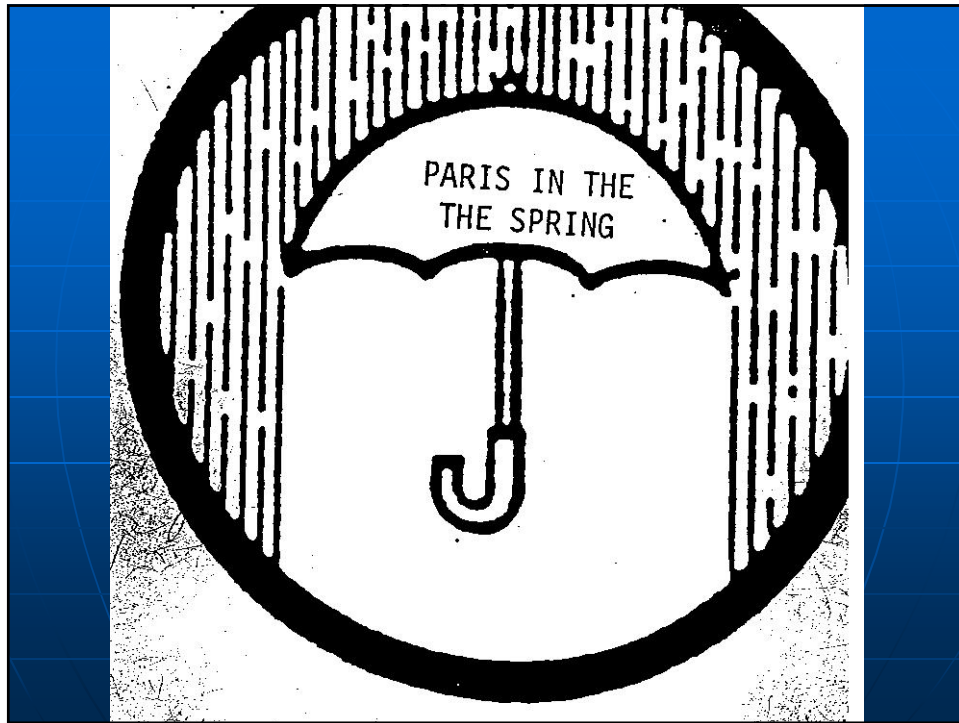


Process for Identifying Confined Spaces

Warren K Brown,
CSP, ARM, CSHM

Wynn Stewart, of Dupont --

**“It ain’t what
you forget
that hurts
you, it’s what
you know for
sure that
just ain’t so.”**



Bahrain 2010



Bahrain 2010



IDENTIFYING CONFINED SPACES

- PROOF OF THE NEED
- SOME DEFINITIONS
- THE PROCESS
- DOCUMENTING THE PROCESS

IDENTIFYING CONFINED SPACES

- PROOF OF NEED
 - Fatalities usually result from lack of procedure.
 - Unapproved lighting system results in fire
 - Flammable gas leaked into space
 - Failure to follow lockout procedure
 - Equipment failure or malfunction
 - No test for toxic or oxygen deficient atmosphere
 - Entry was made for no known reason
 - Failed to use safety harness and lifeline

Altruism

- Unselfish regard for others and the behavior may be harmful to the person exhibiting altruism.
- Studies have indicated that we may be programmed biologically to help others in an altruistic manner.
- Safety professionals must remind would be rescuers to beware of the risk associated with a rescue.

Altruism

- It is important to point out the dangers that may surround a confined space rescue. If you attempt a rescue without appropriate precautions you may die and others who may be involved may die.
- Remind your audience of the importance of not being misled by their altruistic feelings.

Confined Space Fatalities

- From Safteng.net
- (2014= 49)
- (2013= 85)
- (2012= 54)
- (2011 = 62)
- (2010 = 112)
- (2009 = 73)
- (2008 =137)

WORKER KILLED IN STEEL MILL FURNACE: A steel mill worker was accidentally locked in a 250-degree furnace and tried to claw his way out before he died, Lima police said. Sections of insulation around the door of the machine at the [REDACTED] plant had been ripped away, [REDACTED] 43, had been in the furnace about six hours before fellow employees found his body Sunday, Shawnee Twp. police said.

