



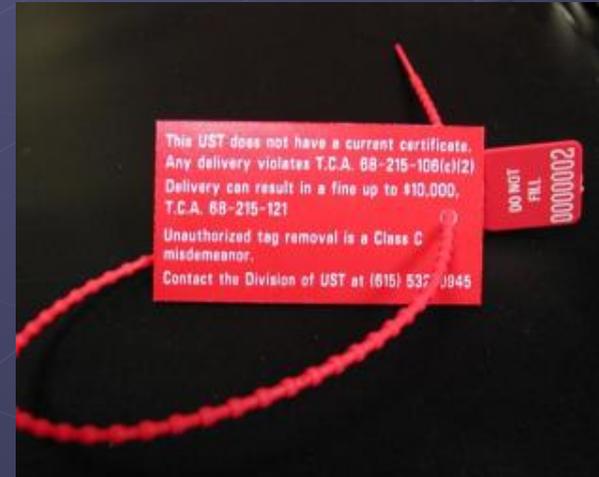
# UST Compliance Manager

Mississippi Department of Environmental  
Quality

[www.deq.state.ms.us](http://www.deq.state.ms.us)

# Why are we here?

In 2005 when EPA established the Energy Act which required such things as Secondary Containment and Delivery Prohibition



It also required Operator Training

# What is Operator Training

It is a program designed to ensure there are knowledgeable people working at each UST facility that understand operating and maintaining UST systems





# Why is it important?



And your customers can be even more dangerous







# Different Levels of Operator Training

- Compliance Manager – a person having daily on-site responsibility for the operation and maintenance of UST systems
- UST Operations Clerk – a person on-duty at a service station that has the primary responsibility for operating the dispensers



# Compliance Manager Responsibilities include

- Notification
- Emergency Response and Release Reporting
- Record Keeping
- Temporary and Permanent Closure
- Release Detection
- Release Prevention
- Financial Responsibility
- UST Operations Clerk Training



# Operations Clerk Responsibilities include

- Proper response to emergencies involving the operation of the UST that pose an immediate threat
- Proper response to alarms caused by spills, leaks or releases from a UST system



# How do you get trained?

## For the Compliance Manager

- MDEQ Seminar with examination
- MDEQ Examination
- Third Party Course
- Approved in-house training
- Reciprocity

# What about Operations Clerks?

- Trained by the Compliance Manager
- On-line training courses





# When is training required?

By **August 8, 2012** for all existing locations

For new locations or new employees:

Compliance Manager - trained within 30 days of taking responsibility

UST Operations Clerks – prior to assuming responsibility (operating the pumps)

# Everyone's trained, now what?

## Complete the UST Compliance Manager Registration Form

UST Compliance Manager Registration					
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY					
<p>&gt; This form shall be submitted to the MDEQ for notification of designated UST Compliance Manager for underground storage tank (UST) facilities</p> <p>&gt; Documentation of the successful completion of an MDEQ approved UST Compliance Manager program must be submitted with this form for the registration to be complete.</p>					
<b>UST Compliance Manager</b>		<b>UST Tank Owner/Operator</b>			
Name	CM #	Owner Name	Owner ID #		
Mailing Address		Mailing Address			
City	State	Zip	City	State	Zip
e-mail		Owner Contact			
Phone		Phone			
Registration to listed UST Facilities					
<input type="checkbox"/> Owner <input type="checkbox"/> Operator <input type="checkbox"/> Employee <input type="checkbox"/> Service Technician <input type="checkbox"/> Third Party <input type="checkbox"/> Other _____					
Training Completion Date: <input type="checkbox"/> Initial Training <input type="checkbox"/> Retraining					
Training Source					
<input type="checkbox"/> MDEQ Seminar/Workshop <input type="checkbox"/> MDEQ Exam <input type="checkbox"/> Third Party Course <input type="checkbox"/> In-house Training <input type="checkbox"/> Reciprocity					
UST Facilities Managed by UST Compliance Manager					
Facility Name	Address	City	Fac ID #		
I hereby certify that the foregoing information is true, accurate, and complete and that I am the UST Compliance Manager for the UST facilities listed on this form.					
UST Compliance Manager Name	Signature of UST Compliance Manager	Date			
I hereby certify that the foregoing information is true, accurate, and complete and the listed UST Compliance Manager will serve as the designated UST Compliance Manager for my facilities listed on this form.					
UST Owner	Signature of UST Owner	Date			
FACILITY ID BY THE MISSISSIPPI DEPT. OF ENVIRONMENTAL QUALITY, OFFICE OF POLLUTION CONTROL, 601 BLANCK RD, BOX 2991, GRENADA, MS 39225. PHONE: 662-361-1777 FAX: 662-361-8083. <a href="http://www.dem.state.ms.us">http://www.dem.state.ms.us</a> 3/12					

# Maintain Clerk Log at Store

UST Operation Clerks Log					
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY					
<ul style="list-style-type: none"> <li>&gt; This form must be used to document that all UST Operations Clerks at this facility have been trained in accordance with the Mississippi Underground Storage Tank Regulations effective August 25, 2011</li> <li>&gt; UST Operation Clerks must be trained before assuming UST clerk responsibilities.</li> <li>&gt; This form must be kept at the facility and made available for review upon request.</li> </ul>					
UST Facility			UST Tank Owner/Operator		
Facility Name	Fac ID #	Owner Name	Owner ID #		
Street Address			Mailing Address		
City	State	Zip	City	State	Zip
Training Documentation					
By signing this UST Operation Clerks Log, I (UST Operation Clerk) acknowledge that I have been trained by this facility's designated UST Compliance Manager (signed below) on the following information:					
All emergency shutoffs (e-stops)		Fire Extinguishers			
Tank beds, dispensers, and product hoses		Spill Kits			
Sensitive Receptors (storm drains, ditches, etc)		Emergency Contact list			
Tank monitor alarms and warnings (if applicable)		How to respond to an emergency			
Date:	UST Operations Clerk:		Trained by UST Compliance Manager		
	Printed Name:		Printed Name:		
	Signature:		Signature:		
	Printed Name:		Printed Name:		
	Signature:		Signature:		
	Printed Name:		Printed Name:		
	Signature:		Signature:		
	Printed Name:		Printed Name:		
	Signature:		Signature:		

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY, OFFICE OF POLLUTION CONTROL, UST BRANCH  
 P.O. BOX 247, JACKSON, MS 39202 P: 601.351.6511 FAX: 601.351.6512 <http://www.deq.state.ms.us> 3/12



# Post for your employees

## EMERGENCY CONTACTS

Store Name: \_\_\_\_\_

Store Address: \_\_\_\_\_

Store City: \_\_\_\_\_

Store Phone No.: \_\_\_\_\_

Store Manager: \_\_\_\_\_

Main Phone No.: \_\_\_\_\_ Alt Phone No. \_\_\_\_\_

UST Compliance Manager: \_\_\_\_\_

Main Phone No.: \_\_\_\_\_ Alt Phone No. \_\_\_\_\_

Fire Department Phone No.: \_\_\_\_\_

Police Department Phone No.: \_\_\_\_\_

## EMERGENCY PROCEDURES

### In Case of Fire

1. Press Emergency Stop (e-stop)
2. Call 911
3. Control & Secure the area
4. Call Manager and UST Compliance Manager



### In Case of Large Spill

(greater than 5 gallons)

1. Press Emergency Stop (e-stop)
  2. Call Manager and UST Compliance Manager
- If product goes offsite, call 911



3. Control & Secure the area
4. Use spill kit to keep the product from spreading



### In Case of Small Spill

(less than 5 gallons)

1. Press Emergency Stop (e-stop) if necessary
2. Control & Secure the area
3. Use the spill kit to clean up the product
4. Call Manager and UST Compliance Manager





# What Else?

No further training is required  
**UNLESS:**

- **New UST Compliance Manager and/or Operations Clerks**
- **Facility is found out of substantial compliance**



# Notification

Emergency Response and Release

Reporting

Record Keeping

Temporary and Permanent Closure

Release Detection

Release Prevention

Financial Responsibility

UST Operations Clerk Training



# Who is responsible for Notification?

*The Tank Owner/Operator*

**The Tank Owner/Operator**

The Tank Owner/Operator



# Notification of

- Installation of New UST Equipment
- Change of Equipment
- Change of Ownership
- Repair or Replacement of Equipment
- Temporary Closure of USTs
- Permanent Closure of USTs
- Suspected or Confirmed Releases

# Installation of New Equipment

- Must notify at least **30 days** prior to installing any new
  - Tank
  - Pipe
  - Dispenser
  - Submersible Pump
- Must be reported to the MDEQ within **30 days** of bringing the UST system into use





# Registration

“Notification of Underground Storage Tanks”  
Form to be submitted **within 30 days**

Then you received a “Certificate of  
Registration” that must be posted at the  
store



# Change in Equipment

Must be reported  
to the MDEQ  
within **30 days** of  
the change of  
UST equipment





# Change in Ownership

The **EXISTING** registered tank owner (i.e. old tank owner) is responsible for notifying the MDEQ of the Change in Ownership within **30 days**.

The Change of Ownership Form **MUST** be signed by the new tank owner

We strongly encourage completion of a Change of Ownership Form during purchasing process

# Repair or Replacement of Equipment

Must be reported to the MDEQ within **30 days** of the repair or replacement of UST equipment

**UNLESS THERE IS A RELEASE**





# Temporary Closure

When a facility is taken temporarily out of service, the owner is responsible to submit notification of the Change of Status of the UST system.



# Permanent Closure

**The tank owner** must submit Notice of Intent to Permanently Close Form at least 30 days prior to the scheduled tank closure

**The tank owner** must submit the Closure Report and associated sample results within 60 days of completing the UST Closure



Notification

# **Emergency Response and Release Reporting**

Record Keeping

Temporary and Permanent Closure

Release Detection

Release Prevention

Financial Responsibility

UST Operations Clerk Training



# Emergencies Happen





# You need to know how to respond





# Emergency Response

## 4 Steps for any UST Related Emergency

1. Press Emergency Stop (cut power to dispensers)
2. Control & Secure the area
3. Call someone
4. Cleanup

# First Emergency Action

The first action for any  
**EMERGENCY** will be  
to turn off power to the  
dispensers or pressing  
the Emergency Stop  
(e-stop)



# Other Emergency Actions

The order of Steps 2 through 4 will change depending on the type of emergency

Fire

Large spill

Small spill



# Control & Secure the Area

- Bag the dispenser
- Caution tape the fuel island
- Block access to surface spills
- Block receptors
- Get customers out of harms way
- In event of fire, block the driveway





# Call Someone

The Operations Clerk will need to notify:

- the Compliance Manager for all UST emergencies

AND

- The fire department in the event of a fire

OR

if product goes offsite

# Examples of product off-site



# Cleanup

- In the event of a fire, the petroleum cleanup handled by fire department
- Otherwise, know how to use a spill kit
  - Contain product
  - Use absorbents
  - Dispose of absorbents



# Cleanup



## SPILL RESPONSE KIT INSTRUCTIONS

**STOP** When a spill occurs  
**STOP** spill at source

**CONTAIN** Use booms to  
**CONTAIN** the spill

**ABSORB** Use Sukerup pads  
to **ABSORB** the spill

**DISPOSE** **DISPOSE** of used  
absorbent in  
waste bag

**REPORT** **REPORT** the  
incident

**RESTOCK** **RESTOCK** the kit  
after use



# Releases

Suspected Release

Confirmed Release



# Suspected Releases

- Leak Detection Failures
- Unusual Operating Conditions
- Annual Testing Failures
- Environmental Conditions

```
06-28-01  1:05 PM

SYSTEM STATUS REPORT
-----
T 1:LOW PRODUCT ALARM
T 1:DELIVERY NEEDED
T 2:LEAK ALARM
T 2:SUDDEN LOSS ALARM
T 3:LOW PRODUCT ALARM
T 3:DELIVERY NEEDED

INVENTORY REPORT

T 1:DIESEL
VOLUME      = 914 GALS
ULLAGE      = 9086 GALS
90% ULLAGE  = 8086 GALS
TC VOLUME   = 908 GALS
HEIGHT      = 14.12 INCHES
WATER VOL   = 41 GALS
```



# NOT a suspected release

- A dripping gasoline or diesel fuel filter (when a release to soil has not occurred)
- Customer complaint of “bad” gas
- An old oil stain on the concrete
- A small customer overfill

# Confirmed Release

- Product in monitoring wells
- Surface spills
- Sample Results above limits





All confirmed or suspected releases must be reported to MDEQ verbally within **24 hours** of discovery



# Release Reporting

- Report to MDEQ verbally within 24 hours
- Take immediate action to prevent further release
- Identify and stop any fire, explosion or vapor hazards
- Submit to MDEQ written report within 10 days



# When to report a release

- Discover more than 1/8<sup>th</sup> inch product in any monitoring well
- Elevated vapor readings for two consecutive months in monitoring well
- Automatic Tank Gauge indicates a tank failure
- Electronic Sump Alarms



# When to report a release

- **Discovery of free phase product in any sump which may have resulted in a release to the environment**
- **Two consecutive months of “failing” Inventory Control records**
- **SIR records “fail” or two “inconclusives”**
- **Unexplained presence or sudden appearance of water in the tank**
- **Automatic Line Leak Detectors “trip” and cannot be reset**



# When to report a release

- Precision tightness test failure
- Spill or Overfill of more than 25 gallons
- Discovery of free phase product or vapors in the soil, utility lines, sewers, or other areas

Notification

Emergency Response and Release

Reporting

**Record Keeping**

Temporary and Permanent Closure

Release Detection

Release Prevention

Financial Responsibility

UST Operations Clerk Training



# Record Keeping

Who is responsible:

