



Pretreatment Sampling

What and how we do it ??

How & Why important is it ???

By Brad Jones - Logan City – Pretreatment Inspector

Logan City's treatment system?

- The lagoons & wetlands













Headworks flooding

Feb 2017









Cache Valley has around 128,000 pop. 13 cities, 6 towns.

Logan City (Permit): Logan City and 6 other cities.

Around 500 permits, with 30 + SIC's and CIU's,

5 to 6 has NO Discharge permits



Cities on the Logan System

**Smithfield,
Hyde Park,
North Logan,
River Heights,
Providence,
Nibley**



Why is sampling and analysis important?

- The best lab in the world can only give accurate data based on the sample. If the sample is bad, the results will be too, but they may be very accurate based on the sample.
- Good sampling allows patterns to become evident. However, if sampling is not consistent, all you will ever have is inconsistent results, which usually are meaningless.
- Good sampling technique, along with good chemical and statistical analysis, allows a person a way to determine the value of analytical data.

Sampling

- Sampling Frequency ?
- Quality control of the samples
- Cleaning of Pumps & Equipment
- Sample volume need
- Sample preservation and holding times
- Chain of Custody
- Types of samples – Grab or Composite

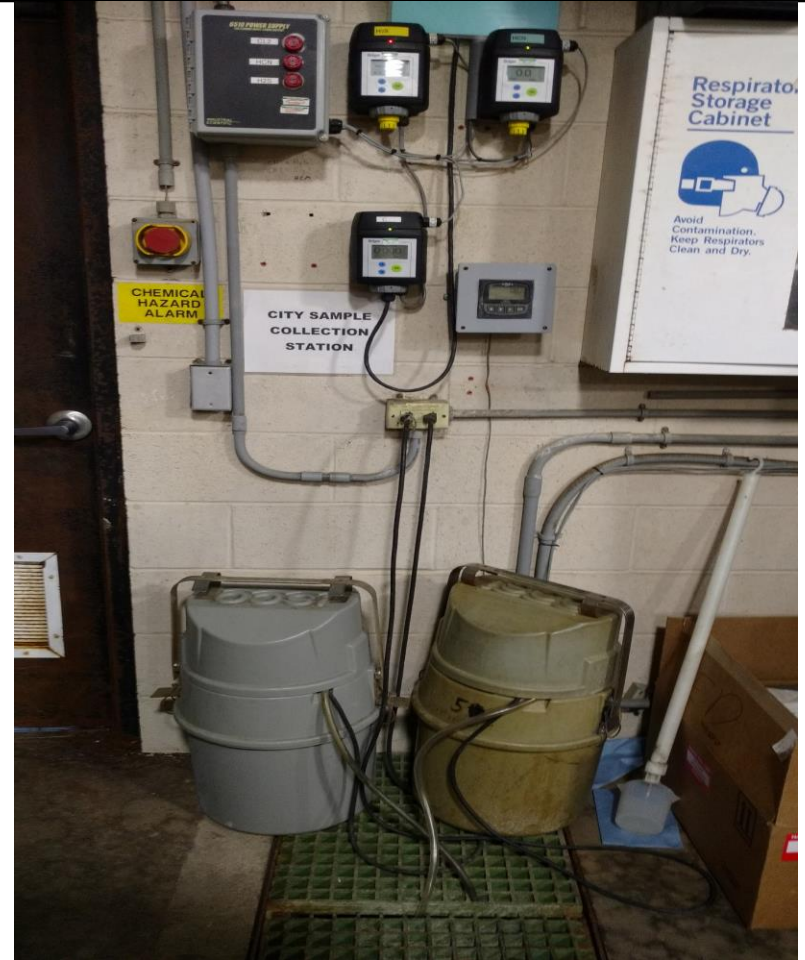
What samples need to be Grabs

- 40 CFR 403.12(g)(3)
- pH, Cyanide, total phenols, O&G, sulfides, and VOC's (volatile organic compounds)
- Why?

