



**UST Regulatory Compliance
Inspection Training**

*State Water Resources Control Board
Underground Storage Tank Program
September 2004*

Disclaimer

The material provided herein is not comprehensive of Chapter 6.7, California Health and Safety Code or Title 23, California Code of Regulations. This material should be used as a review for inspectors with some practical field experience, and should not be substituted for field training. This material is not intended as preparatory for International Code Council Certification Exams.

Outline

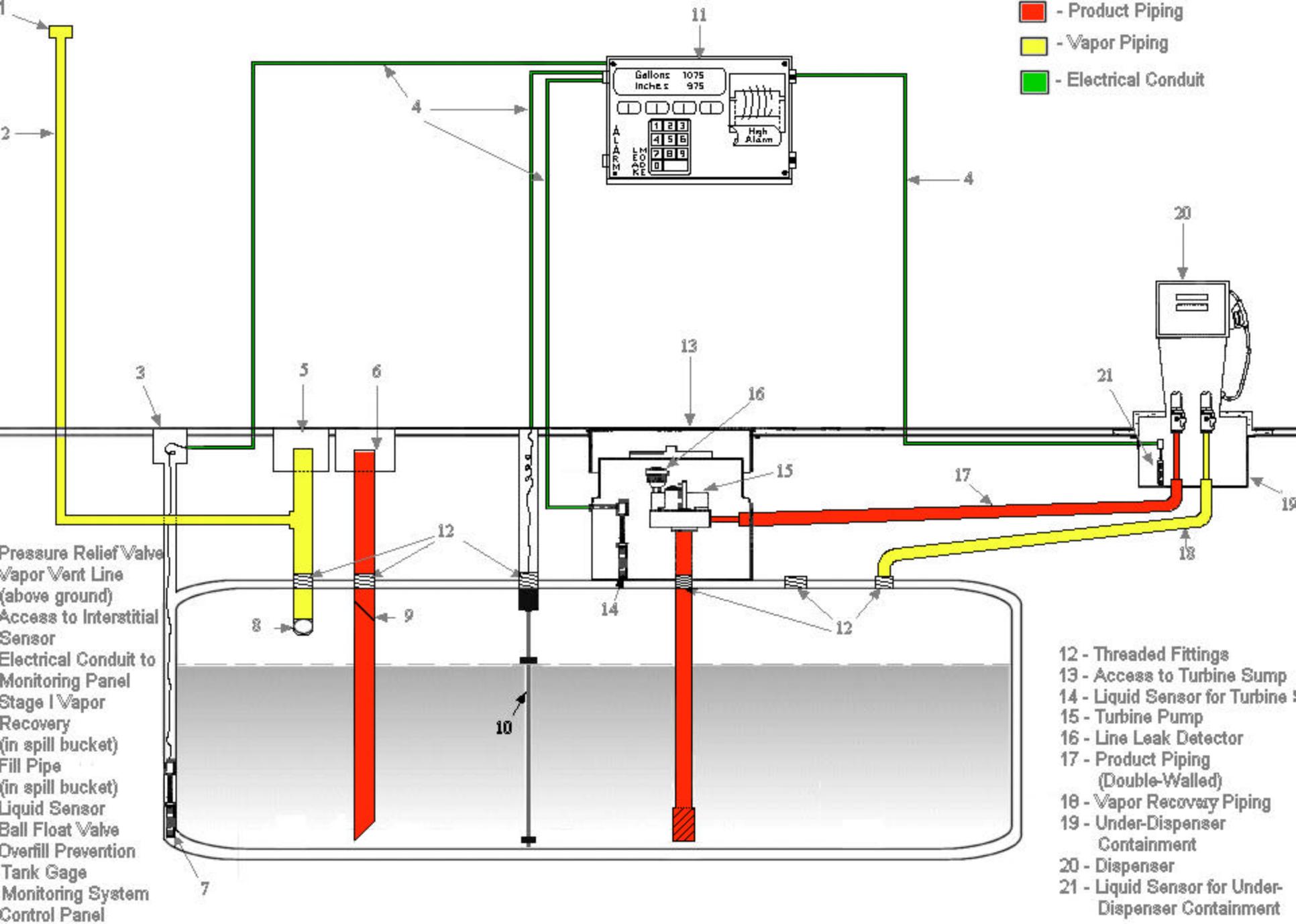
- Laws and Regulations
- Preparing for the Inspection
- Completing the Inspection
 - Facility Records Review
 - Facility Physical Inspection
- Inspection Follow Up
- SB 989, AB 2481, AB 1702

■ California UST System Breakdown

- **Single/Single:** Single-walled tank and piping
- **Double/Double:** Double-walled tank and piping
- **Hybrid:** Mixture of single-walled and double-walled tank and piping components
- Secondary containment required for hazardous substance (including petroleum) tanks installed after 1/1/84