Man suffocates in corn bin

An Auglaize County man died Friday after he apparently fell into a corn bin at Auglaize Farmers in Uniopolis and suffocated, authorities said. Thomas [REDACTED] 62, of Cridersville was pronounced dead at the scene by the Auglaize County coroner. The Auglaize County sheriff's office said body was found about 2:45 p.m.

ONE KILLED, ONE HURT AT LANDFILL: Robert 25, of Dellroy was killed Monday when he fell from a ladder into a 35-foot shaft at a landfill near the Stark County-Carroll County line. A co-worker, Thomas 26, climbed down the ladder but lost consciousness at the base of the shaft, Stark County Sheriff W. Bruce Umpleby said. It is unknown what overcame the sheriff said. of Malvern was in critical condition Tuesday at Aultman Hospital.

FUMES FATAL FOR RESCUER: Thomas 26, of Malvern, died Thursday from injuries he received while trying to rescue a co-worker from a Sandy Twp. landfill well near Akron. Robert 25, of Dellroy, died Monday when he fell about 30 feet into 4 to 5 feet of water at the base of a well shaft. had gone down to rescue when he was overcome by fumes and gases and had to be pulled up by other workers.

Sewer-line work fatal for 2 men

TWINSBURG — Two men suffocated Friday while they were working on a sewer line at a Summit County housing development.

The men were working for an engineering survey company that was a subcontractor on the sewer line at a new housing development between Akron and Cleveland, Twinsburg Fire Chief Richard Racine said.

One man entered the manhole but could not escape after he began to feel faint. The second man apparently tried to save him.

Racine said the victims were 26 and 53 years old.

Solvent kills worker

A 19-year-old Springfield man who died Friday in an industrial accident was overcome after he went into a vat of degreasing chemicals to retrieve a clipboard he'd dropped, a co-worker said.

Dead is [REDACTED]. The accident occurred at [REDACTED] Industries in Springfield. The vat contained trichloroethylene, a cleaning solvent that can cause unconsciousness and death in high concentrations. A co-worker said [REDACTED] dropped a clipboard of papers into the vat and climbed into the vat to retrieve it.

Incident- 2/4/10- Minnesota

- After nearly 8 hours emergency workers rescued an elevator manager who was trapped inside a corn silo. At about 7:30 PM the manager was rescued from the 50 foot deep silo he fell into at 11:20 AM. When a truck was being loaded he went into the silo to loosen a clog-the corn shifted below him pinning him against the wall chest deep. Rescue workers built a plywood box around him and scooped the corn out. After nearly 8 hours he was lowered to the ground with a SCBA on his back placed there by rescue workers. He survived the ordeal.

Incident- 2/9/10- Wisconsin

- A man was freed from a grain bin after being trapped for 4 hours with no apparent injuries. Rescue workers used saws to cut through the sides of the metal grain bin to unload grain so they could reach the victim. They had to use front end loaders to move the grain that poured out. Grain bin entrapment can be deadly. According to Texas A&M university extension, more than 200 farmers in the US alone have died in grain bin suffocation incidents over the past three decades.

Incident-2/9/10

- Construction worker dies inside unused sewer line attempting to pull out a valve. Likely he was exposed to hydrogen sulfide but not determined yet. Investigation to determine if procedures for entry were followed. Managers indicated that procedures for confined spaces should have been followed.

Incident-12/31/09-Africa

- Four employees lost their lives in a steel mill oven. Initial information indicates that there may have been nitrogen gas at a high level in the oven. The oven had been idle for a week to allow maintenance work to be performed.

Incident- 1/7/10-Southeast Asia

- Four workers die cleaning sewer. Preliminary information indicated high water levels and the workers had no safety equipment other than a flashlight. An official indicated that equipment was available but evidently was not used. This type of work is generally not performed by regular employees and the workers may have not received significant safety training. Rain at the time caused higher than expected water levels.