Grab Sampling



Composite sampling



Chain of Custody


Analysis Request Form / Chain of Custody

Receiving Lab: **Chemtech - Ford Laboratories**

Address: _____
 City / State / Zip: _____
 Contact: _____
 Phone # : _____ Fax # : _____
 E-mail: _____
 Project: _____

Lab ID#	Permit #	Sample Location	Date	Time	Number of Containers	Analysis Requested & Preservatives used													pH (by Sampler)							
						Sample Type	Cool	HCl	HNO ₃	Na ₂ S ₂ O ₃	NaOH	H ₂ SO ₄	H ₂ SO ₄	BOD ₅	TSS	O&G	Cadmium (Cd)	Chromium (Cr)		Copper (Cu)	Lead (Pb)	Nickel (Ni)	Silver (Ag)	Zinc (Zn)	Volatiles	TTO
					Sampled by: _____													Receiving Temp: _____								
Relinquished by: (signature)					Date/Time				Received by: (signature)				Date/Time:													
Relinquished by: (signature)					Date/Time:				Received by: (signature)				Date/Time:													
Relinquished to Lab by: (signature)					Date/Time:				Received by Lab: (signature)				Date/Time:													

Chain of Custody

 <p>American West Analytical Laboratories 3440 S. 700 W. Salt Lake City, UT 84119 Phone # (801) 263-8686 Toll Free # (888) 263-8686 Fax # (801) 263-8887 Email awal@awal-labs.com www.awal-labs.com</p>		CHAIN OF CUSTODY													AWAL Lab Sample Set # Page <u>1</u> of <u>1</u>																																																																																																																																																																																																					
		<p>All analysis will be conducted using NELAP accredited methods and all data will be reported using AWAL's standard analyte lists and reporting limits (PQL) unless specifically requested otherwise on this Chain of Custody and/or attached documentation.</p>													Due Date: _____																																																																																																																																																																																																					
Client: HyClone Labs, GE Healthcare Address: 925 West 1800 South Logan, Utah 84321 Contact: Bruce Bastian Phone #: 435-792-8362 Cell #: 435-881-4466 Email: brucebastian@ge.com Project Name: Wasterwater Pretreatment PO #: _____ Sampler Name: Brad L. Jones (435-881-2505)												QC Level: 1 2 2+ 3 3+			Turn Around Time: 1 2 3 4 5 Std					Unless other arrangements have been made, signed reports will be emailed by 5:00 pm on the day they are due. <input type="checkbox"/> Report down to the MDL <input type="checkbox"/> Include EDD: <input type="checkbox"/> Lab Filter for: <input type="checkbox"/> Field Filtered For:			Laboratory Use Only Samples Were: 1 Shipped or hand delivered 2 Ambient or Chilled 3 Temperature _____ °C 4 Received Broken/Leaking (Improperly Sealed) Y N 5 Properly Preserved Y N Checked at bench 6 Received Within Holding Times Y N																																																																																																																																																																																													
For Compliance With: <input type="checkbox"/> NELAP <input type="checkbox"/> RCRA <input type="checkbox"/> CWA <input type="checkbox"/> SOWA <input type="checkbox"/> ELAP / A2LA <input type="checkbox"/> NLLAP <input type="checkbox"/> Non-Compliance <input type="checkbox"/> Other: _____			Known Hazards & Sample Comments			<table border="1"> <thead> <tr> <th>Sample ID:</th> <th>Date Sampled</th> <th>Time Sampled</th> <th># of Containers</th> <th>Sample Matrix</th> <th>BOD (Cooled)</th> <th>TSS (Cooled)</th> <th>OMG (HCl)</th> <th>Copper (HN03)</th> <th>Cadmium (HN03)</th> <th>Chromium (HN03)</th> <th>Lead (HN03)</th> <th>Ammonia (H2So4)</th> <th>Phosphorus (H2So4)</th> <th>Zinc (HN03)</th> </tr> </thead> <tbody> <tr> <td>1 Waste water treatment building, Main sample, # 436</td> <td>2/6/2019</td> <td></td> <td>4</td> <td>4</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr><td>2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>5</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>7</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>8</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>9</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>10</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>11</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>12</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table>												Sample ID:	Date Sampled	Time Sampled	# of Containers	Sample Matrix	BOD (Cooled)	TSS (Cooled)	OMG (HCl)	Copper (HN03)	Cadmium (HN03)	Chromium (HN03)	Lead (HN03)	Ammonia (H2So4)	Phosphorus (H2So4)	Zinc (HN03)	1 Waste water treatment building, Main sample, # 436	2/6/2019		4	4	X	X	X	X				X	X	X	2															3															4															5															6															7															8															9															10															11															12														
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Chain of Custody

- What do we need on the C of C ?
- More than 10 things needed on the C of C
- Can you name them ?