UST Component Breakdown





Fiberglass Tank



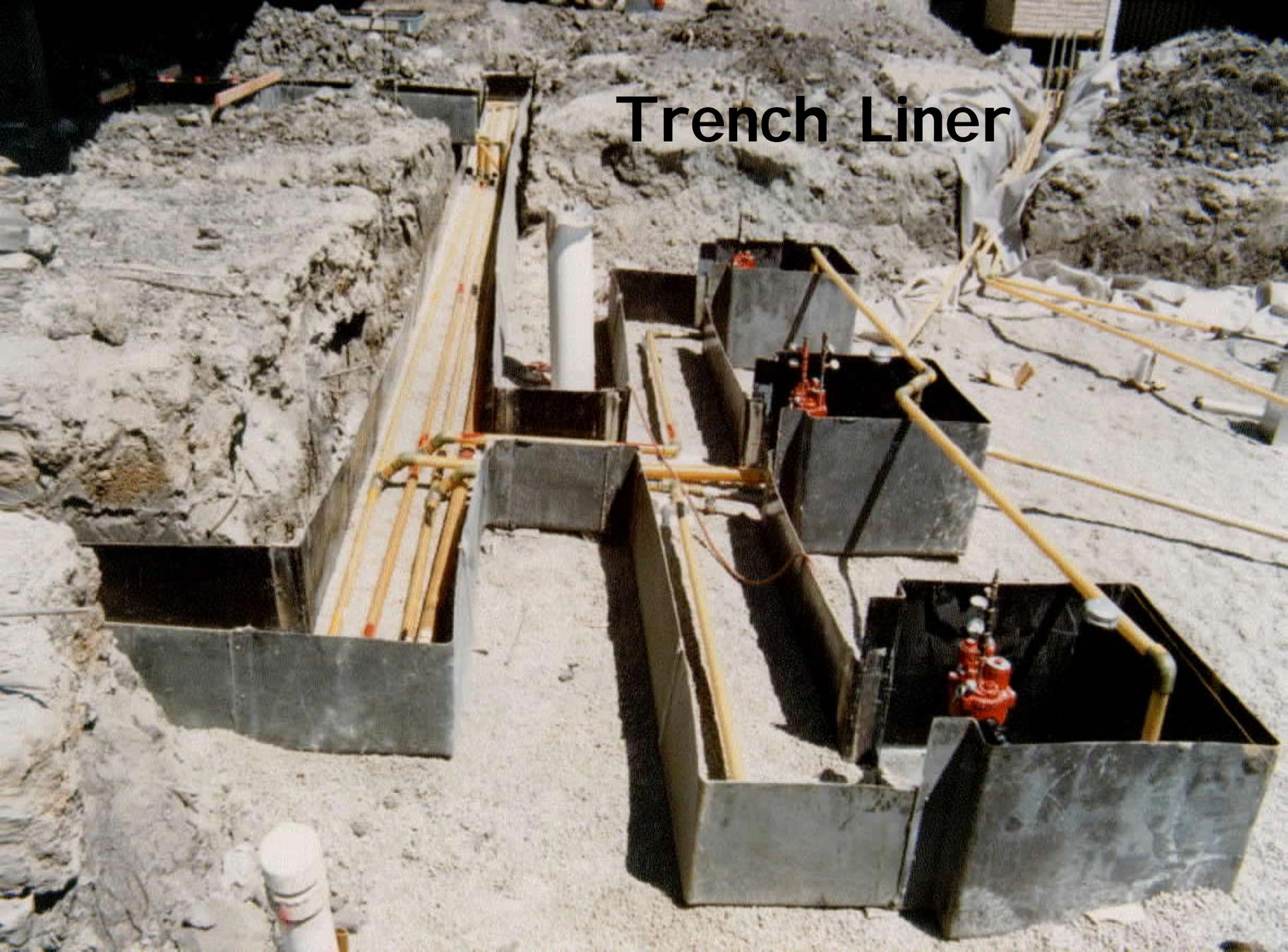
Steel Tank



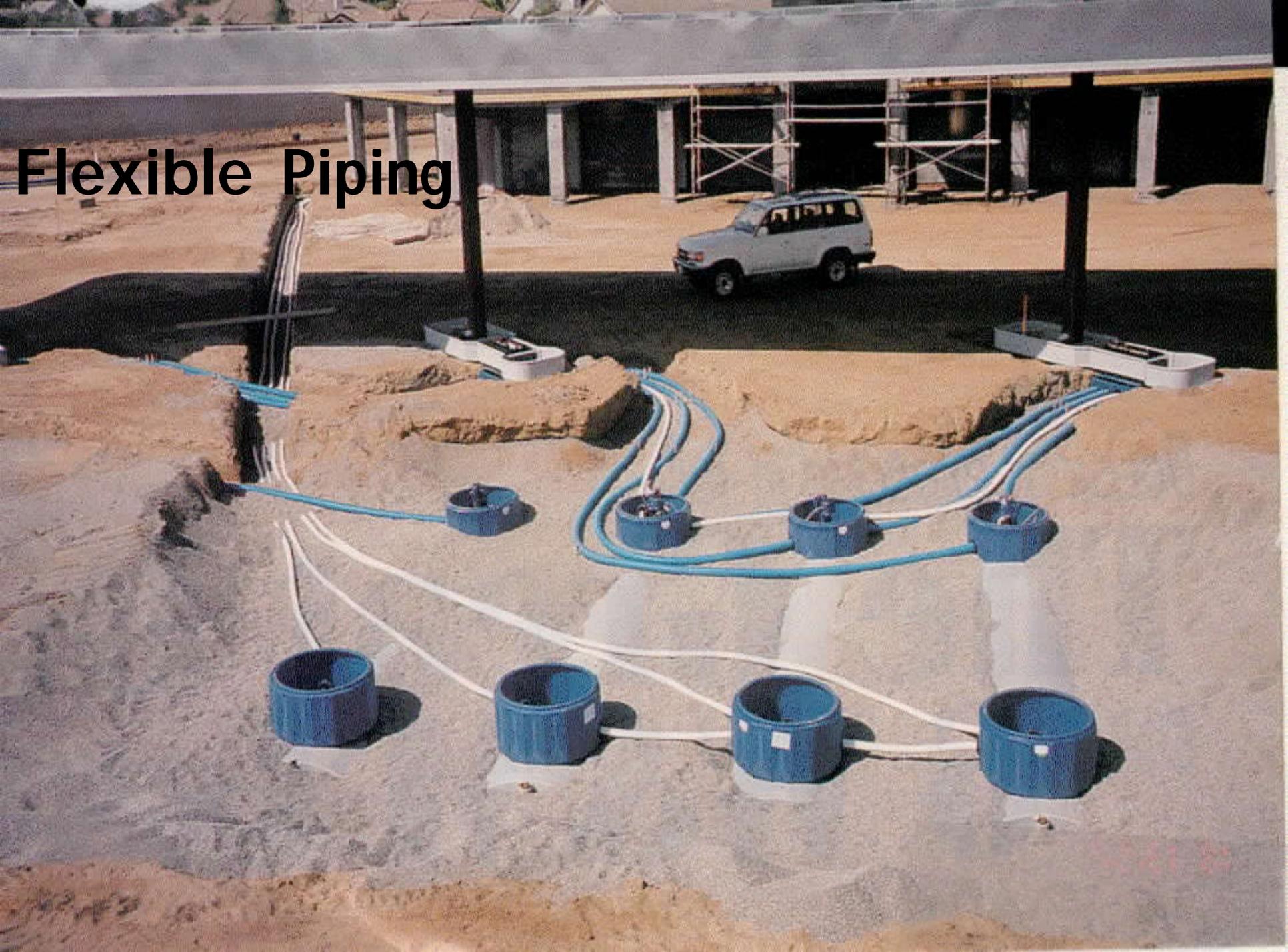


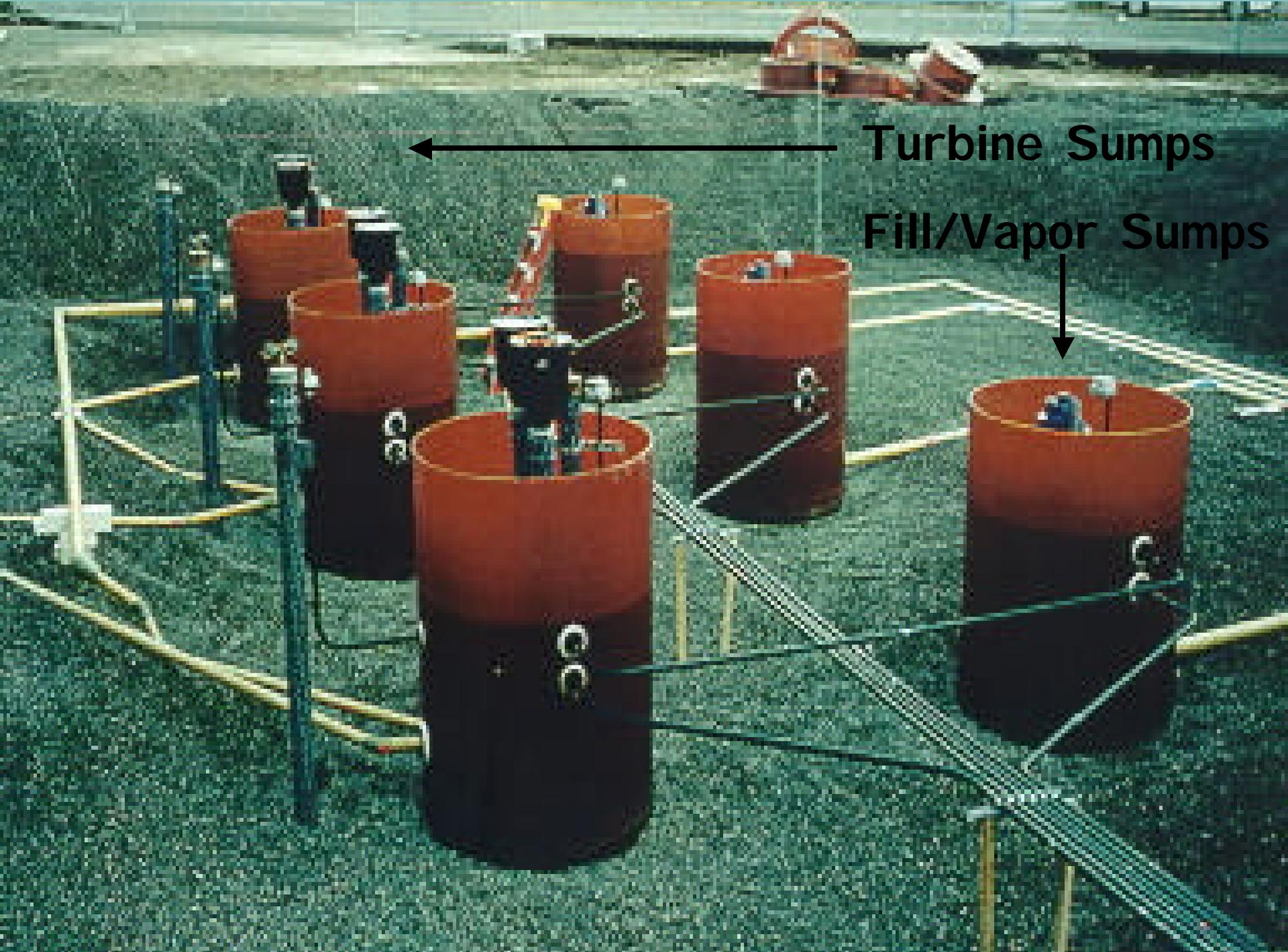
Fiberglass Piping

Trench Liner



Flexible Piping

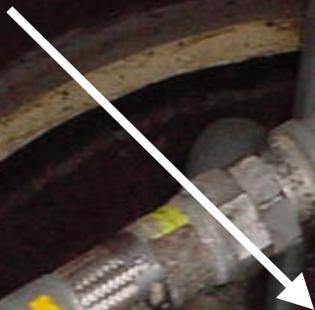