Incidents– 2/2010

- Five more deaths and three near death in US and Philippines—Working inside underground storage tanks putting coatings on tanks—unclear how much confined space entry procedure in place at this time.

November 2014 Incident

- Long time employee died from grain engulfment in a grain storage bin-victim had been trained and was using appropriate equipment and following company confined space entry procedures.
- This event occurred in Minnesota

February 2014 Incident

- Grain bin was being unloaded-victim had been in and out of bin but was thought to have left the scene-when it was determined that he had not left the scene, after 6.5 hours of emptying the bin the victim was located inside the bin-coroner pronounced him dead at the scene.

April 2012 Incident

- Five workers installing piping in shaft valve in a glass making plant in Northwest China suffocated. Investigation was continuing.

January 2012 Incident

- Worker cleaning a boiler in a chemical factory died from inhaling a poisonous gas-his son and an engineer suffer same fate as they attempted a rescue-fire service eventually removed the victims.

IDENTIFYING CONFINED SPACES

■ DEFINITIONS:

- A confined space is an area that:
 - has limited or restricted means of entry or exit-**and**
 - is large enough for a worker to enter and perform an assigned task-**and**
 - is not designed for continuous employee occupancy.

Any open top tank or pit more than four (4) feet deep that meets the above conditions is also considered a confined space.

IDENTIFYING CONFINED SPACES

- | | |
|---------------------|----------------------|
| ■ STORAGE TANKS | ■ BOILERS |
| ■ DEGREASERS | ■ FURNACES |
| ■ PITS | ■ VATS |
| ■ VENTILATION DUCTS | ■ SEWERS |
| ■ MACHINERY PITS | ■ TUNNELS |
| ■ VESSELS | ■ SILOS |
| ■ MANHOLES | ■ OPEN SURFACE TANKS |

IDENTIFYING CONFINED SPACES

- **CAUTION:** There may be spaces that a worker cannot completely enter but may as a result of the work task requirements introduce an atmospheric hazard. Even though the space does not strictly meet the confined space requirements, some confined space procedures may need to be used.

IDENTIFYING CONFINED SPACES

- Entry into a confined space occurs when any part of the entrants body enters the opening into the space.
- What has previously been stored in a confined space must be considered.
- What is being taken into a confined space must be considered also.

IDENTIFYING CONFINED SPACES

- Classifying confined spaces:
 - All confined spaces must be evaluated and classified as :
 - non-permit confined space
 - permit-required confined space

People are then informed by posted signs at each space and a confined space log should be maintained and updated as conditions warrant.

IDENTIFYING CONFINED SPACES

- Non-permit confined space:
 - A confined space that does not contain or have the potential to contain any hazard capable of causing death or serious physical harm. Examples would be areas with natural or permanent ventilation that will not allow accumulations of hazardous atmospheres. If there is a change in configuration the area must be re-evaluated.

IDENTIFYING CONFINED SPACES

- Permit-required confined space contains or has potential to contain one or more of:
 - Atmosphere hazard
 - Engulfment hazard
 - Configuration hazard
 - Any other recognized serious safety or health hazard

IDENTIFYING CONFINED SPACES

- Hazardous atmosphere may expose employee to serious risk of death, incapacitation, impairment, injury or acute illness.
- Hazardous atmosphere:
 - Oxygen concentration is below 19.5% or above 23.5%
 - Flammable gas, vapor or mist exceeds 10% of its lower flammable limit(LFL)

IDENTIFYING CONFINED SPACES

- Airborne dust concentration meeting or exceeding the LFL.
- Atmospheric concentration of a substance whose TLV exceeds acceptable standards.
- Any other atmospheric hazard that could impair an employees ability to escape or be IDLH.