Chain of Custody

- Sample ID, Name and Number, & Locations
- Date and time of sample collection
- Parameters to be analyzed for
- Containers used/size / Preservation used
- Name of sampler - Type of sample
- Results done on the field
- Name/date/time sample was relinquished, and received.
- Lab tester and information



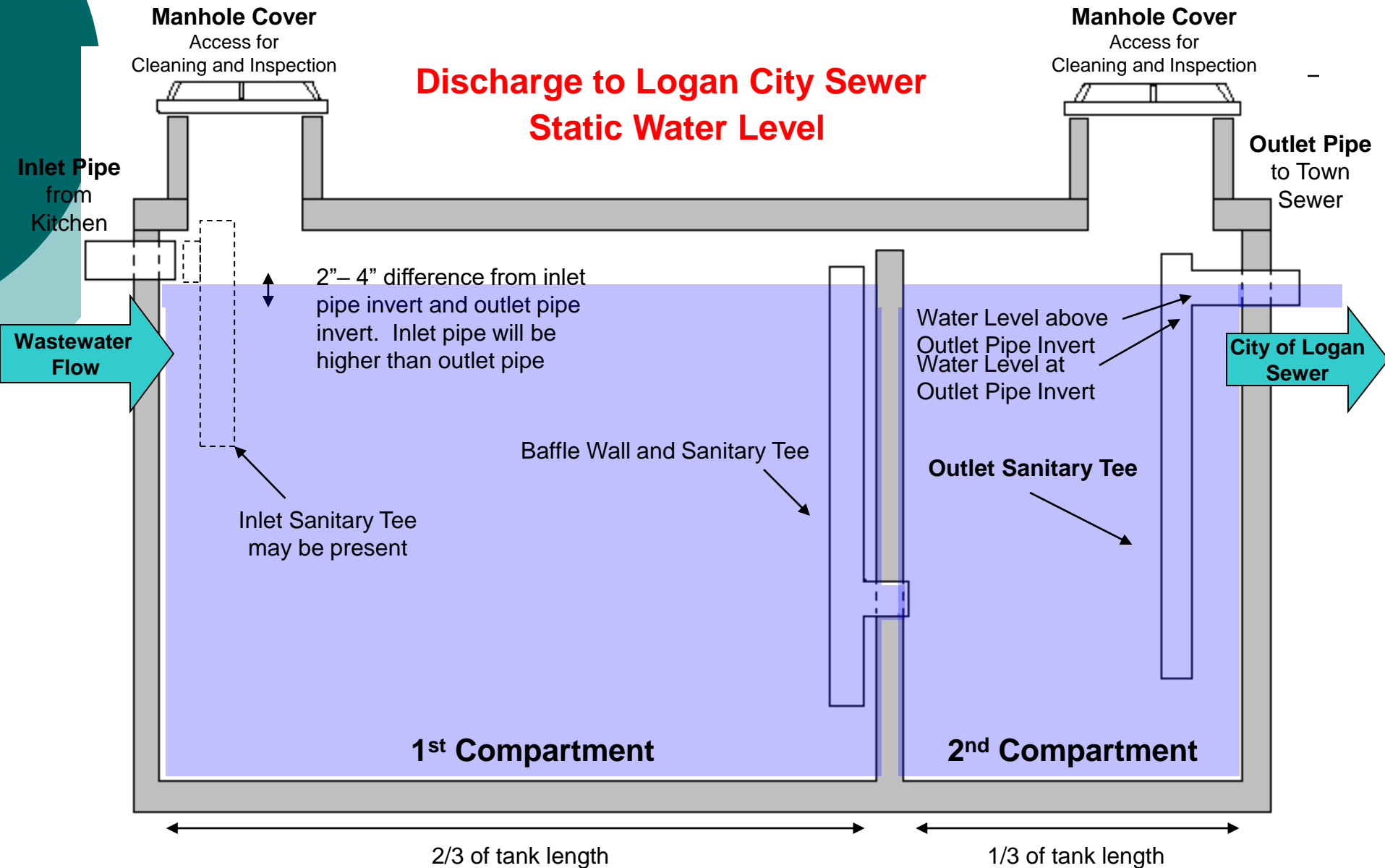
GI Requirements ???

- How big, sizing, location of sample port?
- Multi-users units? – Community GI?
- Access to compartments, etc.?
- The answers to questions?

Call the pretreatment program!



Grease Trap Size & Fluid Levels



In-floor Interceptors: Some Have “Built In” Sample Collection (Hindrance Design)



Missing Sanitary Tee: Floating FOG Escapes to Sanitary Sewer



Sample Vault, Hydraulic Jump





Sample location ?