Turbine Sumps

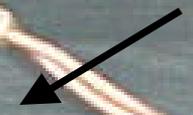
Fill/Vapor Sumps

Turbine

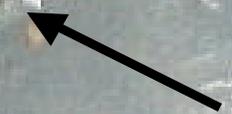


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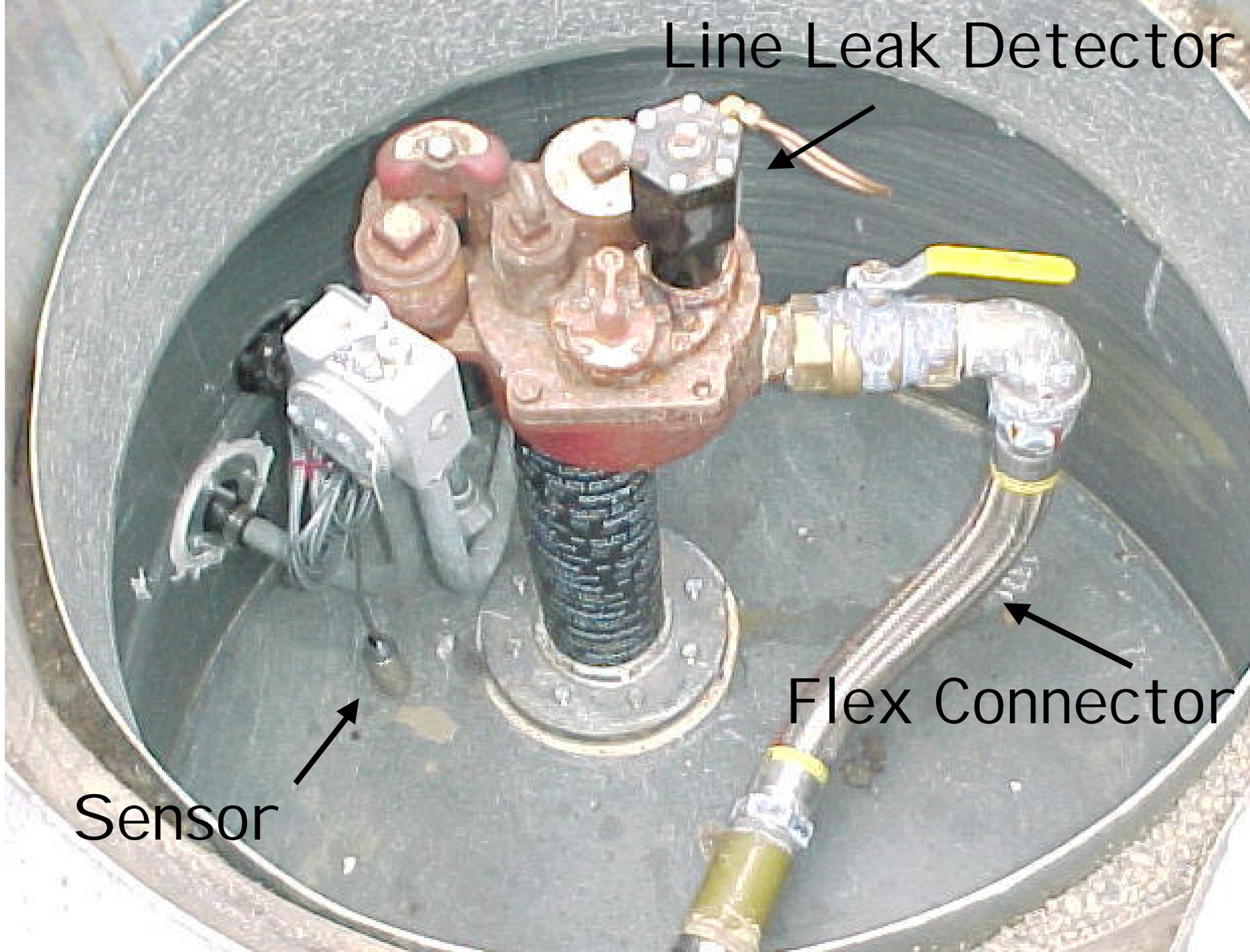
Line Leak Detector