IDENTIFYING CONFINED SPACES

- Engulfment hazard:
 - Surrounding and capture of a person by a liquid or finely divided flowable solid substance such as grain, salt, sand or plastic pellets. The substance can either plug the respiratory system or constrict breathing by exerting pressure on the outside of the body. Trenching cave-ins could fall into this category as well as bridged materials in a silo for example.

IDENTIFYING CONFINED SPACES

- Configuration hazards:
 - An internal configuration that could trap and or asphyxiate an employee. Examples could be inwardly converging walls or a chute that tapers to a smaller cross section. Mixing tanks, grain processing tanks, sand chutes and duct work could fall into this category.

IDENTIFYING CONFINED SPACES

- Other Hazards:
 - A hazard capable of causing death or serious physical harm. Examples could be high pressure gas lines, steam lines, footing problems, temperature extremes, electrical concerns, minimum work room and mechanical problems.

IDENTIFYING CONFINED SPACES

- The process:
 - Procure a confined space hazard analysis form
 - Analyze maps and drawings of your facilities-you will need at least three maps and drawings-one of the main floor, one of the underground environment and one of the roof. Additional floors, mezzanines, vaults and penthouses must be looked at as well. Don't forget the area around the perimeter of your facility.

IDENTIFYING CONFINED SPACES

- Document the process :
 - Complete a Confined Space Hazard Analysis Form for each suspected space.
 - All spaces that are considered confined spaces are then transferred to the confined space log.
 - Create a separate log for permit and non-permit confined spaces.
 - Have the spaces marked with an appropriate sign.

IDENTIFYING CONFINED SPACES

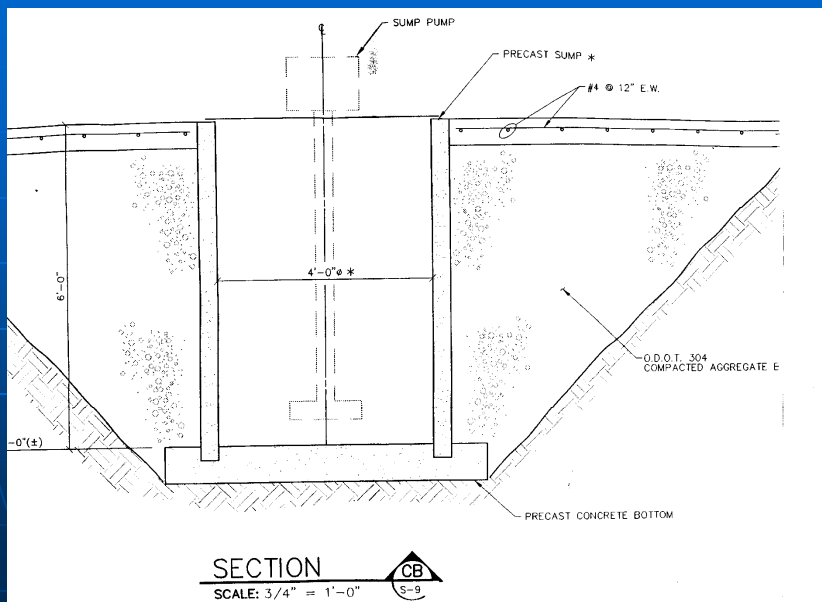
- The process (continued):
 - When looking at the maps and drawings be looking for manholes, pits, tanks, storm drains, furnaces, bins, hoppers, vaults, vessels, silos and ducts.
 - Make an all important walk through looking at potential sites identified in the preliminary evaluation as well as sites observed during the walk through.