**The Registered Tank Owner**

Not MDEQ

Not the store clerk

Not the Certified Contractor



# Record Keeping

- For MDEQ, the tank owner/operator is responsible for **ALL** record keeping
- Maintain records based on each facility
- Participate in the UST Compliance Assistance Program



# UST Compliance Assistance Program (CAP)

- Voluntary Participation
- MDEQ acts as a third party
- Designed to help you stay in compliance
- MDEQ tells you what to test
- MDEQ tells you when to test
- You will receive
  - **Annual summary of all compliance requirements**
  - **Calendar representation of testing requirements**
  - **60-90 day notice of testing requirement due date**



# What Records?

- Tank Installation Equipment Records
- Equipment Upgrade Records
- UST Repair Records
- Permanent Closure Reports
- Leak Detection Records
- Annual Testing Records
  - Spill bucket
  - Overfill prevention
  - Automatic Line Leak Detector
  - Shear Valves
  - Equipment inspection
- Corrosion Protection



# Maintain last 2 tests

- Spill prevention
- Overfill prevention
- Annual interstitial monitoring
- Integrity testing
- Shear valves
- Electronic Sensors
- Automatic Tank Gauge
- Precision tightness tests



# Maintain leak detection monitoring records for 12 months (1 year)

- Monitoring well records
- Monthly interstice inspections
- Automatic line leak detector tests
- Sump monitoring
- Monthly ATG reports
- Inventory Control Records
- SIR

Note: Precision tightness tests must be maintained for 2 years



# Other leak detection records

- Leak detection performance claims maintained for 5 years
- Written documentation of calibration, maintenance, and repair maintained at least 1 year after service work completed
- Leak detection replacements, maintain for operational life of the UST system



# Corrosion Protection Records

## The last 2 CP Evaluations

- For impressed current systems, the last 2 years of *60 day record of rectifier operation* + the last 2 *impressed current cathodic protection evaluation*
- For galvanic systems, the last 2 *galvanic cathodic protection evaluation*

# Permanent Closure Reports

- Permanent Closure Reports for 3 years after USTs closed
- Maintain site investigations conducted at closure until the property is sold





# Other Records

- Equipment repairs and replacement – remaining operational life of UST system
- Tank and piping installation records – remaining operational life of UST system
- UST Operator Training – as long as the employee is retained

Notification

Emergency Response and Release

Reporting

Record Keeping

**Temporary and Permanent  
Closure**

Release Detection

Release Prevention

Financial Responsibility

UST Operations Clerk Training



# What's the Difference?

Temporary Closure

versus

Permanent Closure



# Temporary Closure

- ✓ Tank remains in the ground
- ✓ The tank and piping can be brought back into use
- ✓ UST Owner is still responsible for actual UST



# Permanent Closure

- ✓ Tank is removed from the ground, or
- ✓ the tank and piping are closed in place where they can never be brought back into use
- ✓ UST Owner is no longer responsible for the physical UST



# Temporary Closure Requirements

- Remove all product (to less than 1 inch of product in the UST)
- Leave vent lines open
- Cap and secure all piping
- Maintain corrosion protection

# Importance of Proper Temporary Closure

“According to eyewitness reports, the cover suffered a direct hit from lightning and destroyed two fuel tanks that were underground... things went everywhere.”



## Lighting Strike Causes Tanks to Explode

# Lighting Strike Causes Tanks to Explode

According to the local news....

“It could have been a lot worse than it was.”

**Big bang, big hole**

“The cover went high into the air and came through the building”





06/10/2011





“I mean the whole thing – the truck, the concrete, everything – went up so high it went out of sight and then it just came back down.”

~Ricky Jones, eyewitness

Louisville, KY

# Proper Temporary Closure is Important



# What is permanent closure?

Permanent closure for an underground storage tank system is the permanent elimination from service of a UST system by removal from ground or closure in place.





# Types of Closure

## Removal from Ground

- Tanks emptied of all product
- Tanks are removed from the ground
- All piping is removed from the ground or closed in place
- Vent pipes are removed
- Excavation is filled

## Closure in Place

- Tanks emptied of all product
- Tanks and all tank openings are filled with an inert solid material
- All piping is closed in place
- Vent pipes are removed



# Permanent Closure Steps

- Step 1 – Select a MS UST Certified Contractor. A MS UST Certified Contractor must conduct the permanent closure.
- Step 2 - Decide to perform permanent closure by closure in place or removal from ground
- Step 3 - Tank Owner submits Notice of Intent to Permanently Close Form



# Permanent Closure Steps (cont.)

Step 4 – Contractor performs closure in accordance with MDEQ requirements

Step 5 - Submit Closure Report and sample results to MDEQ

Step 6 - Receive No Further Action Letter from MDEQ

# After the Permanent Closure

The tank owner is responsible to maintain and submit copies of the permanent closure reports which include the Closure Report and sample results.

Maintain your  
“No Further Action”  
letter from MDEQ.



Notification

Emergency Response and Release

Reporting

Record Keeping

Temporary and Permanent Closure

**Release Detection**

Release Prevention

Financial Responsibility

UST Operations Clerk Training



# What is Release Detection?

Release Detection which is also known as leak detection includes the activities and equipment used to detect releases from UST Systems.

# Types of Release Detection

- Monitoring Wells
- Inventory Control
- Precision Tightness Testing
- Automatic Tank Gauging
- Interstitial Monitoring
- Manual Tank Gauging





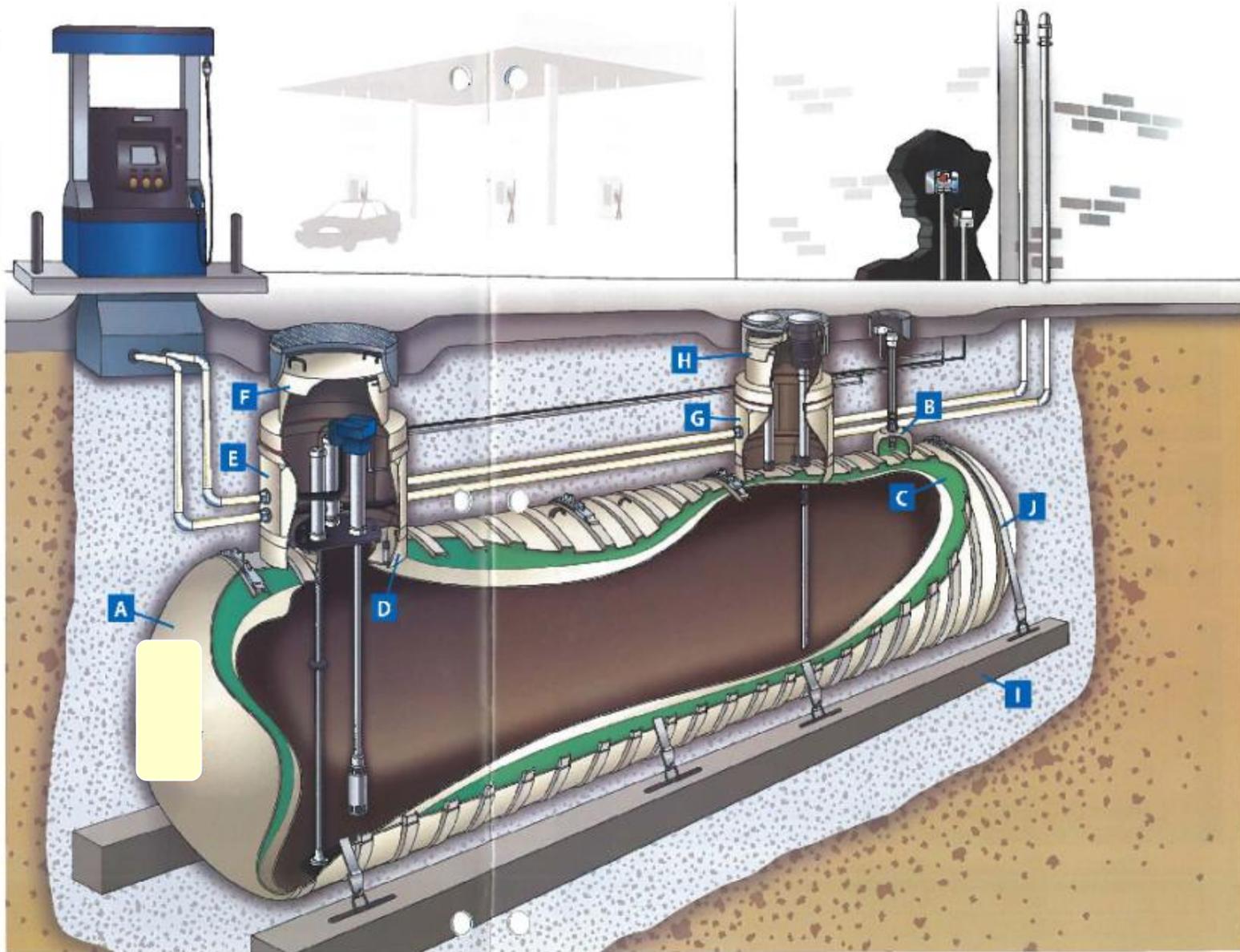
# Release Detection for “New” USTs

All USTs installed after October 1, 2008,  
must use **Interstitial Monitoring** as their  
form of release detection



## STANDARD FEATURES

- A. Double-Wall Tank
- B. Hydrostatic Reservoir
- C. Monitoring Fluid
- D. Containment Collars
- E. Turbine Tank Sump
- F. Turbine Sump Lid
- G. Fill / Vapor Tank Sump
- H. Fill / Vapor Sump Lid
- I. Deadman Anchor System
- J. Split Strap System