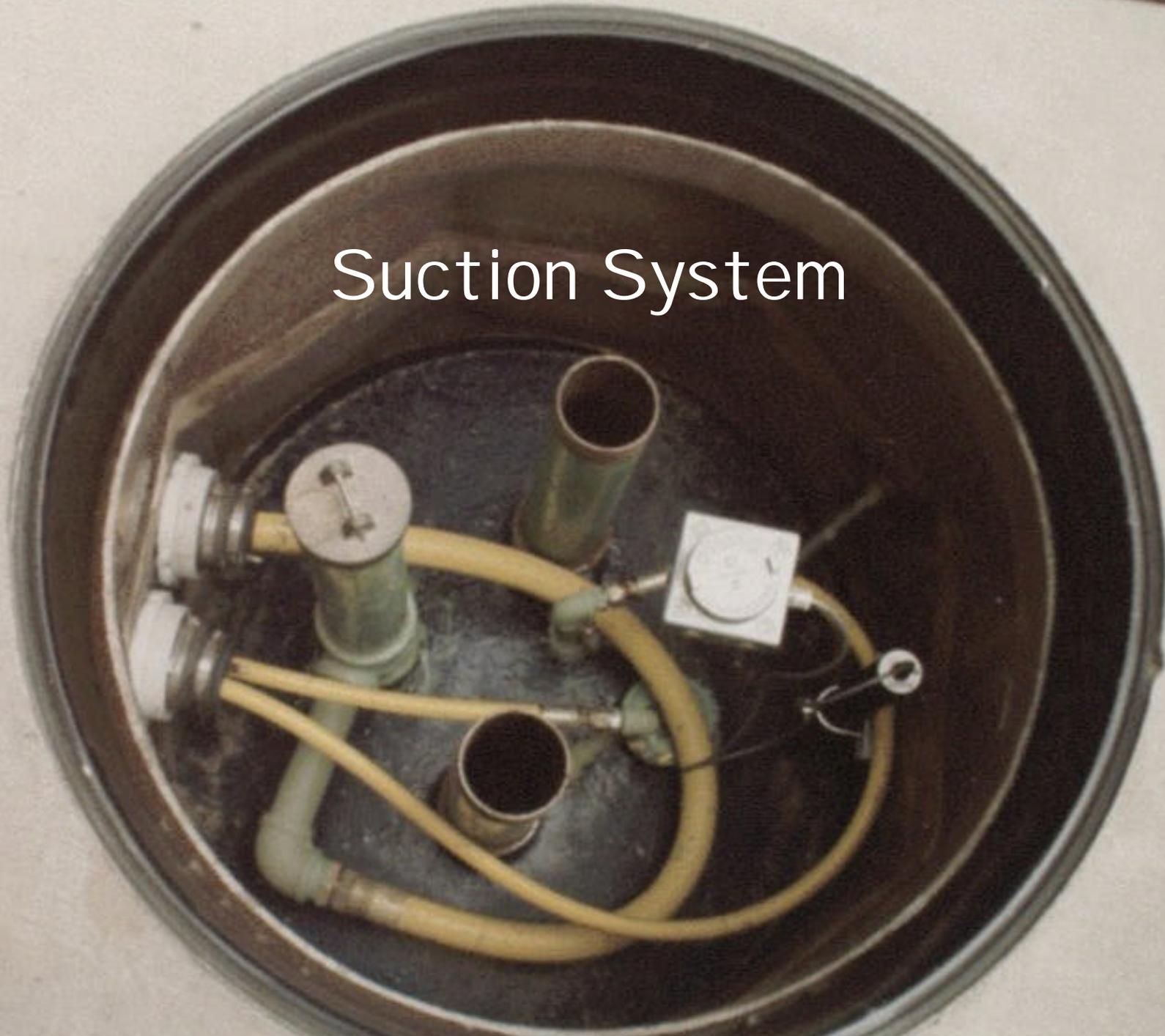
Flex Connector

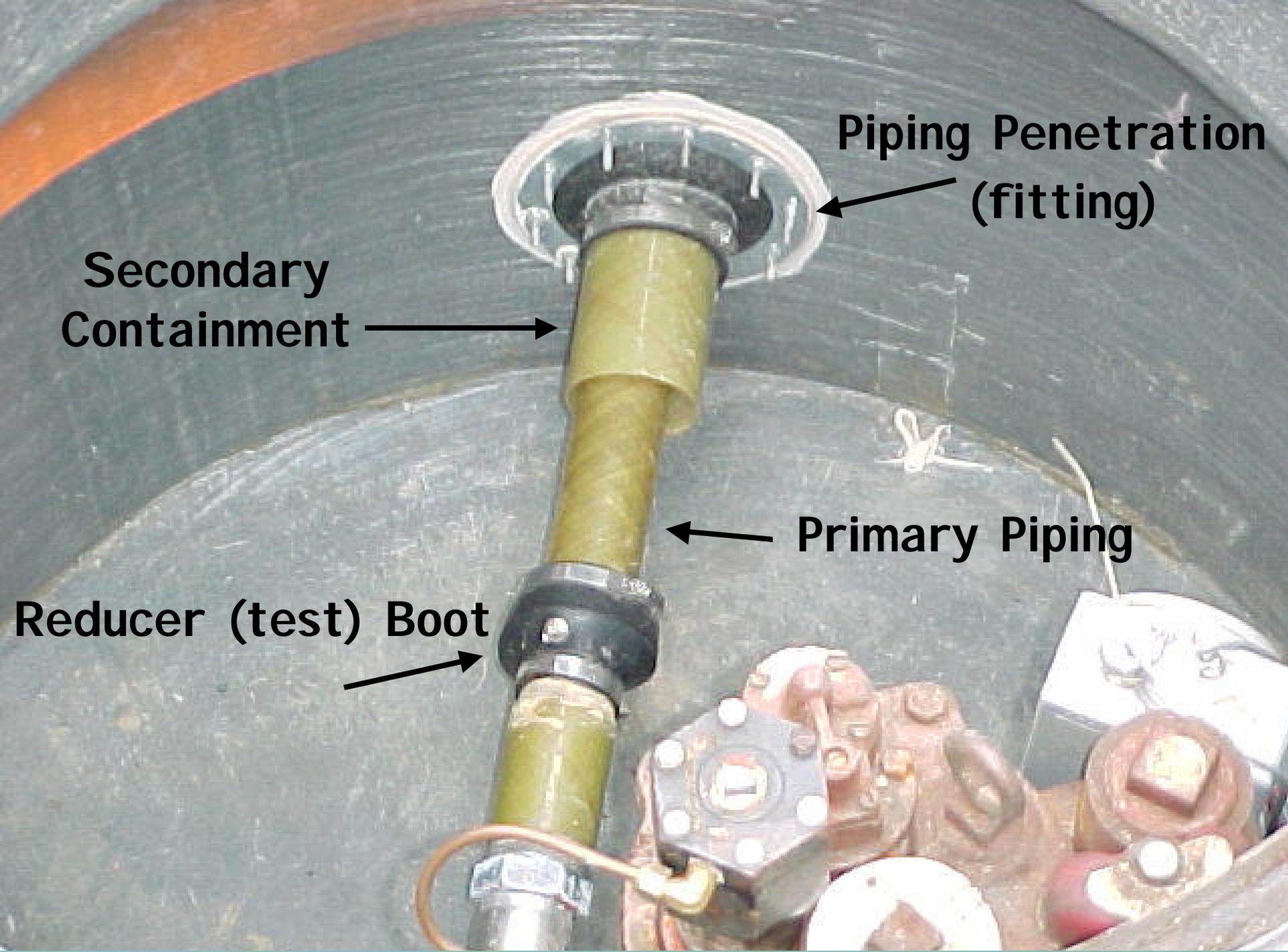


Sensor



Suction System





**Piping Penetration
(fitting)**

**Secondary
Containment**

Primary Piping

Reducer (test) Boot

Under Dispenser Containment





Mechanical Float

B

PERMIT ONLY

■ Laws And Regulations

- Title 40, Code of Federal Regulations (CFR): Developed and published by the United States Environmental Protection Agency
 - Enforce Subtitle I of the Resource Conservation Recovery Act
 - UST technical requirements and program approval can be found in Parts 280 - 281

■ Laws and Regulations

- California Health and Safety Code (HSC):
Law provides basic framework for UST
Program implementation
 - Chapter 6.7, underground storage of hazardous substances
 - Chapter 6.75, petroleum UST financial responsibility
 - The HSC can be found online at <http://www.swrcb.ca.gov/ust/>

■ Laws and Regulations

- Title 23, California Code of Regulations (CCR): Provides specific requirements to comply with Chapter 6.7 of the California Health and Safety Code
 - Title 23, Division 3, Chapter 16 can be found online at <http://www.swrcb.ca.gov/ust/>

■ Laws and Regulations

- Local Ordinances: County and City agencies may adopt additional and more stringent standards for USTs
 - Local Ordinances are available at City and/or County Local Agencies and at City and/or County Council Offices

■ Inspection Frequency

- The HSC requires UST facilities be inspected annually.

Scope of Annual UST Compliance Inspection

- Health and Safety Code, Section 25288(a):
 - Local Agency's purpose in conducting a compliance inspection is to determine whether the UST system complies with HSC and Title 23, CCR

Scope of Annual UST Compliance Inspection

- A complete inspection consists of the following:
 - Records review
 - Inspection of UST system containment and hardware to determine compliance with approved design and installation specifications
 - Inspection of UST monitoring system and alarm histories to determine overall condition and compliance with regulatory requirements and manufacturer specification
 - General site inspection to look for evidence of past spills, overfills, and/or leaks

Scope of Annual UST Compliance Inspection

- UST facility compliance “hands off” inspection approach includes:
 - Free and clear access of the entire UST system and leak detection equipment
- AND**
- Functionality of leak detection equipment by:
 - Witnessing maintenance company conduct annual maintenance, or
 - Review of current Monitoring System Certification

Scheduling The Inspection During Routine Maintenance

- Scheduling the UST inspection during routine maintenance provides the following advantages:
 - Easy access to inspect the UST system, including manways, dispenser areas, and leak detection equipment for inspection
 - Demonstrate functionality of leak detection equipment

■ Facility File Review

- Prior to the site inspection, review the facility files carefully
- Review the facility files for the following:
 - Tank system construction and monitoring
 - Current operating permit
 - Monitoring Program that includes a response plan and type of leak detection
 - Financial responsibility documentation
 - Previous inspection reports

■ Facility File Review

- Monitoring results such as: tank and/or line test reports, enhanced leak detection reports, annual inventory statements, annual maintenance on monitoring system, ATG reports...
- Compliance history
- Operating fees
- Up-to-date CUPA facility and tank forms

Inspection Checklist

■ THE CHECKLIST

- Inspectors can begin filling out the inspection form in the office. Information such as owner, address, phone, size of tanks, type of monitoring, etc., should be in the facility files (this information can be confirmed once on site)
- Use a checklist during the inspection and fill it out while on site (chances are violations may be overlooked if the checklist is completed back at the office)

■ Inspection Checklist

- The inspection checklist should include:
 - Time (in/out) and date inspection took place
 - Facility name and address, phone number, operator name
 - Facility number
 - Is the operating permit current?
 - Purpose of inspection (routine, re-inspection, complaint)
 - Type of tanks, product stored, and size
 - Type of piping and construction

■ Inspection Checklist

- Type of monitoring equipment
- Is the annual preventative maintenance current?
- List of violations or areas where the owner is out of compliance (this list should be tank specific)
- Description of specific actions the owner must take to comply with the regulations
- Deadline for compliance
- Consequences of non-compliance
- Inspector's signature

■ Conducting The Inspection

■ FINANCIAL RESPONSIBILITY

- All petroleum UST owners or operators shall maintain evidence of financial responsibility (FR) for taking corrective action and for compensating third parties for bodily injury and property damage caused by a release from an UST system
 - Local government (As of February 18, 1994)
 - Federally recognized Indian tribes on Indian lands (As of December 31, 1998)
 - State and Federal facilities are exempt from FR

Conducting The Inspection

- FR maintained by the owner or operator
- Common methods of FR include:
 - Certification of FR
 - Certificate of Insurance
- Current FR documentation should be submitted to the local agency upon certificate expiration, renewal term expiration, etc. or as requested by the local agency

HSC Chapter 6.75

HSC Chapter 6.7, Section 25292.2

CCR, Title 23, Section 2711(a)(11)

Petroleum UST Financial Responsibility Guide

■ Third Party Evaluation

- Each quantitative release detection method, except MTG and MIR, shall be certified to comply with specific performance standards set forth in CCR, Title 23, Section 2643(f)
- Third-party certification is required for monitoring equipment installed after May 5, 1994
- Verify that third-party evaluations (written performance claims pertaining to release detection systems) for all monitoring equipment (i.e. interstitial sensors, ATGs, and line leak detectors) are on site, or off site if approved by the local agency, for 5 years

Third Party Evaluation

- Verify that each evaluation corresponds with equipment on site
- Verify the limitations of leak detection equipment, determine if leak detection is installed and operated in accordance with the third-party evaluation
- For easy reference all equipment, certified and reviewed for compliance with EPA's requirements, is listed in LG 113.
- LG 113 available on line at www.swrcb.ca.gov/ust

CCR, Title 23, Section 2712(b) and 2643(f)

■ Conducting The Inspection

■ AUTOMATIC TANK GAUGING

- Method of single-walled tank leak detection
- Monthly in-tank test to detect leaks of 0.2 gph or greater while the tank is not in service

Conducting The Inspection

■ AUTOMATIC TANK GAUGING (Cont.)

■ Leak detect mode:

- Level and temperature readings are taken automatically every 1 to 2 seconds, and averaged every 30 to 60 seconds
- Level and temperature readings sent to microprocessor which converts readings to temperature-compensated volume measurements
- Microprocessor analyses the data and determines a rate that indicates how fast the product level is changing in the tank

■ Conducting The Inspection

- AUTOMATIC TANK GAUGING (Cont.)
 - Rate expressed in gallons per hour compared to a programmed value (threshold)
 - If the absolute value of the temperature compensated volume change exceeds the threshold, a leak is suspected (the test result is a “fail”); otherwise, it is assumed that the tank is tight (the test result is “pass”)

■ Conducting The Inspection

- AUTOMATIC TANK GAUGING (Cont.)
 - ATG's have two modes: inventory mode and leak test mode
 - ATG consoles are usually equipped with external sensors and line leak detectors
 - Thoroughly investigate the in-tank test reports since last inspection
 - Review monitoring records, make sure there is a 0.2 gph leak test showing a “pass” for each tank every month of the year

■ Conducting The Inspection

■ AUTOMATIC TANK GAUGING (Cont.)