<div style="border: 1px solid black; display: inline-block; padding: 2px 5px;"> CONFINED SPACE HAZARD ANALYSIS FORM </div>	
Description of Space _____ Date _____ Column # _____ Machine # _____	
Is the area a confined space? (Must meet all three conditions.) <input type="checkbox"/> 1. Has a limited or restricted means of entry. <input type="checkbox"/> 2. Is large enough for a worker to enter and perform assigned task. <input type="checkbox"/> 3. Is not designed for continuous employee occupancy.	
The area being reviewed is a confined space because it meets all the conditions above and also: _____ is an open top tank or pit more than 4 ft. deep. The area is a permit required confined space because it contains one or more of the following hazards: (A non-permit required confined space could never contain one of these hazards.)	
<div style="border: 1px solid black; padding: 2px;"> 1. Atmospheric Hazard <input type="checkbox"/> Oxygen concentration concern <input type="checkbox"/> Flammable substance concern <input type="checkbox"/> Dust concentration concern <input type="checkbox"/> Toxic substance concern <input type="checkbox"/> Pressure/Vacuum concern <input type="checkbox"/> Other atmospheric concern Describe: _____ </div>	<div style="border: 1px solid black; padding: 2px;"> 4. Other Serious Hazards <input type="checkbox"/> High pressure steam lines <input type="checkbox"/> Natural gas lines <input type="checkbox"/> Chemical/hazardous material lines <input type="checkbox"/> Mechanical concerns <input type="checkbox"/> Other serious concerns Describe: _____ </div>
<div style="border: 1px solid black; padding: 2px;"> 2. Engulfment Hazard <input type="checkbox"/> Engulfment by liquids <input type="checkbox"/> Engulfment by flowable solid <input type="checkbox"/> Other engulfment concern Describe: _____ </div>	<div style="border: 1px solid black; padding: 2px;"> 5. Additional Concerns <input type="checkbox"/> Insecure footing <input type="checkbox"/> Wet/Slippery conditions <input type="checkbox"/> Electrical concerns <input type="checkbox"/> Chemical/hazardous material residue <input type="checkbox"/> Minimum work room <input type="checkbox"/> Poor Lighting <input type="checkbox"/> Excessive noise <input type="checkbox"/> Temperature extremes <input type="checkbox"/> Weather conditions <input type="checkbox"/> Asbestos <input type="checkbox"/> Organic materials <input type="checkbox"/> Falling objects <input type="checkbox"/> Sharp surfaces/objects <input type="checkbox"/> Poor Ventilation </div>
<div style="border: 1px solid black; padding: 2px;"> 3. Configuration Hazard <input type="checkbox"/> Floors slope downward and/or taper <input type="checkbox"/> Walls converge inward <input type="checkbox"/> Obstructions and/or difficult to exit <input type="checkbox"/> Other configuration concerns Describe: _____ </div>	
Comments: _____ _____ _____	
<div style="border: 1px solid black; display: inline-block; padding: 2px 5px;"> 1 of 1 Confined ppt 4-17-00 REV. 2 Written by Cherie Paulsok, clerk. Approved by _____ as Safety Supervisor </div>	