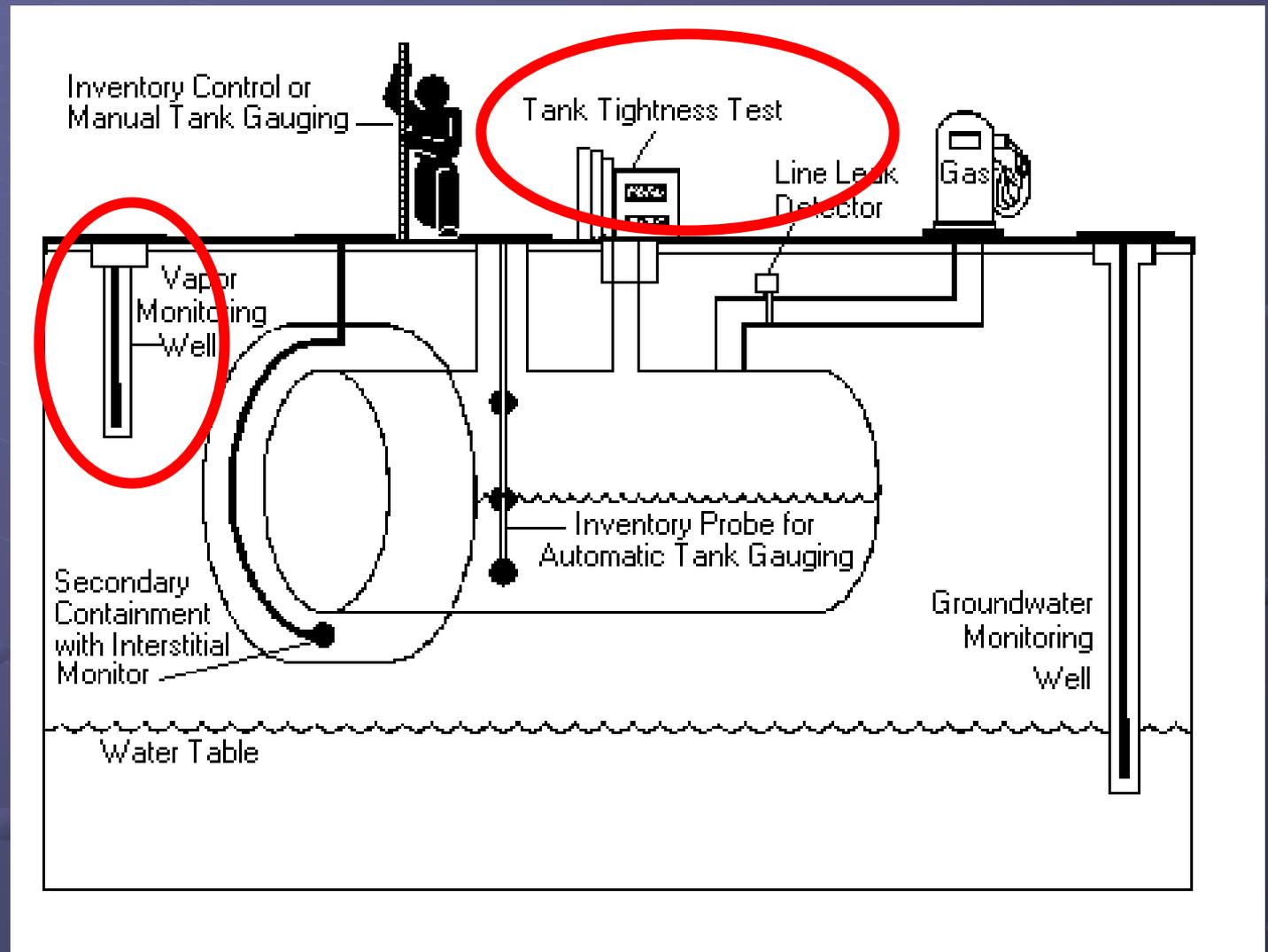


# Release Detection

For Tanks

and

For Piping

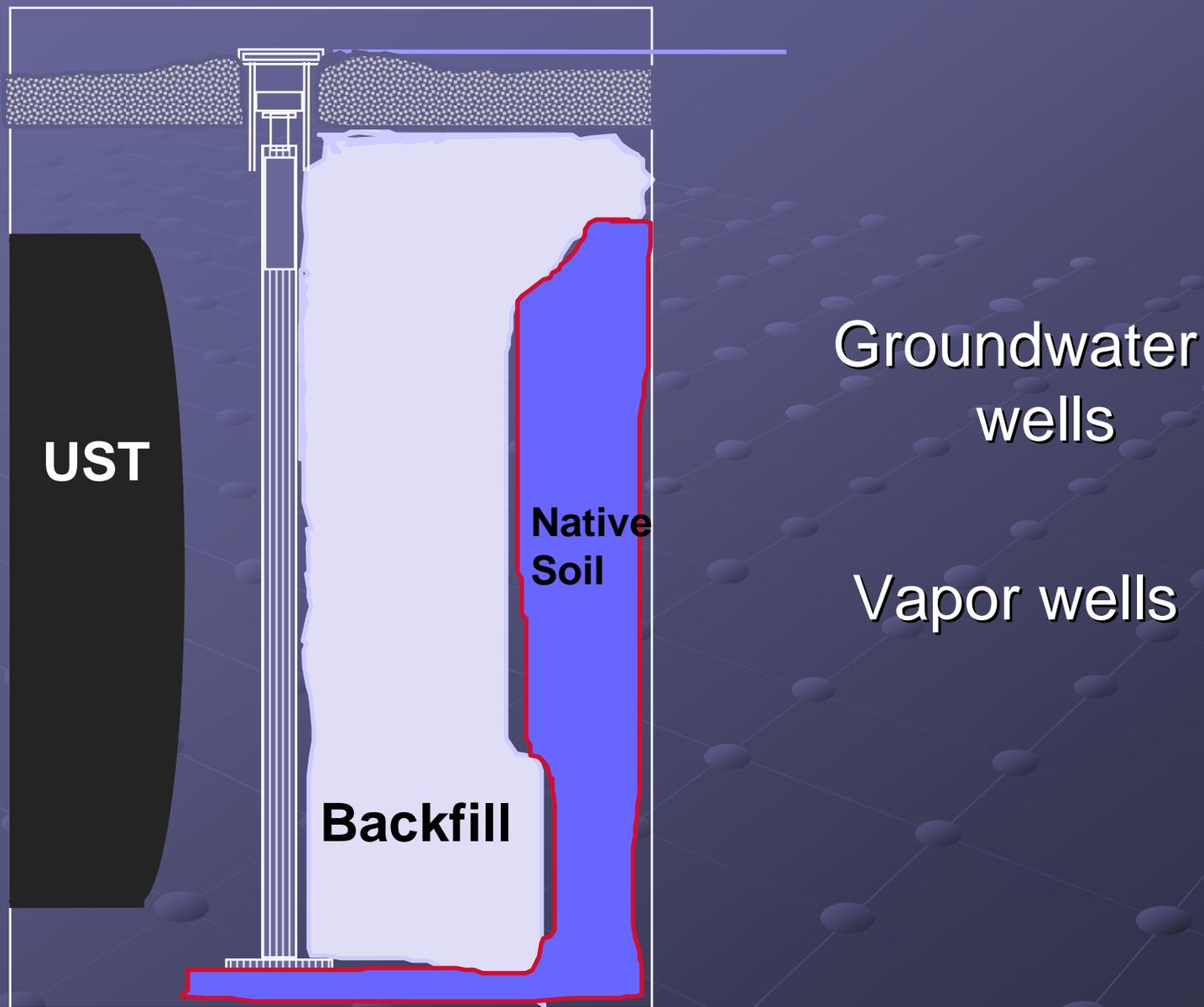




# Tank Bed Monitoring Wells

- Shallow wells around tanks
- Proper location and construction
- One foot below deepest tank
- Factory slotted casing
- Check once every 30 days
- Maintain written records

# Tank Bed Monitoring Wells

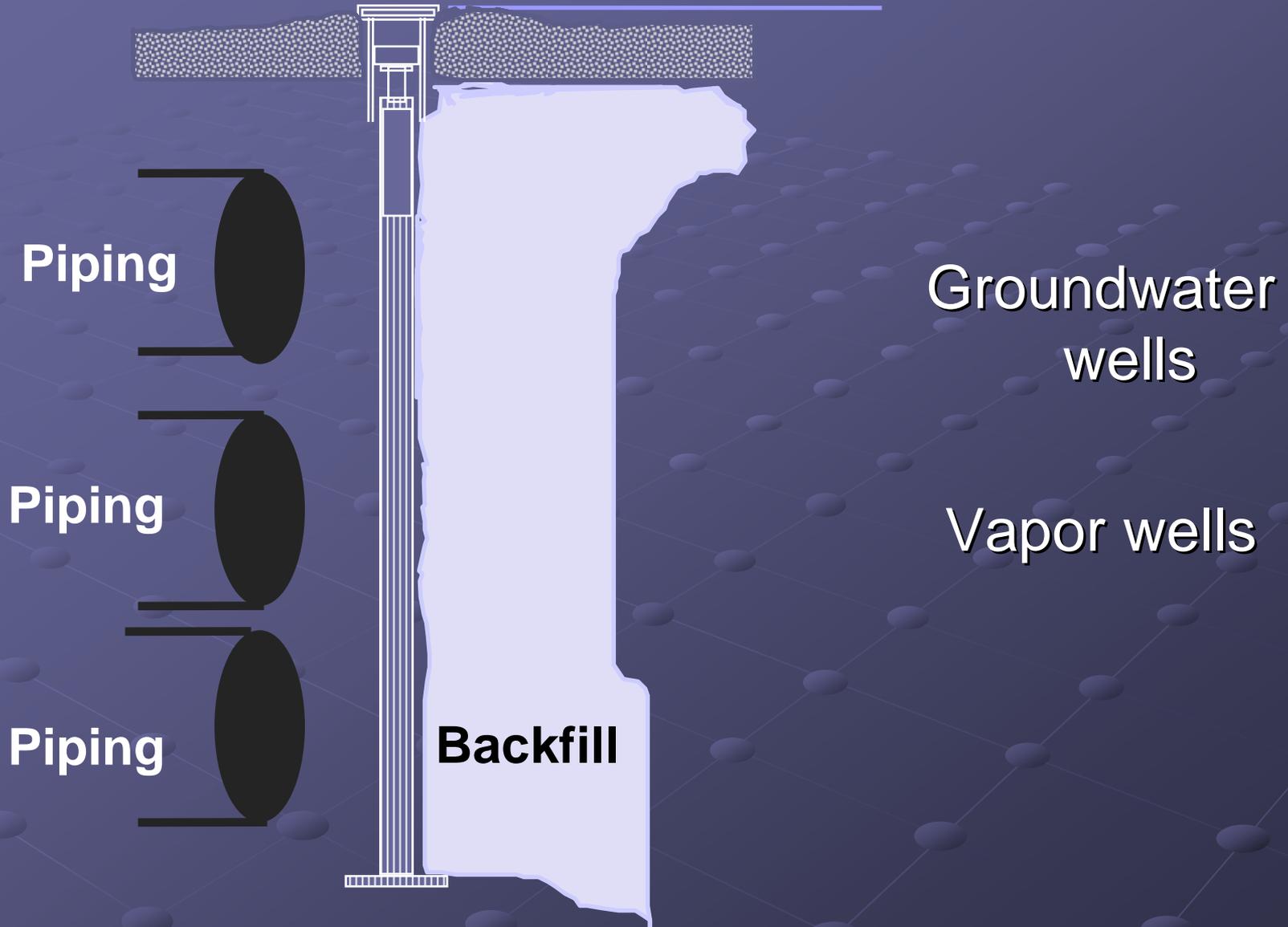


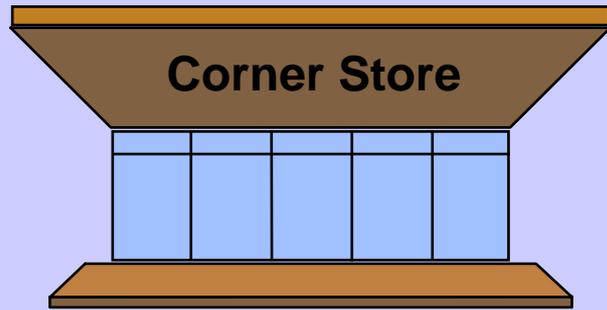


# Piping Monitoring Wells

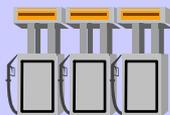
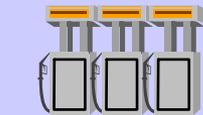
- Shallow wells around the piping
- Proper location and construction
- One foot below deepest pipe
- Factory slotted casing
- Check once every 30 days
- Maintain written records