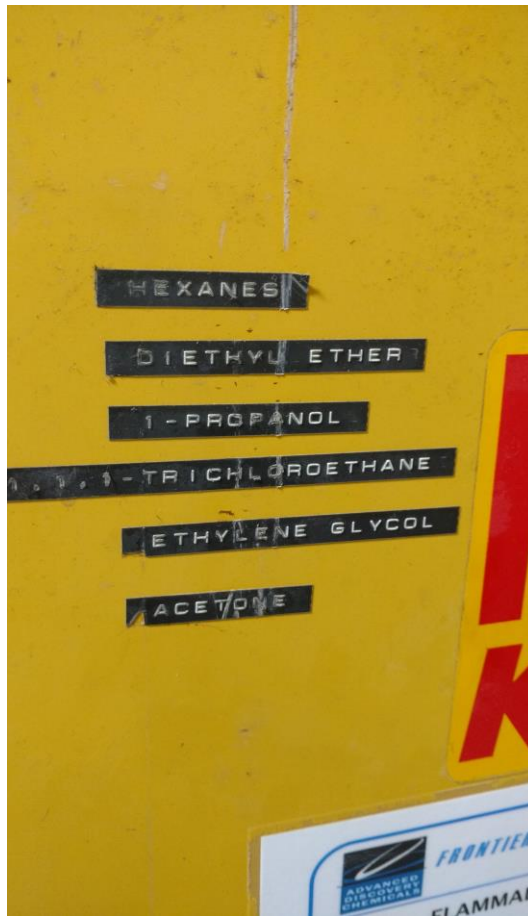




What the treatment ? Keep good records !!!



Know about Chemicals & Equipment, Hazards, etc...



Test Equipment and bottles, etc.





List PPE's

- Gloves, Safety Glasses, Shoes
- Seat Belts
- Hard Hat
- Proper Clothing

- Hearing Protection, Others???
- (Used at Home)



What is your best PPE ?

- Your Brain

- Use it



Accident

- Define

Dictionary

An Unexpected event, usually undesirable!

Encyclopedia

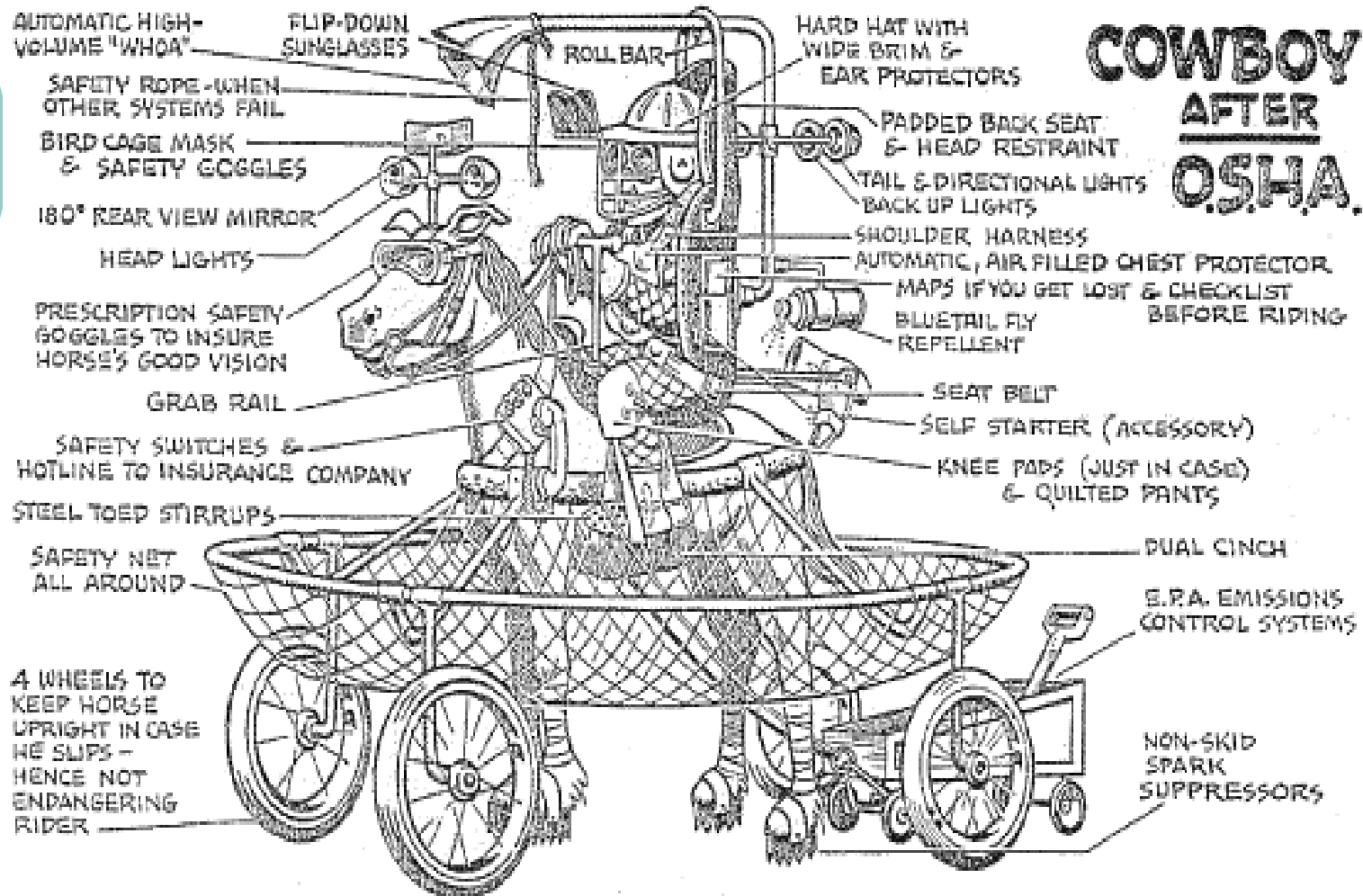
- An ACCIDENT is a specific, unexpected, unusual, & unintended event, etc...
- It implies generally a negative outcome which may have been avoided or prevented had circumstances leading up to the accident been recognized, & acted upon, prior to occurrence!