Hazard Analysis Form	
and Description of Space _____ Date _____ ID# _____ Bay/Column _____ Name _____ (Person completing form)	
Instructions: Determine if the area is a confined space. Mark all boxes that apply. Is the area being reviewed a confined space because it: <input type="checkbox"/> has limited or restricted means of entry or exit <input type="checkbox"/> is not designed for continuous employee occupancy (all must apply) <input type="checkbox"/> is large enough for a worker to enter and perform the task assigned	
Is the area being reviewed a confined space because it meets the conditions above and: <input type="checkbox"/> is an open-top tank or pit more than 4 feet deep	
Instructions: If the area is a confined space, determine if it is permit-required. Mark all boxes that apply. Is it a permit-required confined space because it contains or has the potential to contain: <input type="checkbox"/> an atmospheric hazard <input type="checkbox"/> a configuration hazard <input type="checkbox"/> an engulfment hazard <input type="checkbox"/> a recognized serious safety or health hazard	
Instructions: For each hazard or potential hazard identified, mark the appropriate boxes and describe the conditions where indicated.	
Atmospheric Hazard Source: _____ <input type="checkbox"/> oxygen concentration below 19.5% or above 23.5% <input type="checkbox"/> flammable substances at or above 10% LFL <input type="checkbox"/> dust concentration at or above its LFL <input type="checkbox"/> toxic substance exposure in excess of permissible limits <input type="checkbox"/> other atmospheric conditions that may be IDLH Describe: _____ Controls: <input type="checkbox"/> Ventilate space <input type="checkbox"/> Remove Source <input type="checkbox"/> Lockout <input type="checkbox"/> Other _____ Additional Comments: _____	3. Configuration Hazard Source: _____ <input type="checkbox"/> floors slope downward, an/or taper to small cross-section <input type="checkbox"/> inwardly converging walls <input type="checkbox"/> other configuration hazard Describe: _____ Controls: <input type="checkbox"/> Temporary platform <input type="checkbox"/> Fall Hazard Equipment <input type="checkbox"/> Other _____ Additional Comments: _____
Engulfment Hazard Source: _____ <input type="checkbox"/> engulfment by liquid <input type="checkbox"/> engulfment by flowable solid substances <input type="checkbox"/> other engulfment hazard Describe: _____ Controls: <input type="checkbox"/> Lockout <input type="checkbox"/> Blanking <input type="checkbox"/> Cap <input type="checkbox"/> Separate & Misalign <input type="checkbox"/> Other _____ Additional Comments: _____	4. Other Serious Hazards Source: _____ <input type="checkbox"/> high pressure steam lines <input type="checkbox"/> natural gas lines <input type="checkbox"/> chemical/hazardous material lines <input type="checkbox"/> mechanical hazards <input type="checkbox"/> other serious hazards Describe: _____ Controls: <input type="checkbox"/> Lockout <input type="checkbox"/> Blanking <input type="checkbox"/> Cap <input type="checkbox"/> Separate & Misalign <input type="checkbox"/> Other _____ Additional Comments: _____

Instructions: Note any other conditions that make working in the space hazardous. Mark all boxes that apply & describe the condition where indicated. <input type="checkbox"/> insecure footing <input type="checkbox"/> minimum room to work <input type="checkbox"/> poor lighting <input type="checkbox"/> excessive noise <input type="checkbox"/> excessive heat or cold <input type="checkbox"/> obstructions <input type="checkbox"/> asbestos <input type="checkbox"/> organic materials <input type="checkbox"/> electrical hazards <input type="checkbox"/> animal, insects, etc <input type="checkbox"/> wet/slippery conditions <input type="checkbox"/> other (describe) _____ Additional Comments: _____																															