# Piping Monitoring Wells

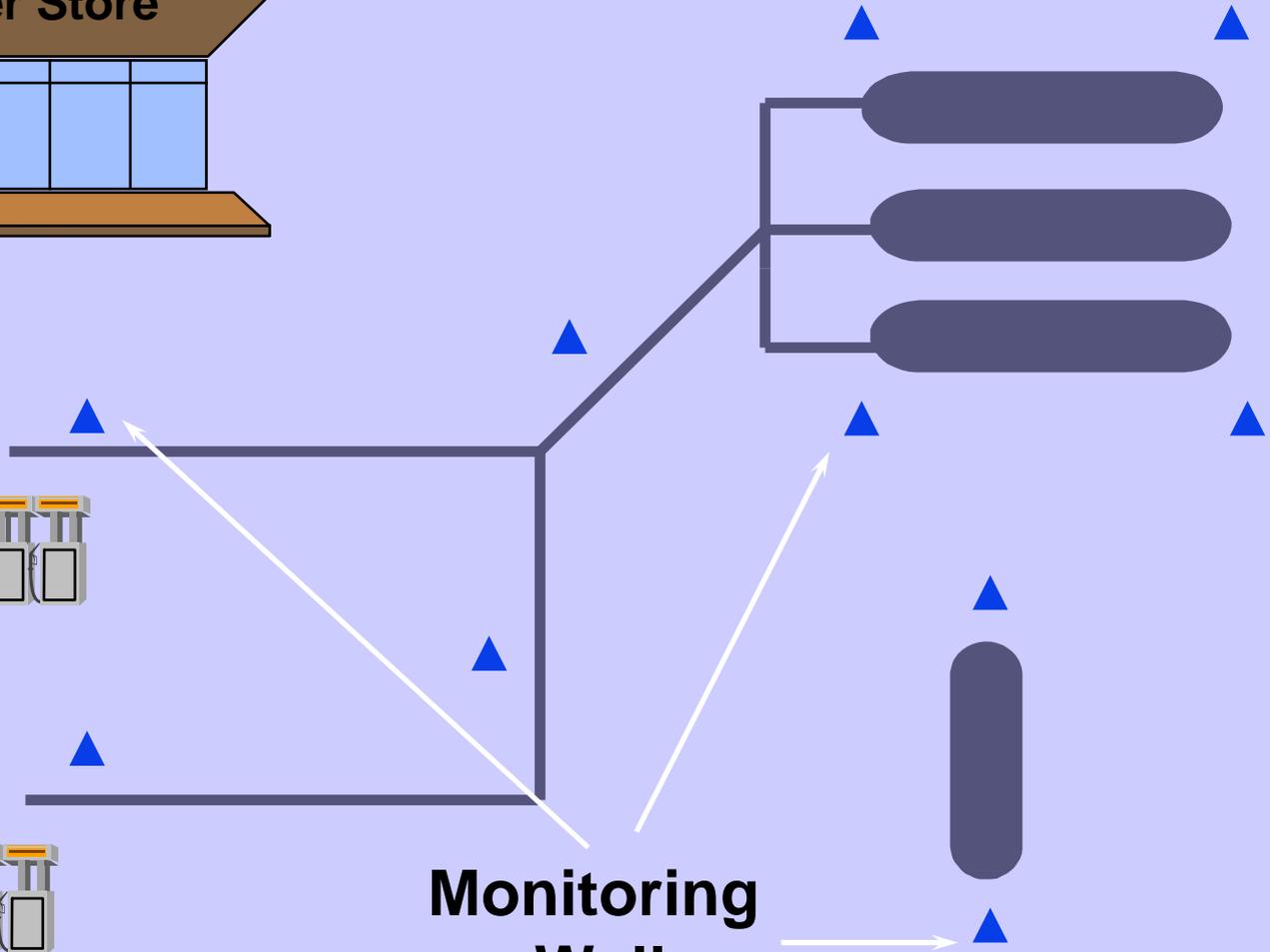




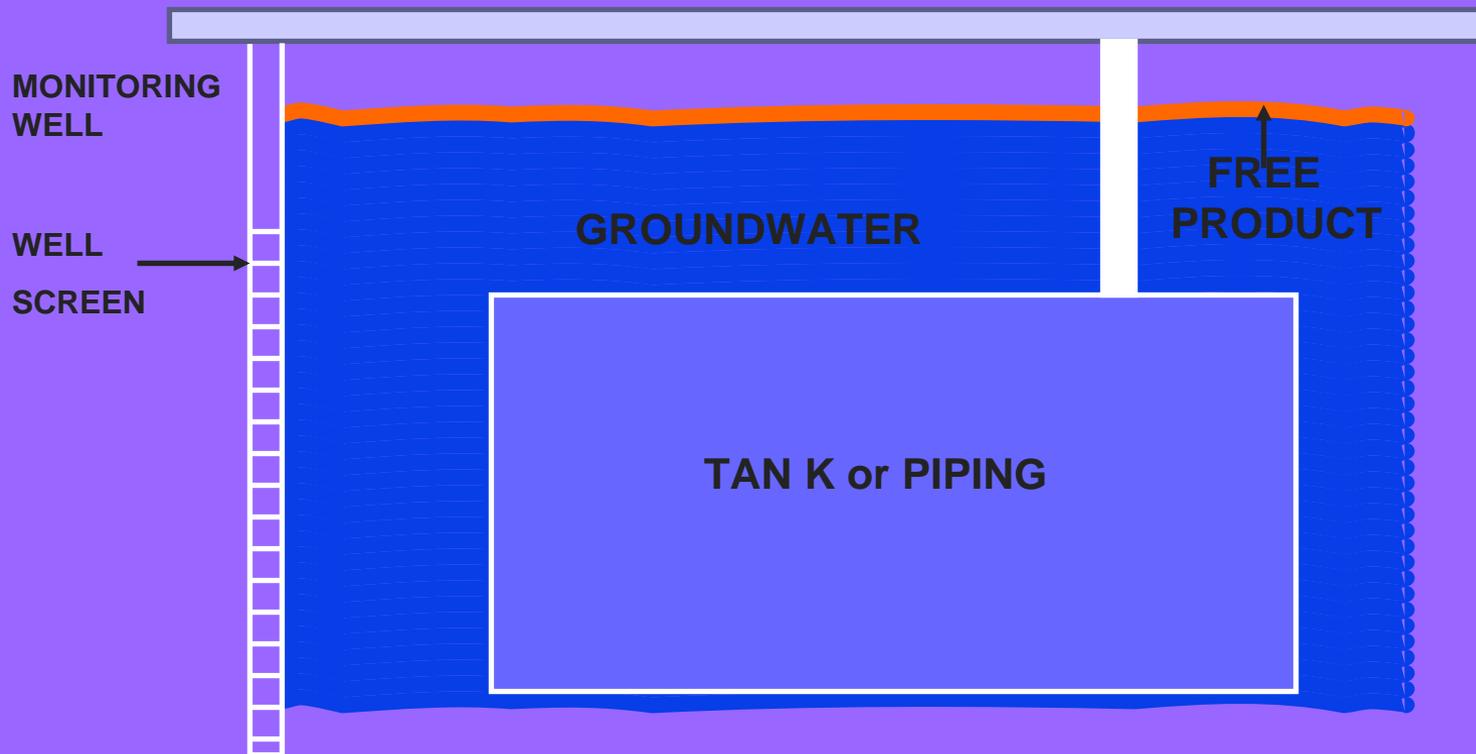
**Pumps**



**Monitoring  
Wells**



# MONITORING WELLS



# Monitoring Well Sampling



Groundwater



Vapors



# Monitoring Well Errors

- Not checked monthly
- Not keeping written records
- Not deep enough
- Not properly sealed
- Not in proper location



# Statistical Inventory Reconciliation

- Your Inventory Records are sent to a 3<sup>rd</sup> party that you contract with
- The 3<sup>rd</sup> party analyzes your records and sends you a report each month
- The report will tell you if you Pass or Fail or it may be “Inconclusive”

# SIR – Requires accurate sticking





# SIR

- Statistical Inventory Reconciliation records must be maintained in MDEQ required format.
- Must submit annual summary of leak detection records to MDEQ
- Must report any time you have a “fail” or two consecutive “inconclusive” results.
- Precision testing required when “fail” or two consecutive “inconclusives”.



# Precision Tightness Testing

Annual testing required

Must be done by a MS UST Certified Contractor

Must be capable of detecting a 0.1 gallon per hour leak rate at one and one-half times operating pressure



# Manual Tank Gauging

## Rarely Used

- 2000 g. tanks or less
- Leave out of use 36 hours
- Test weekly
- Stick tank to nearest 1/8 inch
- Good for waste oil tanks

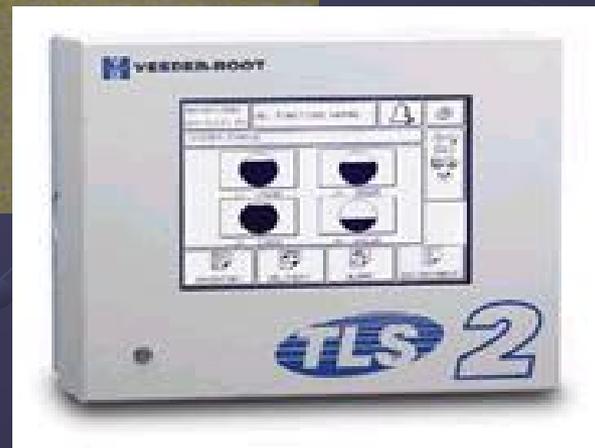


# Automatic Tank Gauging

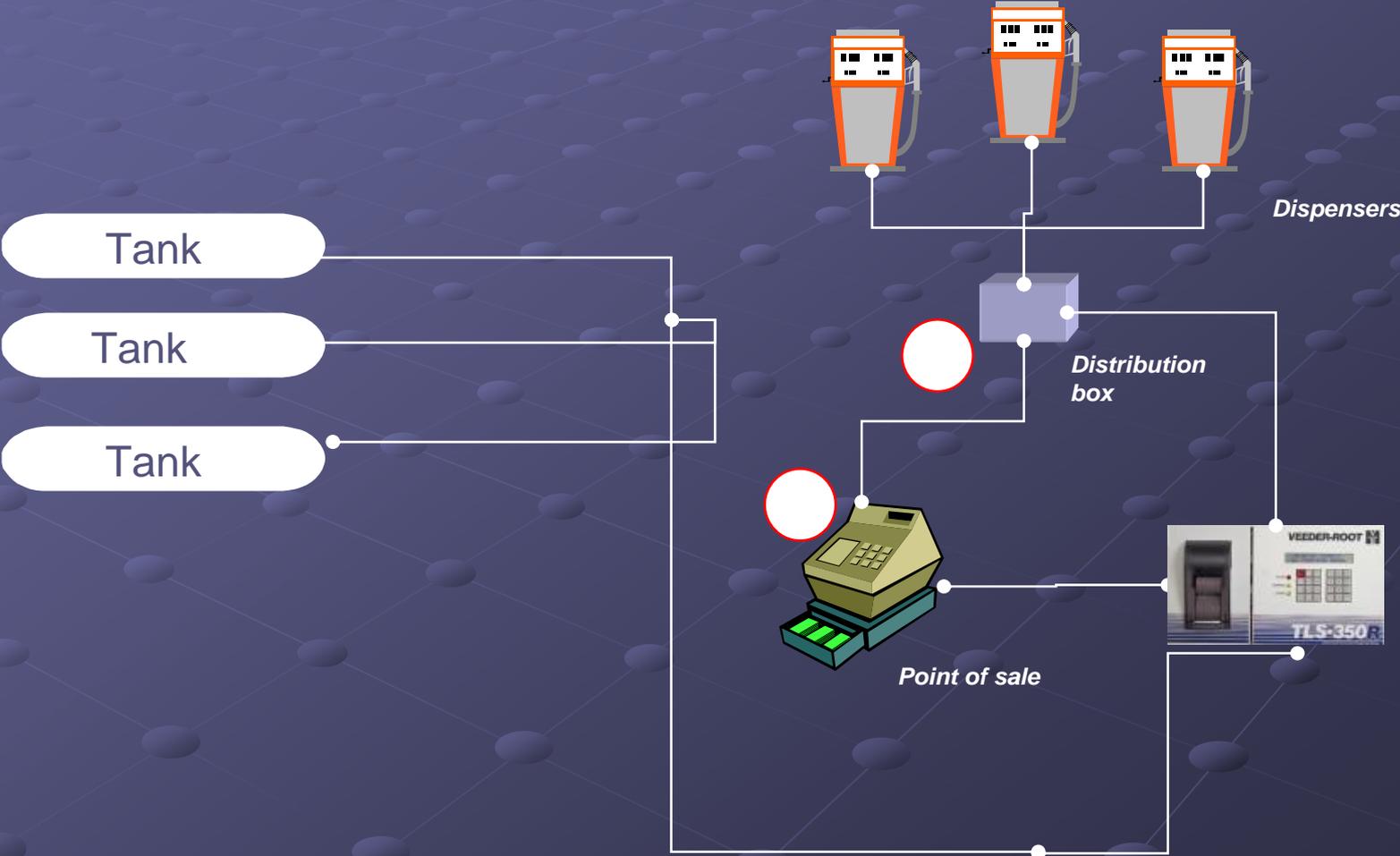
It works well when it is programmed properly

ATG can:

- Tell you fuel levels
- Let you know when you need a delivery
- Can tell you when there may be a problem with your UST system

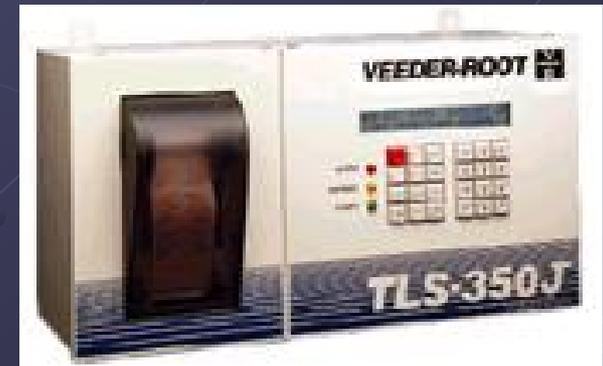


# How ATG works



# Automatic Tank Gauging

- Computerized electronic devices
  - Precisely measures contents
- Two ways to perform leak detection
  - Static leak test (3-6 hours)
  - Continuous leak detection



# ATG for Leak Detection

- Performs 0.2 gph leak test every 30 days
- Must be programmed correctly
- Must be inspected annually



# Piping ATG Record

BUCHANAN CROCKERY  
1708 WY. 45 SOUTH  
BUCHANAN, MS.

JAN 20, 2005 10:42 AM

PRESSURE LINE LEAK  
TEST RESULTS

0 1 REGULAR LINE

0.0 GAL/HR RESULTS:

LAST TEST:  
JAN 20, 2005 10:17 AM PASS

NUMBER OF TESTS PASSED  
PREV 24 HOURS : 127  
SINCE MIDNIGHT : 43

0.20 GAL/HR RESULTS:

NO 0.20 DATA AVAILABLE

0.10 GAL/HR RESULTS:

NO 0.10 DATA AVAILABLE

3 GPH

0.2 GPH

0 20 PREMIUM LINE

0.0 GAL/HR RESULTS:

LAST TEST:  
JAN 20, 2005 10:13 AM PASS

NUMBER OF TESTS PASSED  
PREV 24 HOURS : 33  
SINCE MIDNIGHT : 10

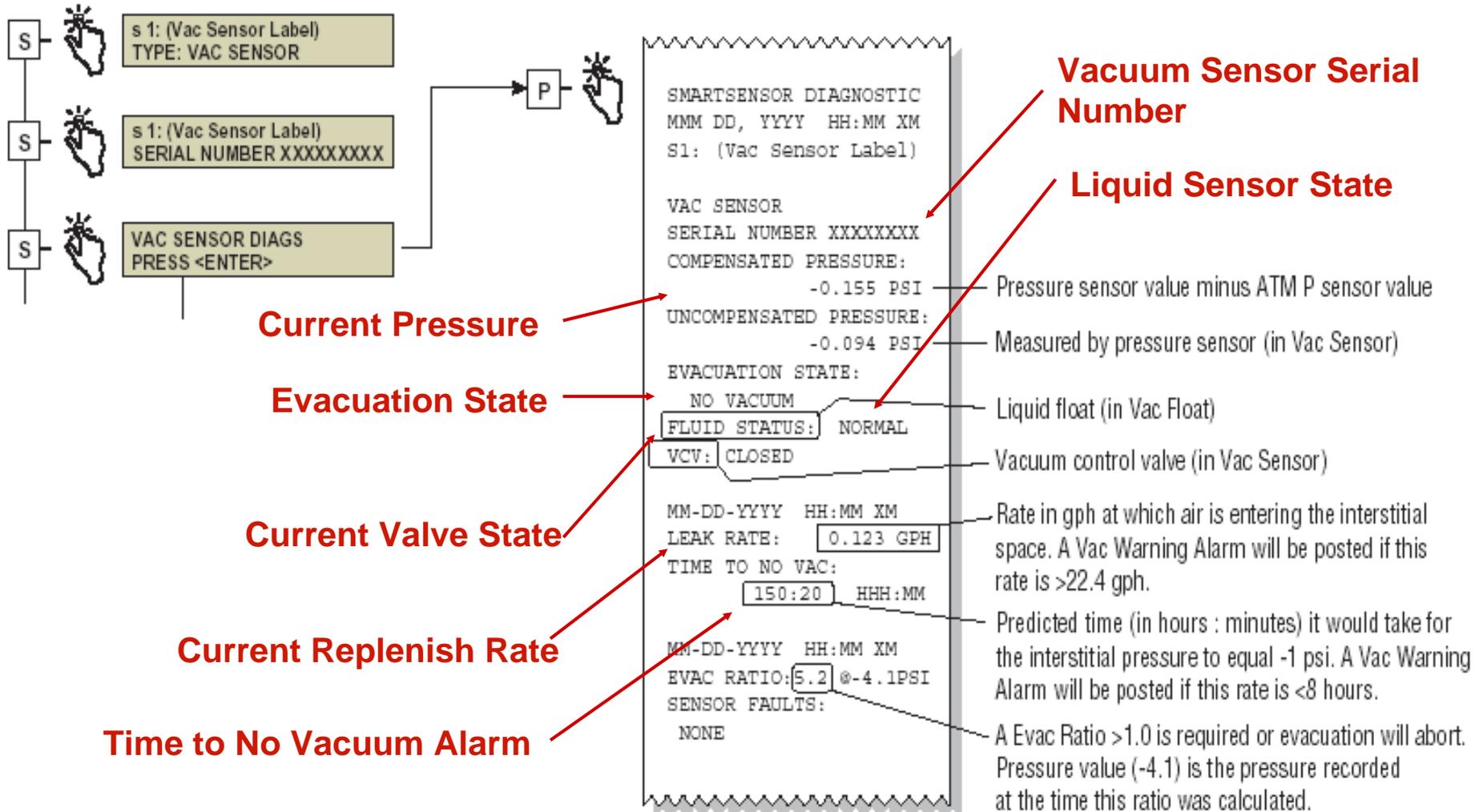
0.20 GAL/HR RESULTS:

NO 0.20 DATA AVAILABLE

0.10 GAL/HR RESULTS:

NO 0.10 DATA AVAILABLE

# ATG Record





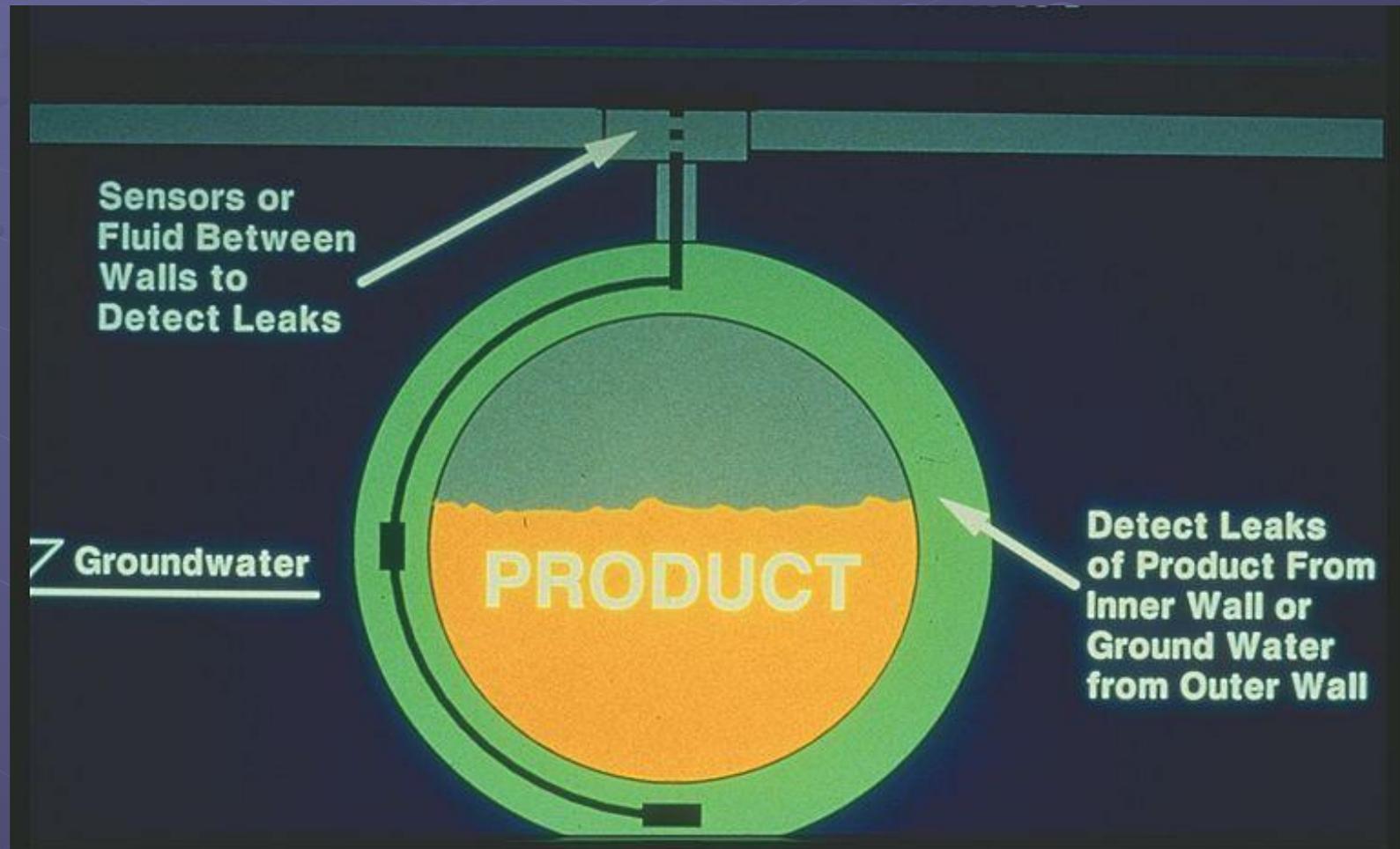
# Interstitial Monitoring

Interstitial Monitoring **must** be used for all tanks and/or piping installed after October 1, 2008

Interstitial Monitoring can be used for leak detection for double walled tanks and/or piping installed before October 1, 2008

# Interstitial Monitoring

Monitors the Space between two walls or the  
“Interstice”





# Interstitial Monitoring

- Electronic sensors
  - Ensure electronics are functioning properly and maintained
- Manual - visually check every 30 days
  - Some have viewing port built in
  - Can simply open sumps and inspect
  - Ensure that written record of visual checks is maintained

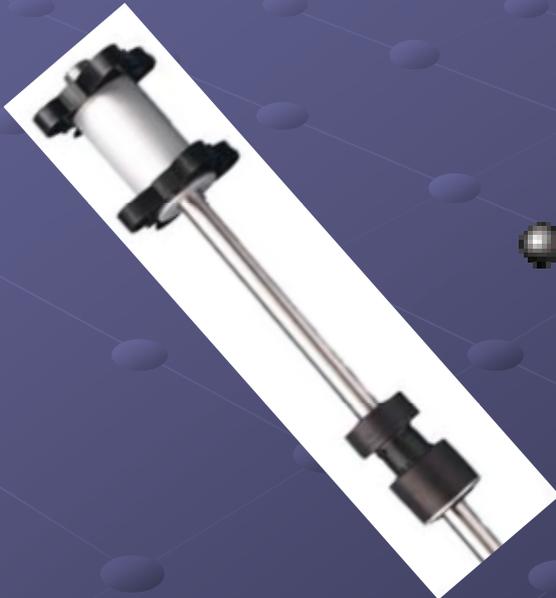
# Methods for monitoring



- Sensors - to detect the presence of vapors, stored liquid or in the interstice

- Manually "sticking" - to check for liquids

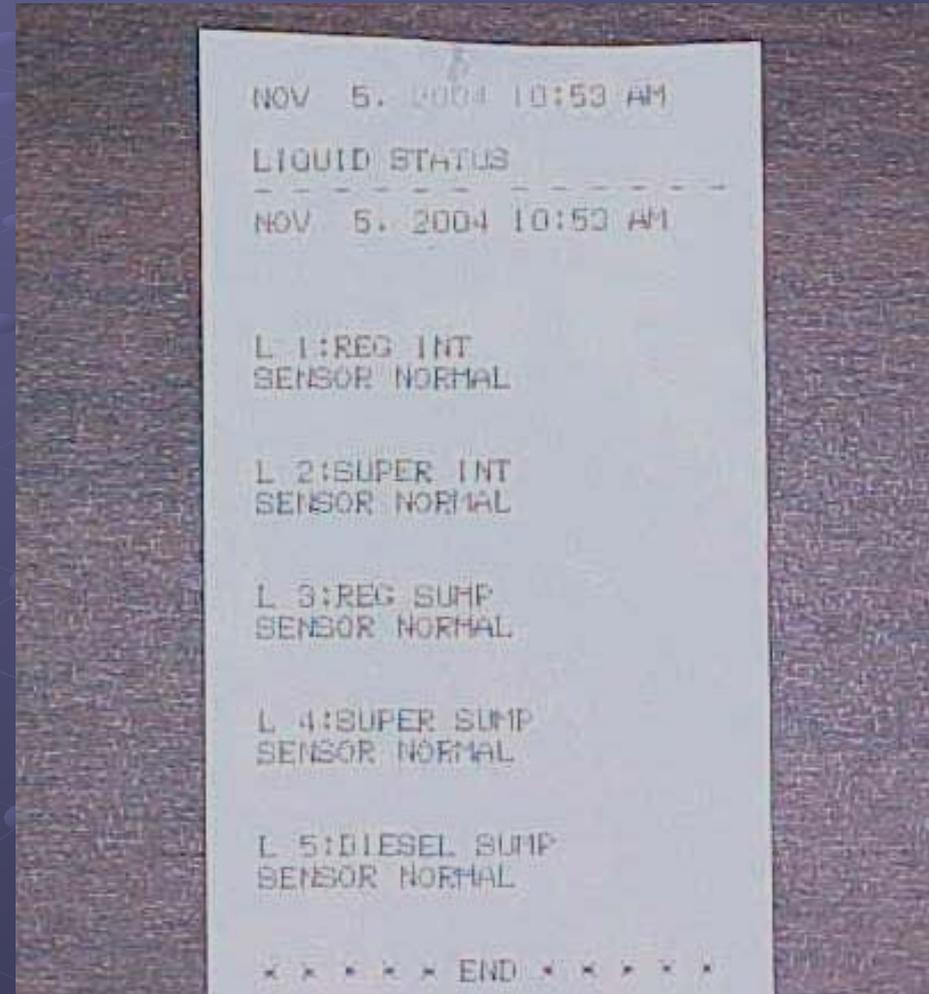
- Pressure gauges –detect a drop of pressure between the interstice



# Electronic Interstitial Monitoring

## Must maintain:

- Sensor status report
- Alarm history and reconciliation log
- Sensors must be tested annually



```
NOV 5, 2004 10:53 AM
LIQUID STATUS
-----
NOV 5, 2004 10:53 AM

L 1:REG INT
SENSOR NORMAL

L 2:SUPER INT
SENSOR NORMAL

L 3:REG SUMP
SENSOR NORMAL

L 4:SUPER SUMP
SENSOR NORMAL

L 5:DIESEL SUMP
SENSOR NORMAL

* * * * * END * * * * *
```



# Visual Interstitial Monitoring

## Tanks

- Manually sticking the access port of a steel tank
- Looking at the brine level
- Looking at the vacuum gauge

## Piping

- Looking in containment sumps
- Looking at vacuum/pressure gauge



# Interstitial Monitoring Problems

- Record keeping
  - Not reconciling alarms
  - Not writing a monthly report for visual monitoring
- Maintaining sensors
- Not visually inspecting dispenser sumps



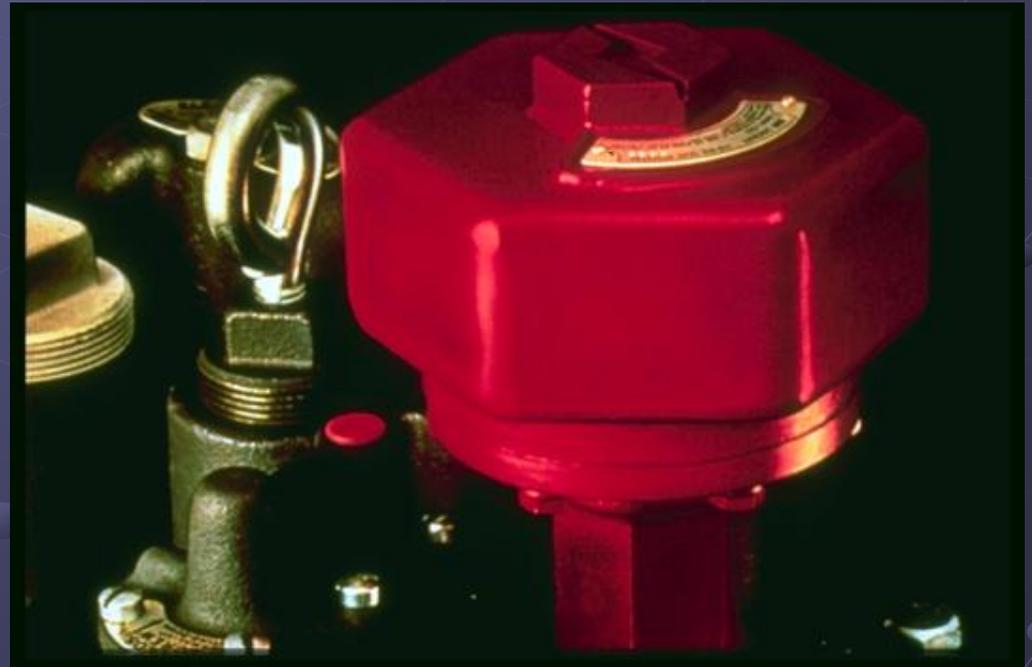
# When should leak detection be monitored?

A minimum of **every 30 days** for:

Monitoring Wells  
Automatic Tank Gauging  
Interstitial Monitoring  
Manual Tank Gauging  
Inventory Control / SIR

# Additional Piping Release Detection

- Pressurized versus suction
- Automatic line leak detectors
- Containment sumps
- Shear Valves





# Piping

## ● Pressurized

- Uses a submersible pump at the tank
- Provides faster flow of product to dispenser

## ● Suction

- Used at older service stations
- Requires a pump at the dispenser



# Pressurized Piping Requires

Two forms of release detection

1. Automatic Line Leak Detectors
2. Another form of Release Detection
  - Monitoring wells
  - Interstitial monitoring
  - Precision tightness testing

# New Piping Requirements

New piping installed after October 1, 2008 must be double-walled and use automatic line leak detectors and interstitial monitoring for release detection.