- Verify that the printout shows date, time, tank ID, product depth, water depth, product volume, product temperature, duration of test, and test results. Additionally, for systems installed after 1/1/95 the calculated leak rate and leak threshold are required.
- Determine if the operator waited the required amount of time after a fuel delivery to begin the in-tank test and the required amount of product was in the tank

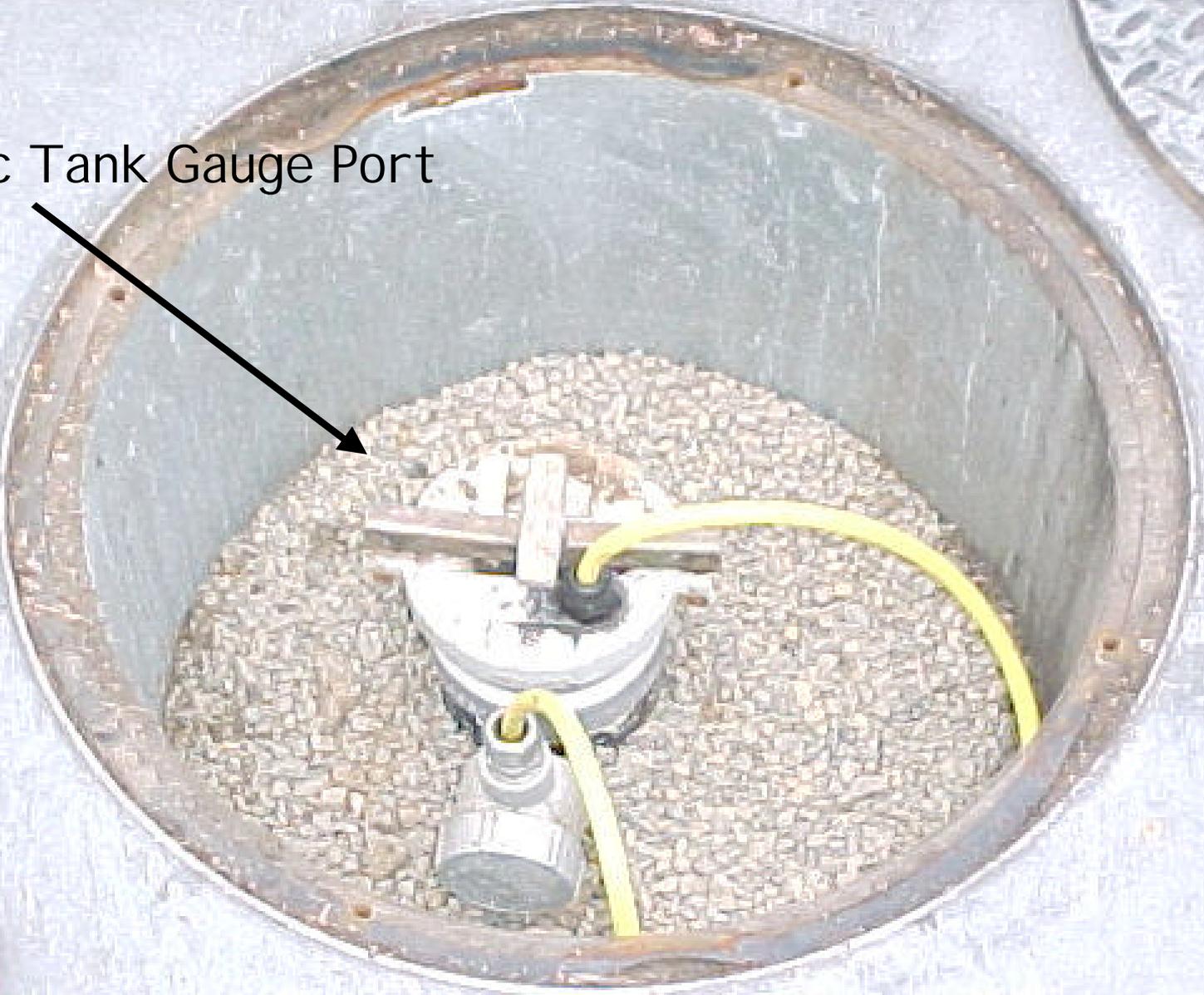
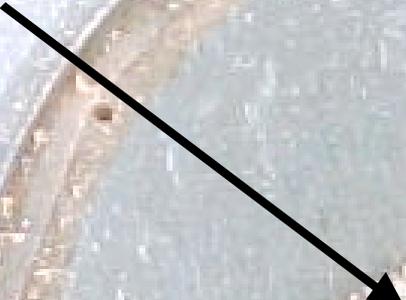
■ Conducting The Inspection

- AUTOMATIC TANK GAUGING (Cont.)
 - For “FAIL” in-tank tests investigate the cause of the failed test (e.g. fuel dispensing, improper wait time after delivery, delivery during in-tank test, increase in water)
 - Check for frequent, unexplained high water alarms (in areas of high groundwater this may indicate groundwater intrusion into the tank, which could mean that the tank is not tight)

■ Conducting The Inspection

- AUTOMATIC TANK GAUGING (Cont.)
 - Verify that the system has been checked at least annually, by a manufacturer approved technician, to verify proper system operation

Automatic Tank Gauge Port



■ Conducting The Inspection

■ CONTINUOUS IN-TANK LEAK DETECTION (CITLDS)

■ What does it do?

- Collects product level and temperature data continuously
- Discards data from unstable times and low product levels
- Once adequate data has been collected, a leak test is performed/analyzed
- Leak rate 0.2

■ Conducting The Inspection

- CONTINUOUS IN-TANK LEAK DETECTION (Cont.)
 - System application is limited by the estimated maximum throughput for the tank. (It is important to compare the estimated product throughput for each tank with the maximum monthly throughput for the system at the time of installation and during inspections.)
 - CITLD can be programmed to generate leak test reports daily, weekly, or monthly

Conducting The Inspection

- CONTINUOUS IN-TANK LEAK DETECTION (Cont.)
 - Review CITLD reports to verify one conclusive test performed monthly
 - Review the leak test history for “fail test” results
 - Verify the ATG probe used for CITLD is the same probe model listed in LG 113
 - Verify the CITLDs is programmed properly (Example: Veeder-Root 95% and 99% mode)

Conducting The Inspection

- STATISTICAL INVENTORY RECONCILIATION
 - Method of single-walled tank leak detection
 - SIR analyzes inventory, delivery, and dispensing data collected over a period of time to determine if the tank system is leaking
 - Inventory: Each operating day, the product level is measured using a gauge stick or tank level monitor
 - Delivery: All deliveries are measured and recorded
 - Dispensing: Daily meter readings are recorded to measure dispensing withdrawals
 - After data have been collected for a one month period, the owner/operator provides the data to the SIR vendor

■ Conducting The Inspection

■ STATISTICAL INVENTORY RECONCILIATION (Cont.)

- The SIR vendor uses computer software to conduct a statistical analysis of the data to determine whether or not the UST system may be leaking
- The SIR vendor provides the owner/operator with a report of the statistical analysis
- To qualify as an acceptable method of monthly monitoring, a SIR method must be able to detect a leak rate of 0.2 gallons per hour

■ Conducting The Inspection

■ STATISTICAL INVENTORY RECONCILIATION (Cont.)

- Annual meter calibration and bi-annual tank testing
- Review all monthly SIR reports, look for "inconclusive" or "fail"
- Check records to verify if monthly report was inconclusive or indicates a possible release, the owner notified the local agency and submitted a copy of the report within 10 days

Conducting The Inspection

■ STATISTICAL INVENTORY RECONCILIATION (Cont.)

- Check records to determine if the owner also made an effort to find errors to determine if the data was collected improperly and all accessible portions of the tank system were inspected
- If no errors were found then the dispenser meter should have been calibrated
- If a second report denotes an “inconclusive” or “fail” then the owner shall conduct a piping tightness test, and if necessary a tank tightness test, within 15 calendar days of receiving the report

■ Conducting The Inspection

■ STATISTICAL INVENTORY RECONCILIATION (Cont.)