Atmospheric Requirements Instructions: Complete the blank lines as indicated. Also list any additional toxic substances that require testing and complete the blank lines as indicated. If any additional information regarding atmospheric testing is needed, record it in the space provided.	Special Procedures Directions: Identify any equipment, instructions or procedures that may be needed to ensure a safe entry operation. Mark all boxes that apply and complete the blank lines as indicated.																														
<table border="0" style="width: 100%;"> <tr> <td style="width: 30%;">or:</td> <td style="width: 30%;">Equipment to Use:</td> <td style="width: 40%;">Acceptable Entry Conditions</td> </tr> <tr> <td><input type="checkbox"/></td> <td>4-Gas Monitor</td> <td>19.5-23.5 %</td> </tr> <tr> <td><input type="checkbox"/></td> <td>4-Gas Monitor</td> <td>less than 10 %</td> </tr> <tr> <td>or:</td> <td>Equipment to Use</td> <td>Acceptable Entry Conditions</td> </tr> <tr> <td><input type="checkbox"/></td> <td>4-Gas Monitor</td> <td>less than 20 ppm</td> </tr> <tr> <td><input type="checkbox"/></td> <td>4-Gas Monitor</td> <td>less than 10 ppm</td> </tr> <tr> <td><input type="checkbox"/></td> <td>_____</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/></td> <td>_____</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/></td> <td>_____</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/></td> <td>_____</td> <td>_____</td> </tr> </table>	or:	Equipment to Use:	Acceptable Entry Conditions	<input type="checkbox"/>	4-Gas Monitor	19.5-23.5 %	<input type="checkbox"/>	4-Gas Monitor	less than 10 %	or:	Equipment to Use	Acceptable Entry Conditions	<input type="checkbox"/>	4-Gas Monitor	less than 20 ppm	<input type="checkbox"/>	4-Gas Monitor	less than 10 ppm	<input type="checkbox"/>	_____	_____	<input type="checkbox"/>	_____	_____	<input type="checkbox"/>	_____	_____	<input type="checkbox"/>	_____	_____	Equipment Needed <input type="checkbox"/> ventilation equipment Describe: Continuous Forced Air <input type="checkbox"/> respiratory equipment Describe: _____ <input type="checkbox"/> lighting equipment Describe: GFCI or low voltage <input type="checkbox"/> communication equipment Describe: 2-way Radio <input type="checkbox"/> personal protective equipment <input type="checkbox"/> Coveralls <input type="checkbox"/> Glasses <input type="checkbox"/> Gloves <input type="checkbox"/> Boots <input type="checkbox"/> Other _____ <input type="checkbox"/> barriers and guarding Describe: _____ <input type="checkbox"/> fire extinguishing equip Describe: _____ <input type="checkbox"/> other Describe: _____
or:	Equipment to Use:	Acceptable Entry Conditions																													
<input type="checkbox"/>	4-Gas Monitor	19.5-23.5 %																													
<input type="checkbox"/>	4-Gas Monitor	less than 10 %																													
or:	Equipment to Use	Acceptable Entry Conditions																													
<input type="checkbox"/>	4-Gas Monitor	less than 20 ppm																													
<input type="checkbox"/>	4-Gas Monitor	less than 10 ppm																													
<input type="checkbox"/>	_____	_____																													
<input type="checkbox"/>	_____	_____																													
<input type="checkbox"/>	_____	_____																													
<input type="checkbox"/>	_____	_____																													
Continuous monitoring required <u>See Above</u> (Identify substance and equipment) Additional monitoring required <u>Following interruption of work or if new hazard is introduced</u> Additional testing information: _____	Rescue Procedures and Equipment Refer to Security Rescue Planning worksheet Confined Space Classification <input type="checkbox"/> Non-Permit Required <input type="checkbox"/> Permit Required <input type="checkbox"/> Alternate Procedure																														