# Automatic Line Leak Detectors

- Installed on all pressurized piping
- Must be able to detect a leak equivalent to 3 gph @ 10 psi
- Must be tested once every 12 months
- Can be Mechanical or Electronic



# Automatic Line Leak Detectors



Mechanical



Electronic



# Issues with Automatic Line Leak Detectors (ALLD)

ALLD will wear out

ALLDs will need to be replaced periodically

ALLDs must be tested annually

ALLDs must be able to detect a leak of 3 gph at 10 psi – this does not mean your leak detector is set at this rate



# What does an ALLD do?

- Pump will go into slow flow
- Customers will complain pump keeps clicking off

**When this happens, call your contractor**



# Containment Sumps

New double-walled piping requires a containment sump at each end. These sumps are usually

- At the submerged pump
- At the dispenser island

But, if you are only installing a partial new pipe run that does not extend to the pump or island, additional containment sumps are necessary

# Containment Sumps





# Look for



Jacket Integrity



Pipe Boot Integrity



# Sump Integrity

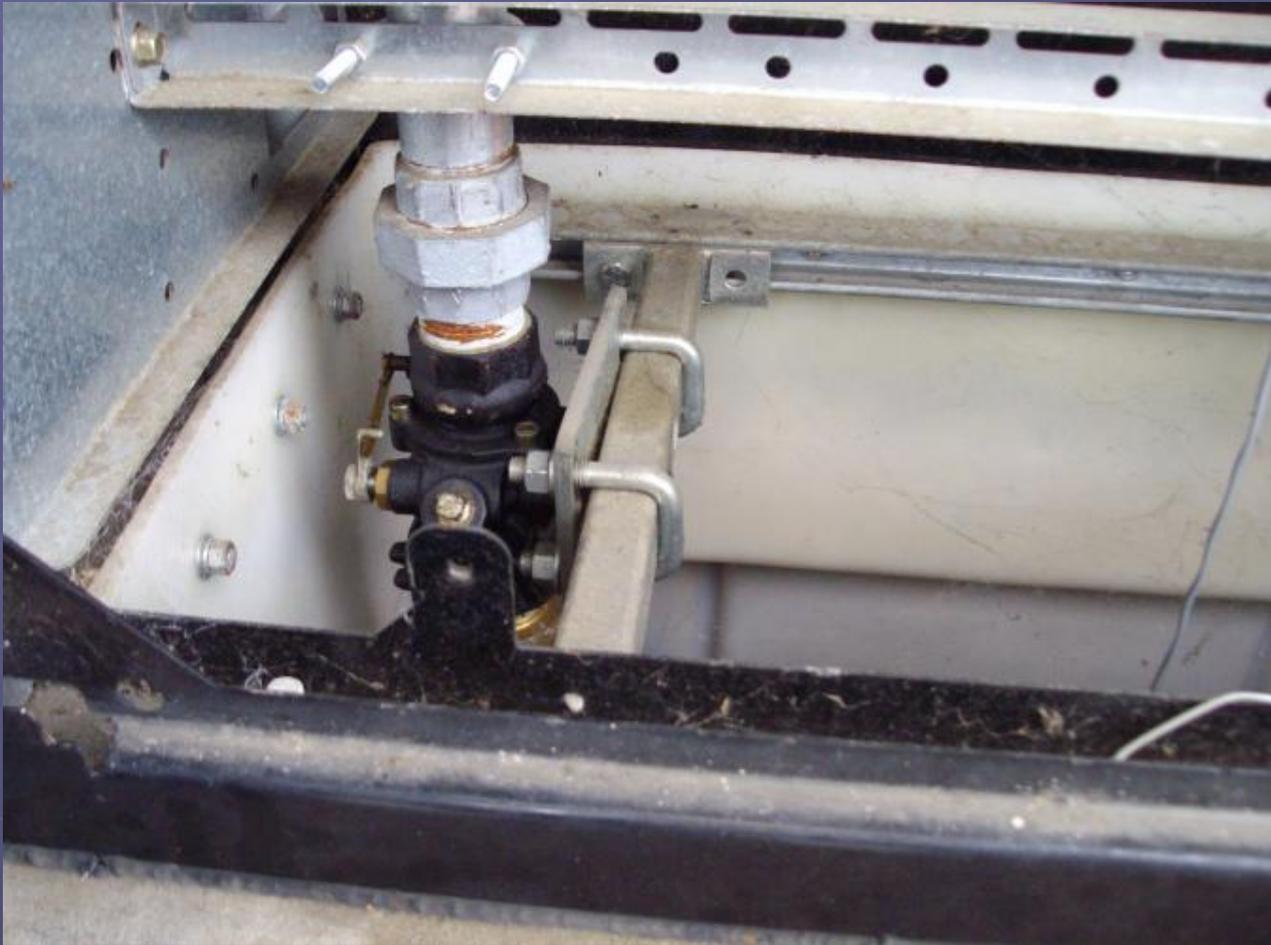


# Shear Valves

All shear valves at each dispenser must be inspected every 12 months (yearly)



Are they anchored?



Will they work?



Notification

Emergency Response and Release

Reporting

Record Keeping

Temporary and Permanent Closure

Release Detection

**Release Prevention**

Financial Responsibility

UST Operations Clerk Training



# Release Prevention Categories

Spill and Overfill prevention

Corrosion Protection

Product compatibility

# Spill and Overfill Prevention

## Spill Buckets



## Overfill Devices

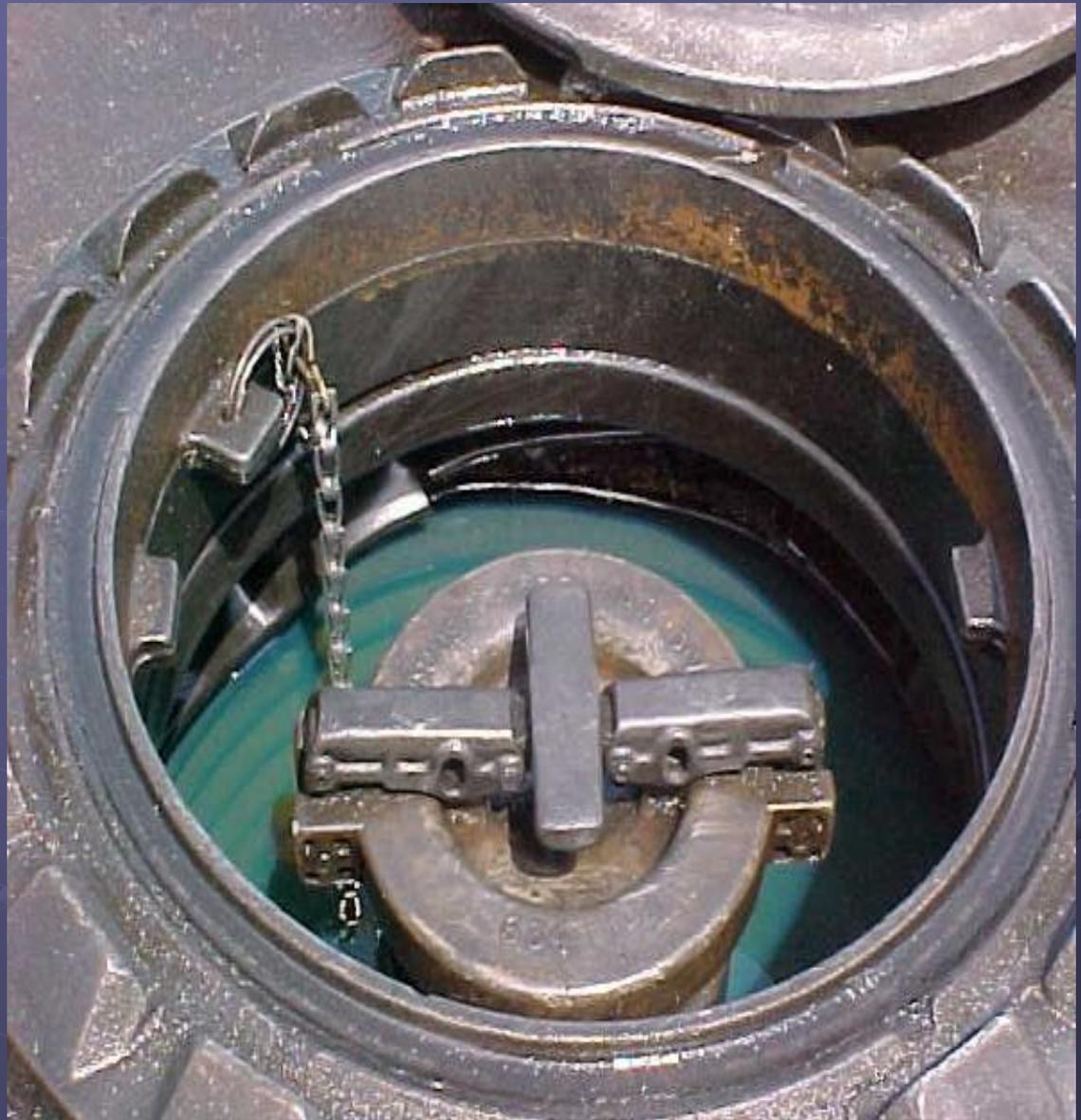


# Spill Buckets

Must be checked  
**before and  
immediately after  
each delivery**  
of petroleum  
product



The purpose of the spill bucket is to catch a spill when a fuel delivery is made



# Annual Spill Bucket Integrity Tests







# Spill Bucket?? Really?





# Why Spill Buckets are Important



# 9,000 gallon release





# Overfill Prevention

RESTRICT



ALARM



SHUT OFF





# OVERFILL PREVENTION RULES

---

(1) Alert @ 90% tank capacity

(a) Restrict flow

(b) Trigger alarm

(2) Shut off flow @ 95% tank capacity



# OVERFILL PREVENTION RULES

---

- (3) Restrict flow 30 minutes prior to overfilling
- (4) Alarm 1 minute prior to overfilling
- (5) Shut off flow before any tank top fittings are wetted

# Causes of Overfills

Most overfills occur because of human error and not because the overfill prevention equipment fails

Biloxi, MS

1998



Figure 3. One of the sedans and the pickup after emergency responders extinguished the blaze. The Premium cargo tank truck is in the background.

# Two Kinds of Overfills

1. “VISIBLE” - Above ground release – Product visible on top of the ground



# Two Kinds of Overfills

2. “HIDDEN” - Underground - Probably would not realize it is occurring – Not seen by most leak detection methods





# Spill and Overfill Inspections

Spill Buckets must be tested every 12 months (once a year)

Overfill prevention devices must be inspected every 12 months (once a year) to ensure they will restrict flow as required

# Corrosion Protection

## GUIDELINES FOR THE EVALUATION OF UNDERGROUND STORAGE TANK CATHODIC PROTECTION SYSTEMS



MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY  
OFFICE OF POLLUTION CONTROL  
UNDERGROUND STORAGE TANK BRANCH  
P.O. BOX 10385  
JACKSON, MS 39289-0385  
TELEPHONE: (601) 961-5171  
FACSIMILE: (601) 961-5093

[www.deq.state.ms.us](http://www.deq.state.ms.us)

JULY 1, 2002

# What is Corrosion?

Corrosion is defined as the degradation of a material or its properties due to a reaction with the environment.