- As per CCR Section 2646.1(f), if SIR data does not indicate a tight system the local agency has the authority to require additional testing such as piping and/or tank tightness tests, or even closure of the tank system
- SIR summary reports shall be submitted to the local agency annually
- Sticking practices and dispenser calibration are the number one errors

■ Conducting The Inspection

- STATISTICAL INVENTORY RECONCILIATION (Cont.)
 - DIPSTICKING.....observe the operator sticking the tank:
 - The stick should be long enough to reach the bottom
 - The stick should not be warped or broken
 - The stick should be marked legibly in 1/8-inch increments
 - The tip of the stick should not be worn or missing (TIP: take a 12" ruler or measuring tape to verify the measurement from tip to the 12" marker)

■ Conducting The Inspection

- **STATISTICAL INVENTORY RECONCILIATION (Cont.)**
 - Insert the stick into the tank and lightly touch the bottom
 - Withdraw the stick quickly to avoid creeping of the product
 - Record product level to the nearest 1/8-inch
 - REPEAT (TIP: if the variance is greater than 1/4-inch the tank should be gauged a third time)

Conducting The Inspection

■ STATISTICAL INVENTORY RECONCILIATION (Cont.)

- Wait 30 seconds after removing fill cap, before sticking the tank, to let fuel in the drop tube subside
- Measure and record water levels daily (TIP: removing water from the tank needs to be recorded on the inventory forms the day it is withdrawn)
- Do not use delivery receipts as the actual amount of delivery, volume should be calculated by using before and after delivery stick readings

Conducting The Inspection

■ CATHODIC PROTECTION

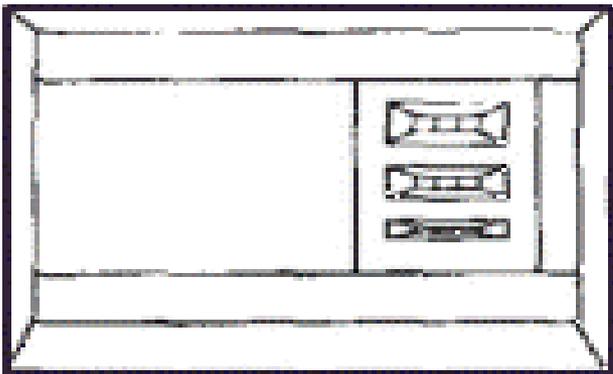
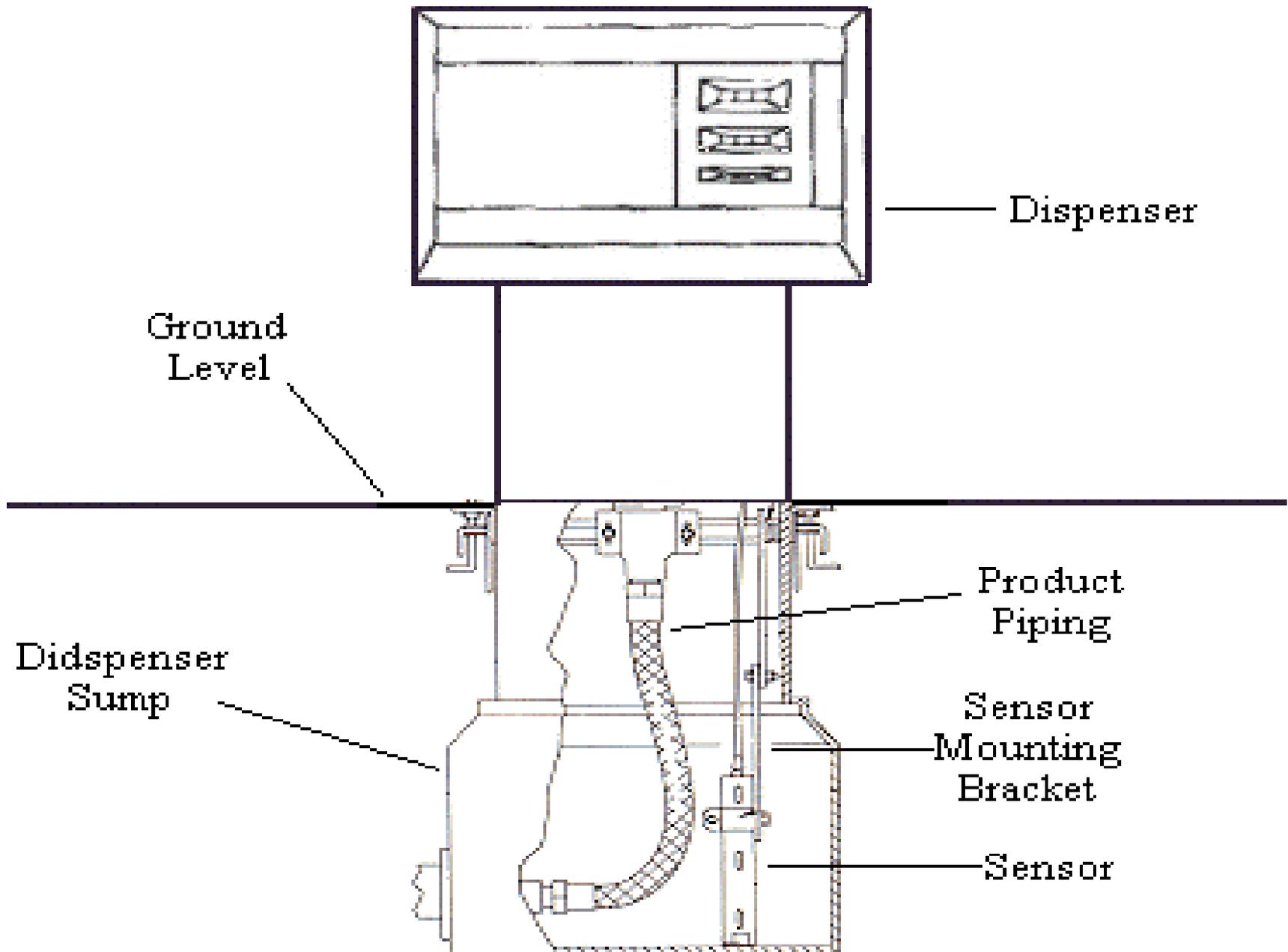
- Check impressed current rectifier every 60 days
- Accurate power settings (voltage/amperage)
- Impressed current or sacrificial anodes inspected by cathodic protection tester every three years

Section 2635(a)(2)(A)

LG 145

■ Under-Dispenser Containment





Dispenser

Ground Level

Dispenser Sump

Product Piping

Sensor Mounting Bracket

Sensor

Under-Dispenser Containment Timeline for Installation

- At the time of installation for systems installed after January 1, 2000
- By July 1, 2001 for systems installed after July 1, 1987 that are located within 1,000 feet of a public drinking water well, as identified pursuant to the state GIS mapping database
- By December 31, 2003 for all other systems

Conducting The Inspection

■ CONTINUOUS INTERSTITIAL MONITORING

- Method of double-walled tank and pipe leak detection
- Monitoring system used to continuously check the area between the primary containment and the secondary containment for leaks, and alerts the operator when a leak is detected

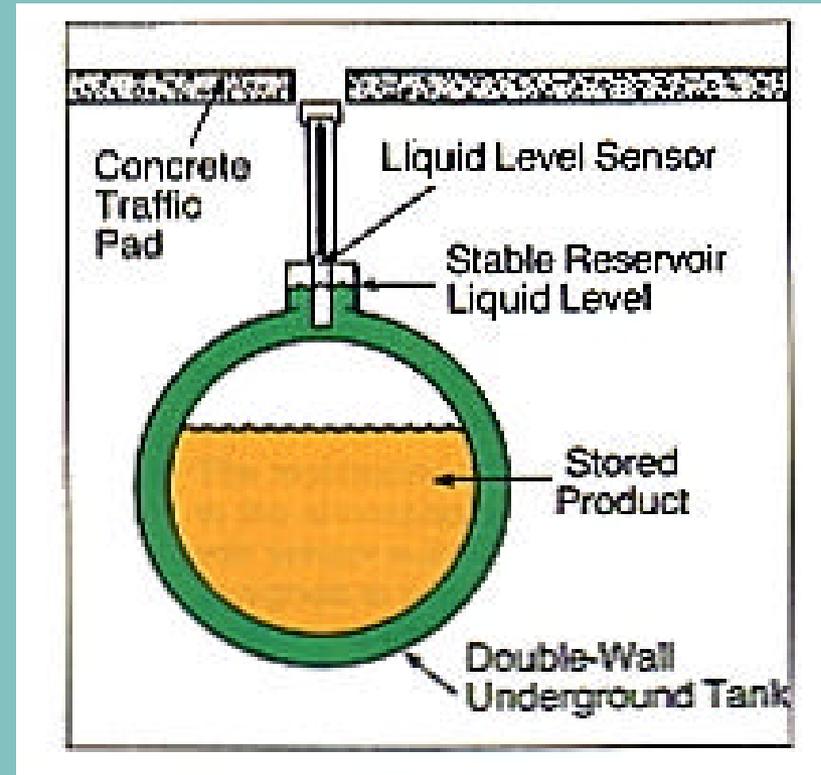
■ Conducting The Inspection

■ CONTINUOUS INTERSTITIAL MONITORING

- Some monitoring systems indicate the physical presence of leaked product, either liquid or gaseous
- Other monitors check for a change in condition that indicates a hole in the tank such as a loss in vacuum or a change in the level of a monitoring liquid between the walls of a double wall tank