Protect your self

- Performing tasks may expose workers to hazards
- Know the Task
- Use the right PPE's



If worn properly!



Is this a confined space?



Confined Space Fatalities

Confined Space Training

Entrants/Attendants

Pittsburgh Post-Gazette, Thursday, May 3, 1990

Methane in well kills three firefighters

HUSTONTOWN, Pa. (AP) - Residents were mourning yesterday for three volunteer firefighters who died while trying to help a neighbor clean out a 38-foot well and were overcome by gas.

The deaths were the first in the 25-year history of the 170-member volunteer company in south-central Fulton County, said Assistant

James F. Chestnut, both of Hustontown and both of Newburg died Tuesday in the well, which was being treated, including

The fire fight Monday to put odor and sust

MENOMINEE, Mich. - Bill Hofer was the first to collapse in the dark manure pit.

Inhaling a combination of toxic gases, he quickly lost consciousness and slipped down in the pool of murky liquid at the bottom of the 12-foot hole.

Then one after another, the four men at the top of the pit scrambled in, trying first to save Hofer, and then each other, from the deadly fumes.

Within minutes, all five were dead or dying in what is believed to be the worst farm accident in Michigan history.

Killed Wednesday along with the 63-year-old Hofer were his uncle Carl Theuerkauf Sr., the 66-year-old patriarch of the centennial farm; two of Theuerkauf's sons, 37-year-old Carl Jr. and 28-year-old Tom; and Carl Jr.'s 15-year-old son, Daniel.

Rescue Attempt Fails, Two Men Gassed

(AP) - While apparently trying to repair a heating unit in the tank, Sylvester Johnson was overcome by poisonous asphalt fumes.

After collapsing, a co-worker saw him lying in the tank and climbed down to help. They, too, soon passed out. Rescue teams from the police and fire units soon arrived and retrieved

attributed to by gas poison, the

Typical Confined Spaces

- Chemical storage tanks
- Waste space pits
- Grain bins or silos
- Underground tunnels
- Sewer manholes
- Boilers
- Railroad tank cars





SUMMARY

U.S. Environmental Protection Agency

Industrial User Inspection and Sampling Manual For POTWs



U.S. Environmental Protection Agency
Office of Compliance
EPA-831B-17001 January 2017



Sometimes you may need a bigger gun, or maybe more than just one !



Bring out the big gun

Never be afraid to ask for help

1883 Gatling Gun



**And Don't
Forget,
If We All Help
one Another**

We All Win!

Questions

Thanks for your time

**Brad L. Jones Logan City
Pretreatment**