# How can we prevent corrosion?

Use non-corrodible material

Or

Use Cathodic Protection



# What needs cathodic protection?

Any metallic object that routinely contains product and is in contact with the soil or submerged in water must be cathodically protected

# Specific Examples

- Tanks
- Piping
- Metal Couplings



# Two Types of Cathodic Protection

- Galvanic
  - Uses anodes
- Impressed Current
  - Uses electricity

Both work the same way - just have a different energy source



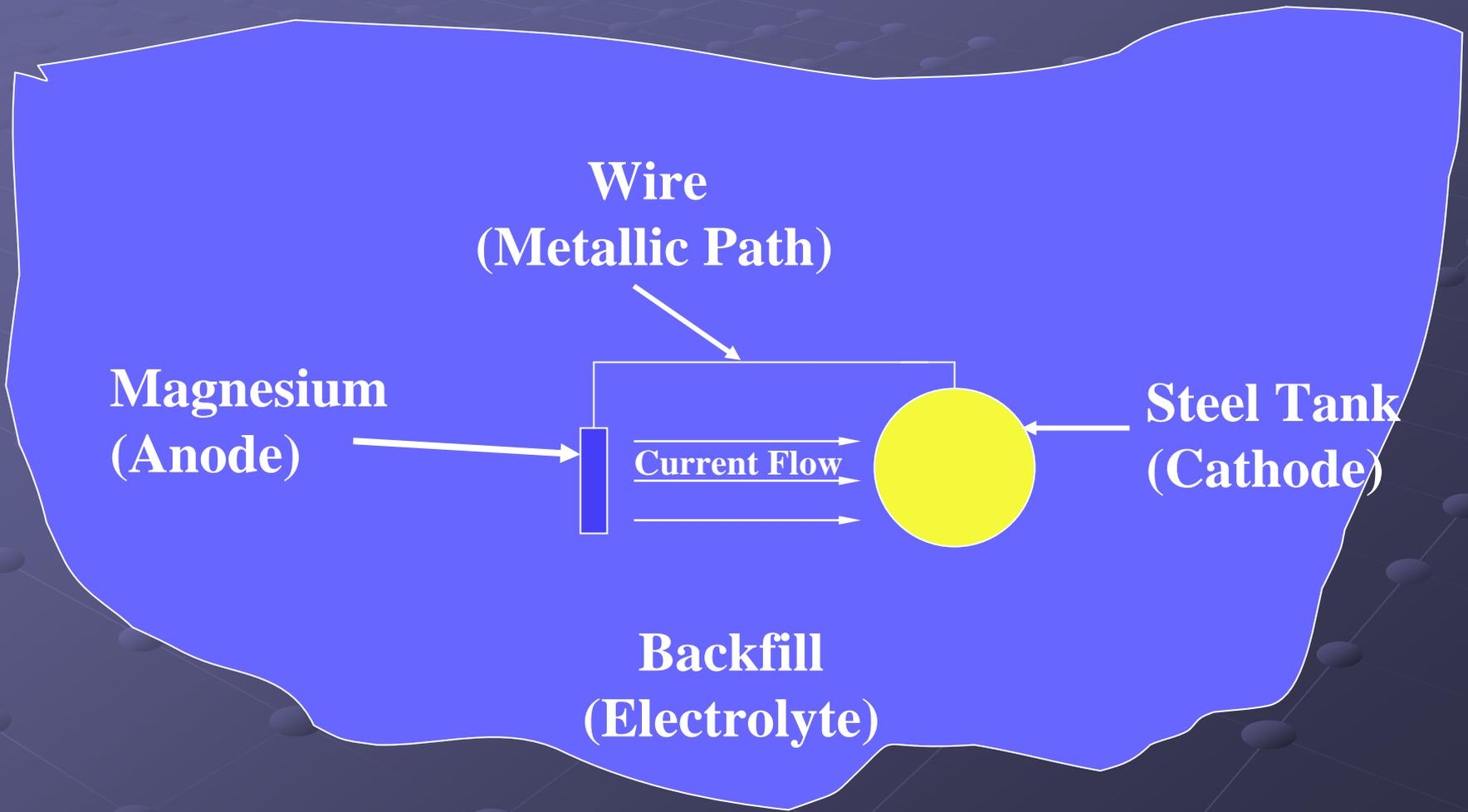
# How does Galvanic work?

Anodes are placed in the ground and wired to the tanks and piping

Anodes provide their own source of power



# Galvanically Protected Tank

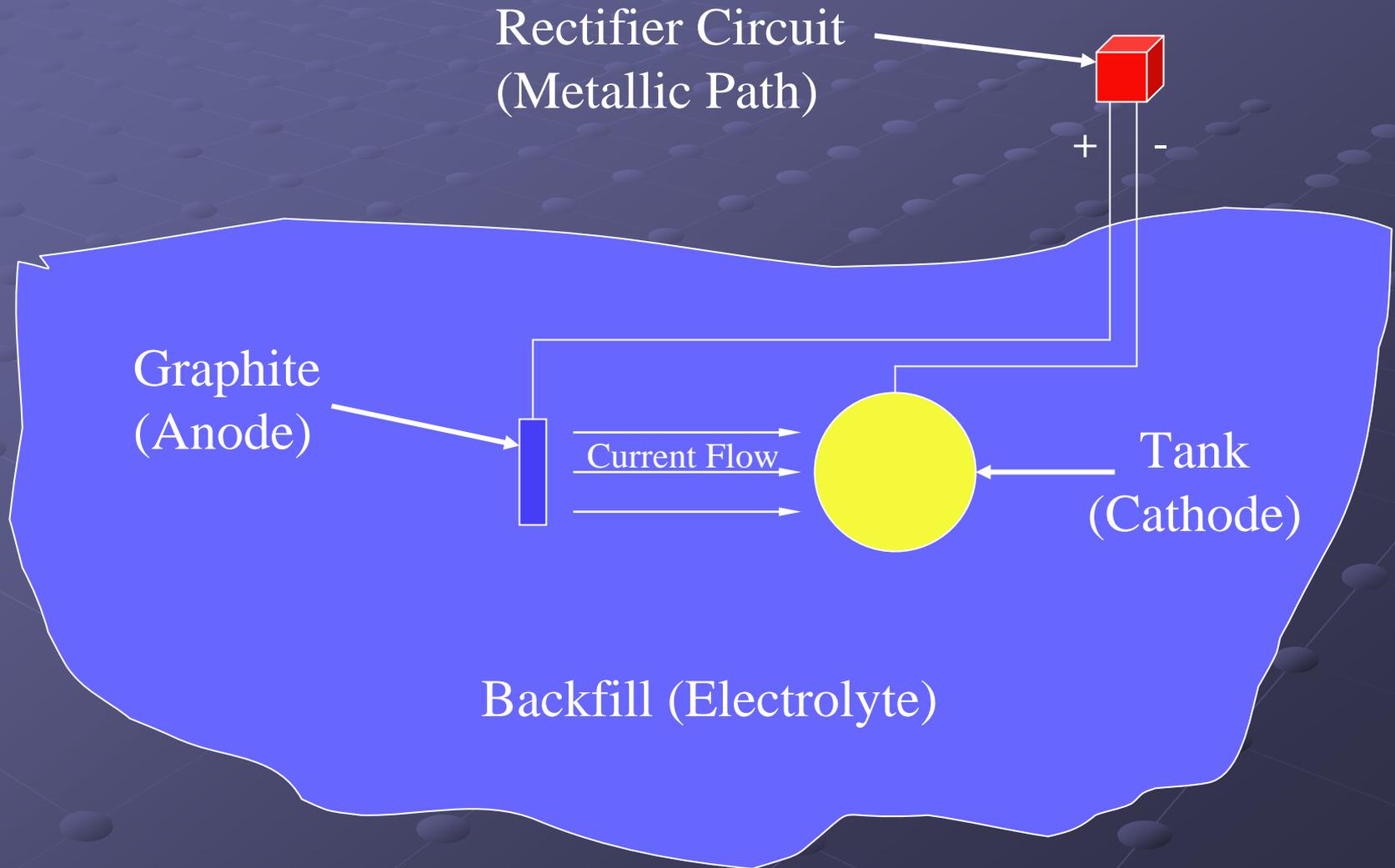


# How does Impressed Current Work?

- Uses an outside power source (AC electrical service) as source of current
- A rectifier converts the current from AC to DC
- Anodes are wired to rectifier

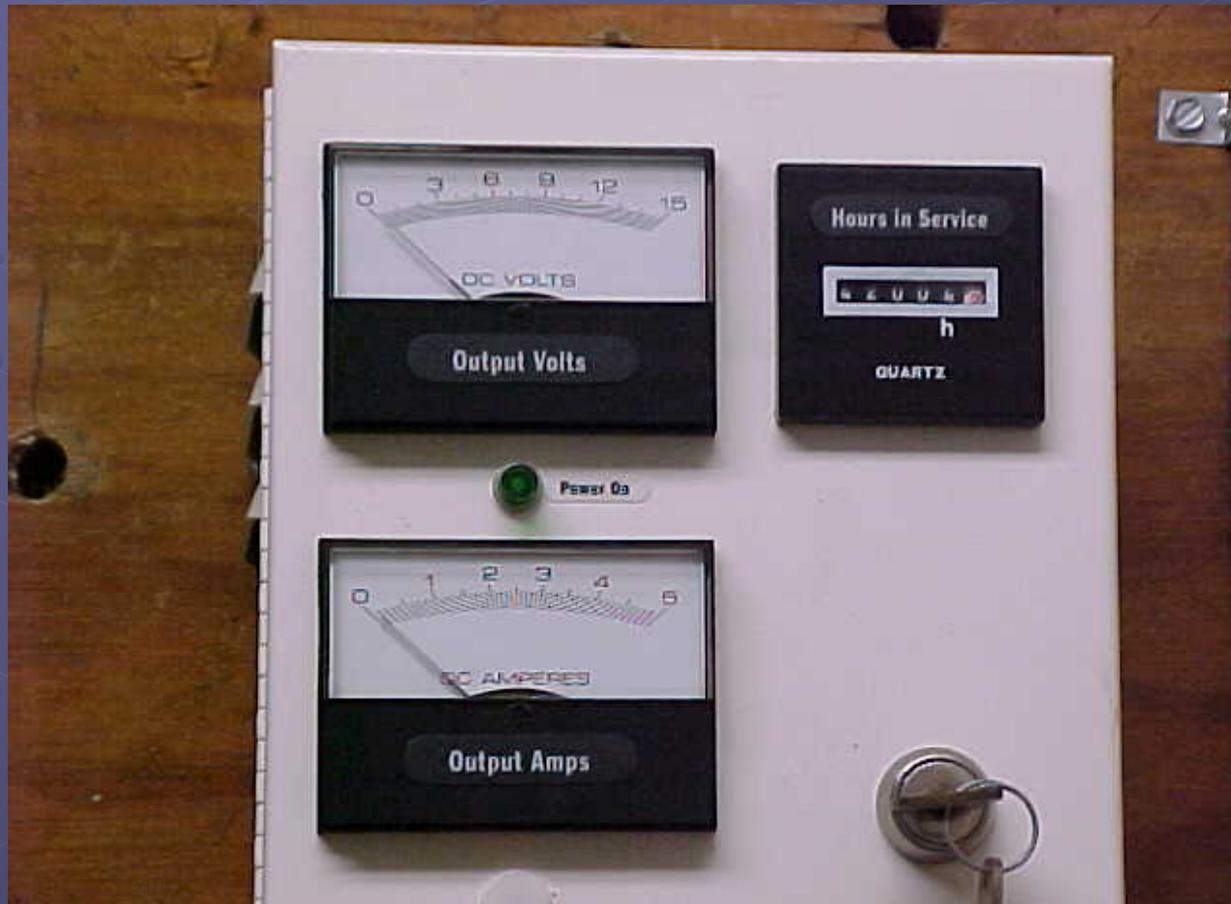


# Impressed Current System



Impressed Current must

Be checked every 60 days





# Cathodic Protection Evaluation

**Every three (3) years**, cathodic protection systems must be evaluated for their effectiveness. This testing is still required if your tanks are temporarily out of service.

Remember, impressed current systems are also checked every 60 days



# Product Compatibility

All  
petroleum  
product is  
not  
compatible  
with all  
UST  
Systems



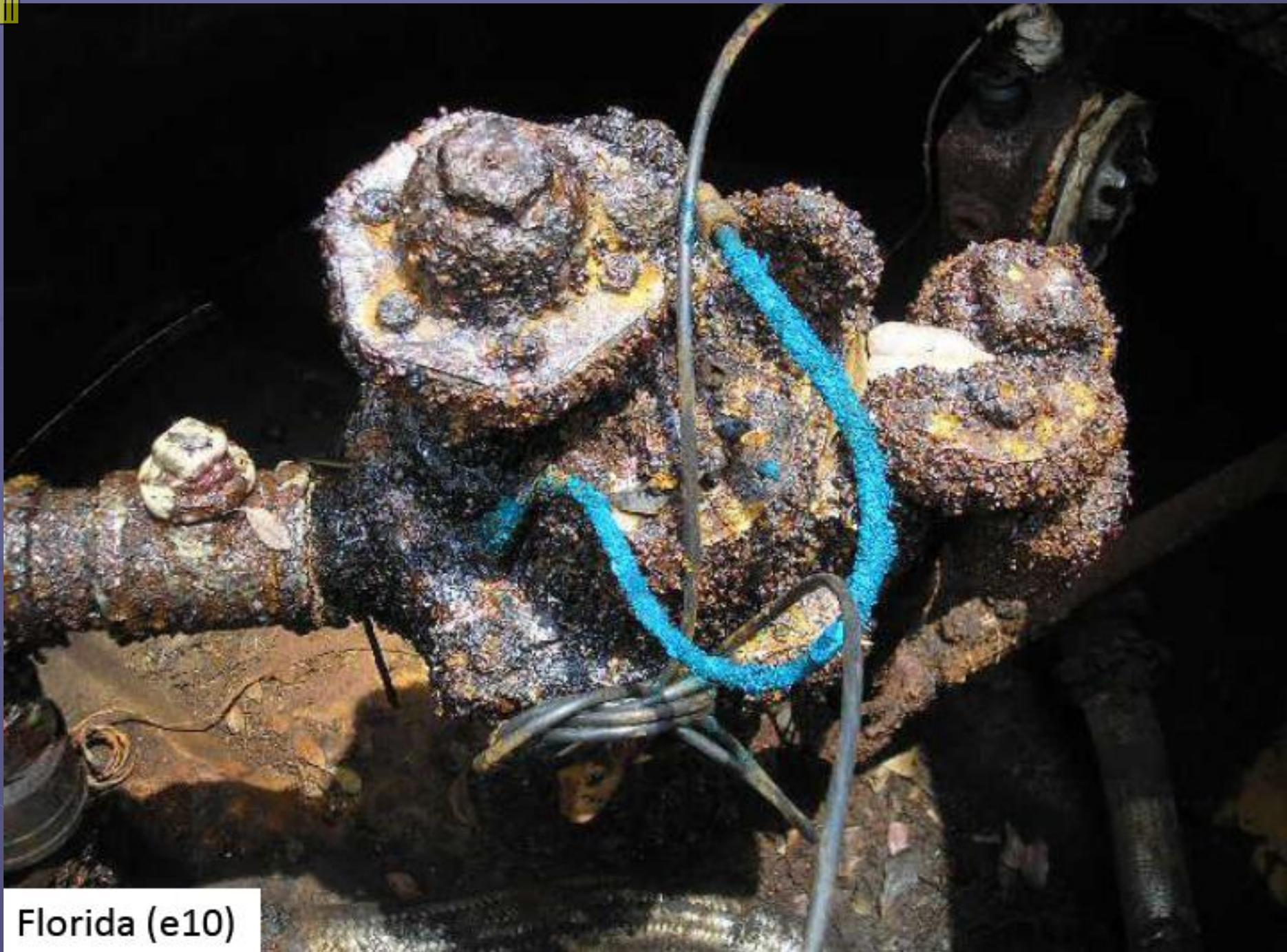
Mississippi (e10)