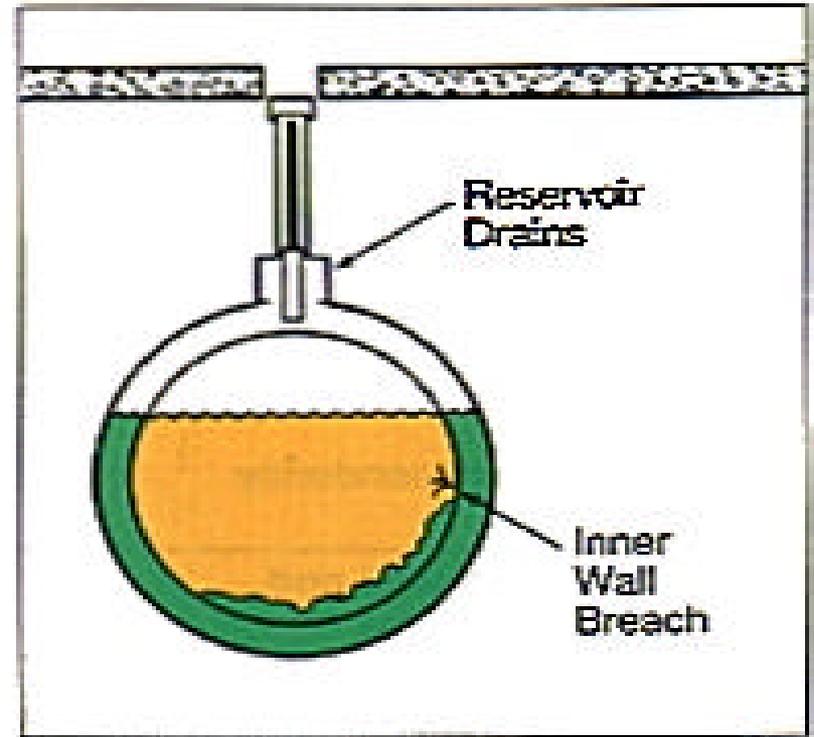
Hydrostatic Interstitial Monitoring

- Normal Conditions
 - The reservoir liquid level will be stable if both the inner and outer tank are tight
 - The reservoir sensor will activate an alarm if the reservoir drains or overfills



Hydrostatic Interstitial Monitoring

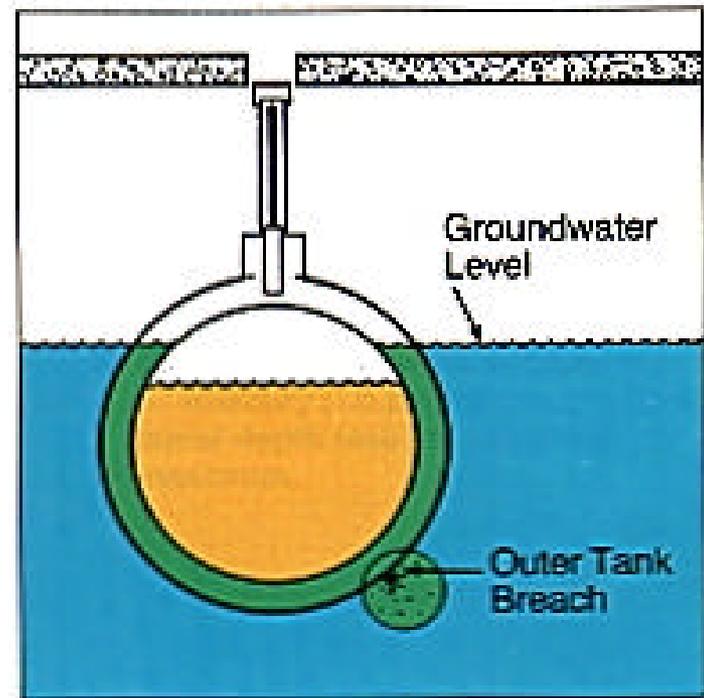
- Inner Wall Breach
 - Monitor fluid drains into primary tank causing the reservoir to drain
 - Reservoir sensor alarms, alerting the owner/operator of tank failure



Hydrostatic Interstitial Monitoring

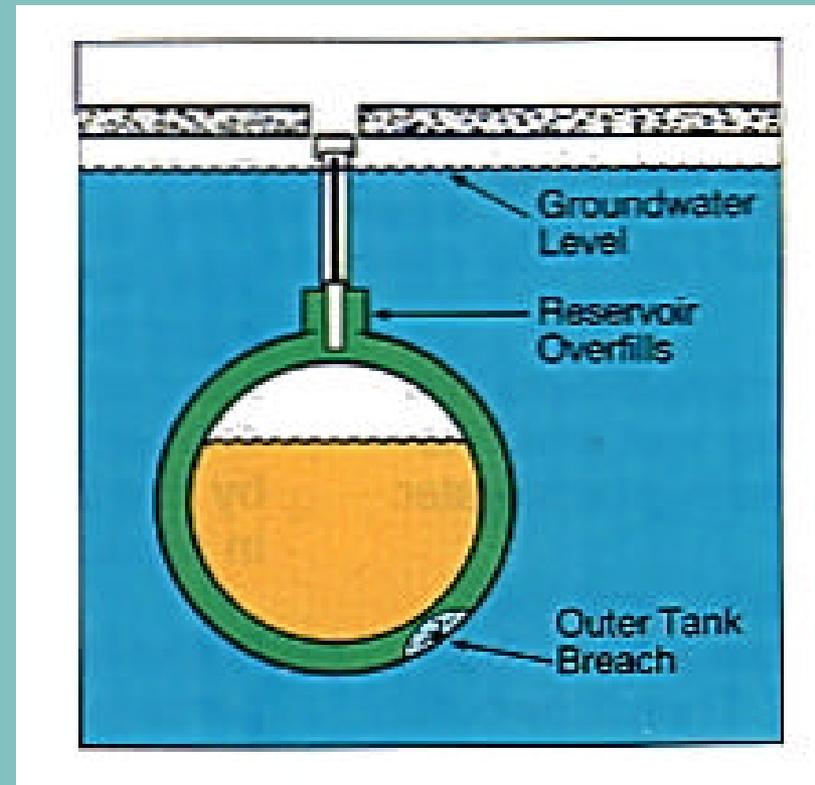
Outer Wall Breach

- If groundwater is below the tank top, monitor fluid drains into surrounding soil
- Reservoir sensor alarms, alerting the owner/operator of tank failure



Hydrostatic Interstitial Monitoring

- Outer Wall Breach
 - If groundwater is over the tank top, the reservoir will overflow with groundwater
 - Reservoir sensor alarms, alerting the owner/operator of tank failure



Continuous Interstitial Monitoring

- SENSOR APPLICATION
 - To detect presence of fuel and/or water
 - Typically located in:
 - Tank top sumps (turbine, piping, fill/vapor)
 - Under-dispenser containment
 - Tank annular space (wet and dry)
 - Groundwater monitoring wells

Continuous Interstitial Monitoring

SENSOR CATEGORIES

■ Non-Discriminating

- Activate same alarm signal for fuel or water
- Use a single detection element
- Most common (85-90%)

■ Discriminating

- Activate a different alarm signal for each
- May use multiple detection elements
- Less common (10-15%)

Continuous Interstitial Monitoring

- NON-DISCRIMINATING SENSORS
 - Float-Switch Type - most common (mechanical & electro-mechanical)
 - Solid-State Electronic Type (optical, ultrasonic, electrical conductivity, thermal conductivity)

“Both types respond & recover fast”

Continuous Interstitial Monitoring

■ DISCRIMINATING SENSORS

■ Non-Point Cable Type

- Multiple detection elements
- Slow response and recovery times
- Different alarm signal for fuel and liquid
- Able to detect fuel floating on water
- Some also have a high liquid-level alarm

Continuous Interstitial Monitoring

- POINT LIQUID SENSOR TYPE
 - Single detection element
 - Quick response time
 - Different alarm signal for fuel and liquid
 - Only able to detect presence of fuel or water at the detection window
 - Unable to detect fuel floating on water

Conducting The Inspection

■ INTERSTITIAL MONITORING

- Check the monitoring console to see if power light is on and that the monitoring system has both audible and visual properties
- Visually inspect all piping sumps and annular spaces
- Sumps should be free of debris and liquid

■ Conducting The Inspection

■ INTERSTITIAL MONITORING (Cont.)

- In accordance with the manufacturers installation instructions, verify that the sensor is firmly secured in an upright position and located near the bottom of the sump
- Sensors should be checked for functionality (by trained personnel)
- Inspect annual maintenance records

Conducting The Inspection

■ INTERSTITIAL MONITORING (Cont.)