SUMP BASIN



IMPREGNATION TANK



OPEN IMPREGNATION TANK



STORM DRAIN



WATER METER PIT



OPEN WATER METER PIT



COOLING TOWER ACCESS



IMPREGNATION RINSE TANK



OPEN IMPREGNATION RINSE TANK







The violation(s) described in this Citation are alleged to have occurred on or about the day the inspection was made, unless otherwise indicated within the description given below.

11. Inspection Site: _____

12. Item Number: _____

13. Standard, Regulation or Section of the Act Violated: _____

14. Description: _____

15. Date by Which Violation Must Be Abated: _____

16. Penalty: _____

7. Original Report No. 116

8. Page No. 1 of 2

9. Inspection Date(s): 10/2/91 - 10/4/91

Penalties Are Due Within 15 Days of Receipt of This Notification Unless Contested (See enclosed booklet)

This Section May Be Detached Before Filing

§ 7c:

and its successors

Attention: President

Certified Mail No. _____

Return Receipt Requested

THE LAW REQUIRES that a copy of this Citation be posted immediately in a prominent place at or near the location of violation(s) cited below. The Citation must remain posted until the violations cited below have been abated, or for 3 working days (excluding weekends and Federal holidays), whichever is longer.

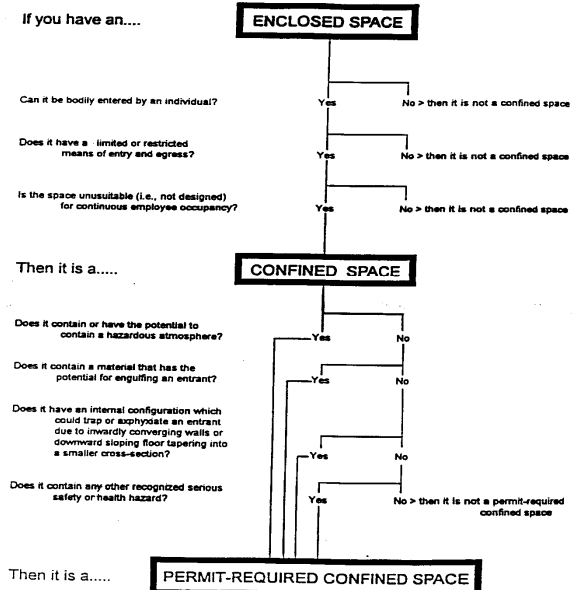
The Citation describes violations of the Occupational Safety and Health Act of 1970. The penalty(ies) listed below are based on these violations. You must abate the violations referred to in this Citation by the dates listed below and pay the penalties proposed, unless within 15 working days (excluding weekends and Federal holidays) from your receipt of this Citation and penalty you mail a notice of contest to the U.S. Department of Labor Area Office at the address shown above. (See the enclosed booklet which outlines your rights and responsibilities and should be read in conjunction with this form.) You are further notified that unless you inform the Area Director in writing that you intend to contest this Citation or proposed penalties within 15 working days after receipt, the Citation and the proposed penalties will become a final order of the Occupational Safety and Health Review Commission and may not be reviewed by any court or agency. Issuance of this Citation does not constitute a finding that a violation of the Act has occurred unless there is a failure to contest as provided for in the Act or, if contested, unless the Citation is affirmed by the Review Commission.

12. Item Number	14. Description	15. Date by Which Violation Must Be Abated	16. Penalty
	<p>Section 5(a)(1) of the Occupational Safety and Health Act of 1970: The employer did not furnish employment and a place of employment which were free from recognized hazards that were causing or likely to cause death or serious physical harm to employees in that employees were exposed to:</p> <p>a) The hazards associated with confined space entry such as, but not limited to: lack of oxygen, airborne contaminants, the lack of appropriate rescue procedures, the lack of constant air monitoring while in the confined space and the lack of constant contact with stand by personnel located outside of the confined space. (1) Employees working in department # 115 in the aers pits were not provided information and training on the hazards associated with confined space. (2) Employees did not maintain constant visual or radio contact with a standby person. (3) Monitoring for oxygen deficiencies and air contaminants before every entry into the confined space and ongoing monitoring while in the confined space was not conducted. (4) The stand-by person was not equipped with a self contained breathing apparatus and rescue equipment that would ensure the safe rescue of employees in the confined space.</p>	12/03/91	\$5000.00

THE ULTIMATE CONFINED SPACE



INITIAL DETERMINATION FLOWCHART FOR §1910.146



HOW TO RECOGNIZE A CONFINED SPACE

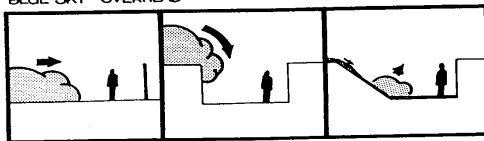
It is critical to identify **all** confined spaces. Some of the factors that may have a bearing on whether a space to be entered is or is likely to become a "confined space" are presented here:

Construction—How many sides of the workplace are enclosed? What is the number, size, and location of openings, doors, vents, etc. Note that a confined space is not related to size.

It is important to look at the means of exit, the stairs, ladders, rungs, etc. Check the possible blockage of exits.

Location—Is the space above or below normal floor level? Because airborne contaminants are lighter or heavier than air, can they accumulate in the space? Consider nearby operations as a source of contaminants.

"BLUE SKY" OVERHEAD



Contents—What is the nature of the materials stored or contained in the space? Do they give off flammable or toxic gases, fumes, dusts, vapours, fibres, mists, smoke or radiation? Is lack of oxygen possible (caused, for example, by rusting, biological activity, etc.)? Is there too much oxygen?

Work Activity—What is the nature of the work to be carried out in the space? Is it likely to deplete oxygen in the air? Consider also the other environmental disturbances that it will generate—heat, noise, toxic and/or