Photo 12-09



## 40 CFR 280

“Compatible” means the ability of two or more substances to maintain their respective physical and chemical properties upon contact with one another for the design life of the tank system under conditions likely to be encountered in the UST”



Florida (e10)

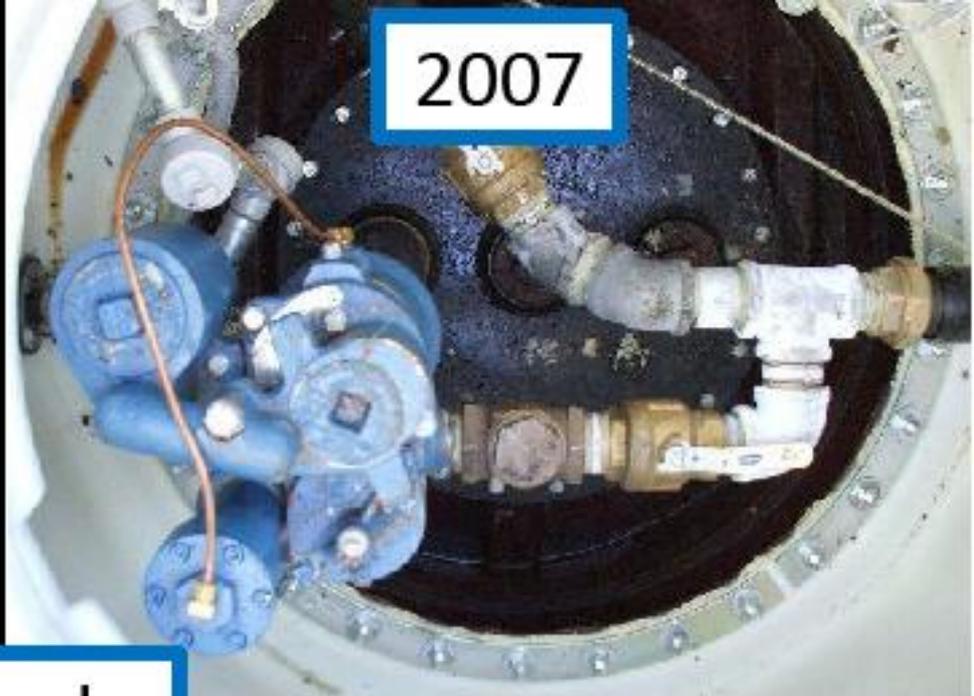
# How Long Does it Take?



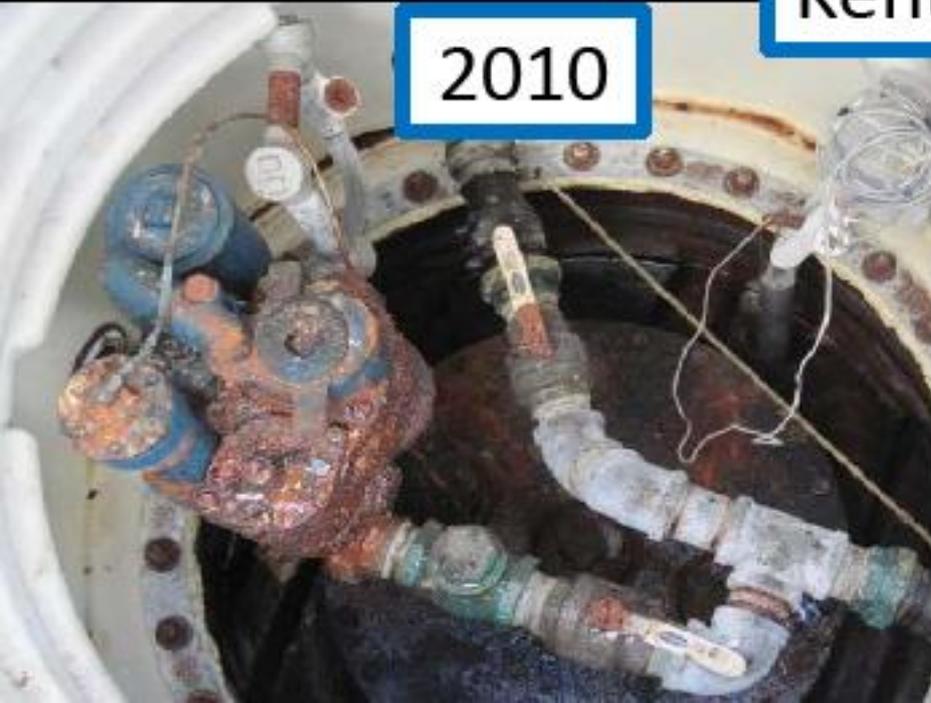
Tennessee - March 2010



Tennessee - August 2010



Kentucky







# Example Table

## Metal Compatibility with E85

### Compatible

Unplated Steel  
Stainless Steel  
Black Iron  
Bronze  
Nickel Plate  
Nickel Plate

### Non Compatible

Zinc  
Brass  
Lead (& lead alloys)  
Aluminum and certain  
Aluminum Alloys\*  
Terne Plate  
Copper

\*Intermittent contact with Aluminum Alloys, example given transport trucks, has not shown any compatibility problems.



# What do you do?

Check with the tank and piping manufacturer  
and your certified contractor

May need to add a biocide to the fuel

Reduce excessive water in the tank

May need a fuel additive

Notification

Emergency Response and Release

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Temporary and Permanent Closure

Release Detection

Release Prevention

**Financial Responsibility**

UST Operations Clerk Training



# Financial Responsibility is...

Required by federal regulation to ensure money is available for taking corrective action and for compensating third parties for bodily injury and property damaged caused by accidental releases arising from the operation of petroleum USTs



# Mechanisms to meet financial responsibilities

- Pollution Insurance
- Self Insurance (\$10 million company)
- Guarantee
- Surety Bond
- Irrevocable Letter of Credit
- Trust Fund



# Mississippi Groundwater Protection Trust Fund

The Mississippi Groundwater Protection Trust Fund (Trust Fund) is the most common resource used for financial responsibility.

- no deductible for the tank owner
- no premiums to be paid by the tank owner
- requires substantial compliance with all UST regulations



# Eligibility for the Trust Fund

UST owners that have made a good faith effort to comply with the UST regulations are eligible for the Trust Fund

- Register USTs
- Pay tank fees
- USTs contain or contained motor fuels
- Maintain compliance with regulations



Notification

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Financial Responsibility

**UST Operations Clerk**

**Training**



# UST Operations Clerk Training

- Trained by facility UST Compliance Manager

or

- Successful completion of MDEQ approved on-line course



# Trained by UST Compliance Manager

- All emergency shutoffs (e-stops)
- Identify tank beds, dispensers, and product hoses
- Identify Sensitive Receptors (storm drains, ditches, etc)
- Tank monitor alarms and warnings
- Fire Extinguishers
- Spill Kits
- Emergency Contact List
- How to respond to an emergency

# Emergency Shutoffs



# Identify Components







# Identify Sensitive Receptors





Release as a result  
due to apparent  
Lightning Strike



Birmingham, AL

# Tank Monitors and Alarms



# What to do when:

```
06-28-01  1:05 PM

SYSTEM STATUS REPORT
-----
T 1:LOW PRODUCT ALARM
T 1:DELIVERY NEEDED
T 2:LEAK ALARM
T 2:SUDDEN LOSS ALARM
T 3:LOW PRODUCT ALARM
T 3:DELIVERY NEEDED

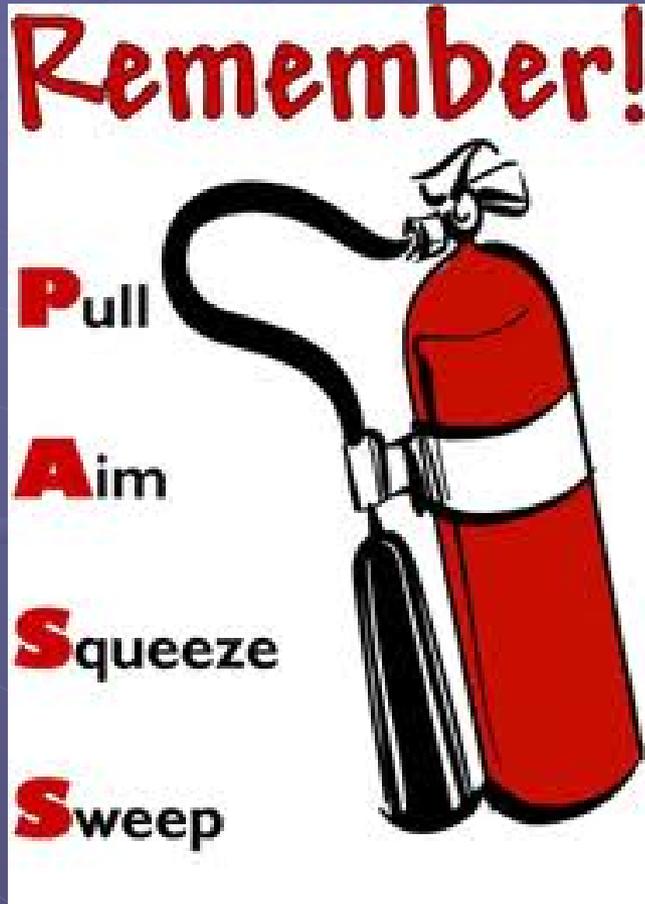
INVENTORY REPORT

T 1:DIESEL
VOLUME      =    914 GALS
ULLAGE      =    9086 GALS
90% ULLAGE  =    8086 GALS
TC VOLUME   =     908 GALS
HEIGHT      =   14.12 INCHES
WATER VOL   =     41 GALS
```

Leak Alarm

Delivery Alarm

# Fire Extinguishers



**P**ull the pin

**A**im the nozzle

**S**queeze the trigger

**S**weep side to side

# Spill Kits



# EMERGENCY CONTACTS

Store Name: \_\_\_\_\_

Store Address: \_\_\_\_\_

Store City: \_\_\_\_\_

Store Phone No.: \_\_\_\_\_

Store Manager: \_\_\_\_\_

Main Phone No.: \_\_\_\_\_ Alt Phone No. \_\_\_\_\_

UST Compliance Manager: \_\_\_\_\_

Main Phone No.: \_\_\_\_\_ Alt Phone No. \_\_\_\_\_

Fire Department Phone No.: \_\_\_\_\_

Police Department Phone No.: \_\_\_\_\_

# Handling an Emergency



# Show the operators your Emergency Procedures Plan

## EMERGENCY PROCEDURES

### In Case of Fire

1. Press Emergency Stop (e-stop)
2. Call 911
3. Control & Secure the area
4. Call Manager and UST Compliance Manager



### In Case of Large Spill (greater than 5 gallons)

1. Press Emergency Stop (e-stop)
2. Call Manager and UST Compliance Manager  
If product goes offsite, call 911
3. Control & Secure the area
4. Use spill kit to keep the product from spreading



### In Case of Small Spill (less than 5 gallons)

1. Press Emergency Stop (e-stop) if necessary
2. Control & Secure the area
3. Use the spill kit to clean up the product
4. Call Manager and UST Compliance Manager



# Now What?

Compliance  
Manager and  
Operations  
Clerk complete  
the UST  
Operations  
Clerks Log  
Form

UST Operation Clerks Log						
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY						
<p>➤ This form must be used to document that all UST Operations Clerks at this facility have been trained in accordance with the Mississippi Underground Storage Tank Regulations effective August 25, 2011</p> <p>➤ UST Operation Clerks must be trained before assuming UST clerk responsibilities.</p> <p>➤ This form must be kept at the facility and made available for review upon request.</p>						
<b>UST Facility</b>			<b>UST Tank Owner/Operator</b>			
Facility Name	Fac ID#		Owner Name:	Owner ID #		
Street Address			Mailing Address			
City	State	Zip	City	State	Zip	
<b>Training Documentation</b>						
<p>By signing this UST Operation Clerks Log, I (UST Operation Clerk) acknowledge that I have been trained by this facility's designated UST Compliance Manager (signed below) on the following information:</p>						
All emergency shutoffs (e-stops)			Fire Extinguishers			
Tank beds, dispensers, and product hoses			Spill Kits			
Sensitive Receptors (storm drains, ditches, etc)			Emergency Contact list			
Tank non/alarms and warnings (if applicable)			How to respond to an emergency			
<b>Date:</b>	<b>UST Operations Clerk:</b>			<b>Trained by UST Compliance Manager</b>		
	Printed Name:			Printed Name:		
	Signature:			Signature:		
	Printed Name:			Printed Name:		
	Signature:			Signature:		
	Printed Name:			Printed Name:		
	Signature:			Signature:		
	Printed Name:			Printed Name:		
	Signature:			Signature:		
PRODUCED BY THE MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY, OFFICE OF POLLUTION CONTROL, UST BRANCH PO BOX 247 JACKSON, MS 39202 PHONE (601) 561-6171 FAX (601) 561-6171 <a href="http://www.deq.state.ms.us">http://www.deq.state.ms.us</a> 3/12						



# Questions?