Potential Problems:

- Improper wiring of sensor (shorted, corroded, disconnected)
- Non-functional pump shut-down (improper programming, stuck relay)
- Improper sensor use
- Tampering (raised from low point, disconnected)
- Alarms ignored

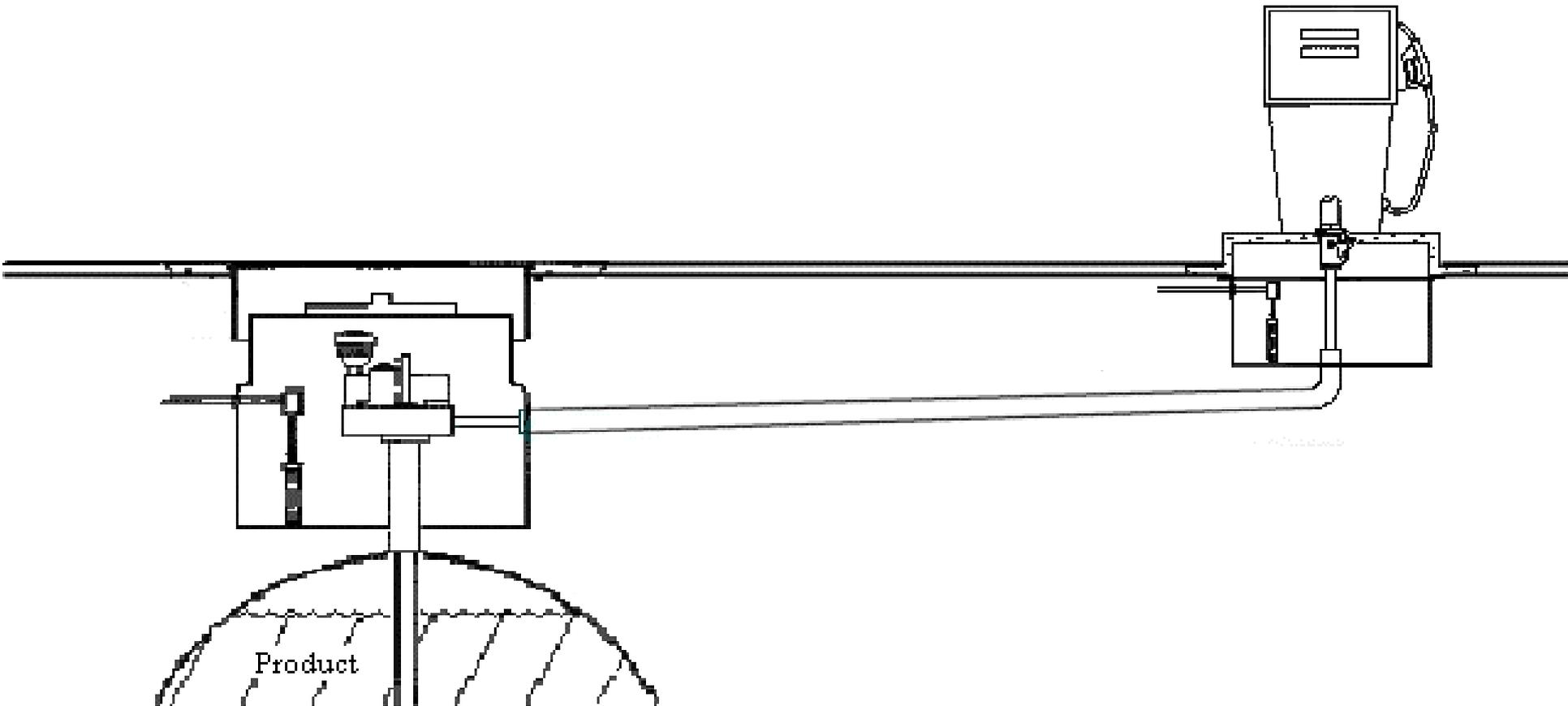
Discriminating Sensors

- Verify positive shutdown for “high water” alarms
- An excessive amount of water in the containment sump can submerge the sensor. In the event of a release, petroleum will float on water, and a sensor would not be able to detect the petroleum. If the system is programmed to shutdown when a “high water” condition is detected it may alert the operator that the system would not be able to detect a petroleum release and therefore leak detection is no longer effective.
- SWRCB recommendations in LG 113-16



Pressurized Piping and Monitoring Requirements

UDC & DW Pressurized Piping



Method 1

- Continuous monitoring for the UDC that:
 - shuts down the pump, or
 - stops the flow of product at the dispenser when a leak is detected in the UDC

AND

- Continuous monitoring for the pressurized piping located outside the UDC that is fail safe and shuts down the pump when a leak is detected.

AND

- A line leak detector that detects a 3.0 gph release from the primary containment (mechanical or electronic)

Method 2

- Continuous monitoring for both the pressurized piping and UDC that:
 - Activates an audible and visual alarm, or
 - stops the flow of product at the dispenser when a leak is detected

AND

- A line leak detector that detects a 3.0 gph release from the primary containment (mechanical or electronic)

AND

- An annual piping test that detects a release of 0.1 gph

Summary¹ of Training Requirements for Underground Storage Tank (UST) Professionals

(California Code of Regulations, Title 23, Chapter 16)

UST OWNER	CITATION
<p><u>New Requirements:</u> Submit a signed statement to the local agency by January 1, 2005, which includes²:</p> <ul style="list-style-type: none"> ▪ Owner understands and is in compliance with all applicable UST requirements. ▪ Owner notifies the local agency of the Designated UST Operator for each facility owned. 	§2715(a)
DESIGNATED UST OPERATOR	
<p><u>New Requirements:</u></p> <ul style="list-style-type: none"> ▪ Possess a current “California UST System Operator” certification issued by the International Code Council (ICC) by January 1, 2005. Certification must be renewed every 24 months. ▪ Provide annual on-the-job training for facility employee(s). Initial training required by <u>July 1, 2005</u>. Facility employees hired on or after July 1, 2005 must complete initial training within 30 days of the date of hire. ▪ Perform monthly visual inspections and record results on an inspection report, which must be provided to the owner/operator. 	<p>§2715(b)</p> <p>§2715(f)</p> <p>§2715(c)&(d)</p>
UST SERVICE TECHNICIAN	
<p>Secondary Containment Testing <u>Existing Requirement:</u></p> <ul style="list-style-type: none"> ▪ Possess a current Tank Testers License or appropriate Contractors State License Board (CSLB) license³. <p><u>New Requirements:</u></p> <ul style="list-style-type: none"> ▪ Obtain training and certification through the developer of the testing equipment or test method being used, or through the manufacturer of the secondary containment component being tested. Recertification is required at the time interval recommended by the manufacturer, or every 36 months, whichever is shorter. ▪ Possess or work under the direct and personal supervision of an individual physically present at the work site who possesses a current “California UST Service Technician” certification issued by the ICC by July 1, 2005⁴. Certification must be renewed every 24 months. <p>Annual Monitoring Equipment Certification <u>Existing Requirements:</u></p> <ul style="list-style-type: none"> ▪ Possess a current Tank Testers License or appropriate CSLB license. ▪ Obtain training and certification from the monitoring equipment manufacturer and be recertified at the time interval recommended by the manufacturer, or every 36 months, whichever is shorter. <p><u>New Requirement:</u></p> <ul style="list-style-type: none"> ▪ Possess or work under the direct and personal supervision of an individual physically present at the work site who possesses a current “California UST Service Technician” certification issued by the ICC by <u>July 1, 2005</u>⁴. Certification must be renewed every 24 months. 	<p>§2637(d)</p> <p>§2715(i)(2)&(3)</p> <p>§2715(i)(4)</p> <p>§2638(b)</p> <p>§2715(i)(2)&(3)</p> <p>§2715(i)(4)</p>

¹ This is a **summary** table and does not present comprehensive information on the training requirements. Please refer to Title 23, California Code of Regulations for detailed information on the training requirements for UST professionals. A copy of the UST regulations is available online at: www.swrcb.ca.gov/ust.

² The owner must inform the local agency of any change of designated UST operator(s) no later than 30 days after the change.

³ A Tank Tester License must be held by the individual performing the work. A CSLB license may be held by either the employer or the individual performing the work.

⁴ If the California UST Service Technician exam is not available by July 1, 2004, this requirement will become effective 12 months after the date the exam is available.

Conducting The Inspection

- SINGLE-WALLED PRESSURIZED LINE LEAK DETECTION
 - Shall be equipped with an electronic line leak detector that is capable of:
 - detecting a release equivalent to 3.0 gph
 - monthly monitoring of 0.2 gph or annual monitoring of 0.1 gph
 - shutting off the pump when a release occurs, fails and/or is disconnected.
 - connected to an audible and visual alarm

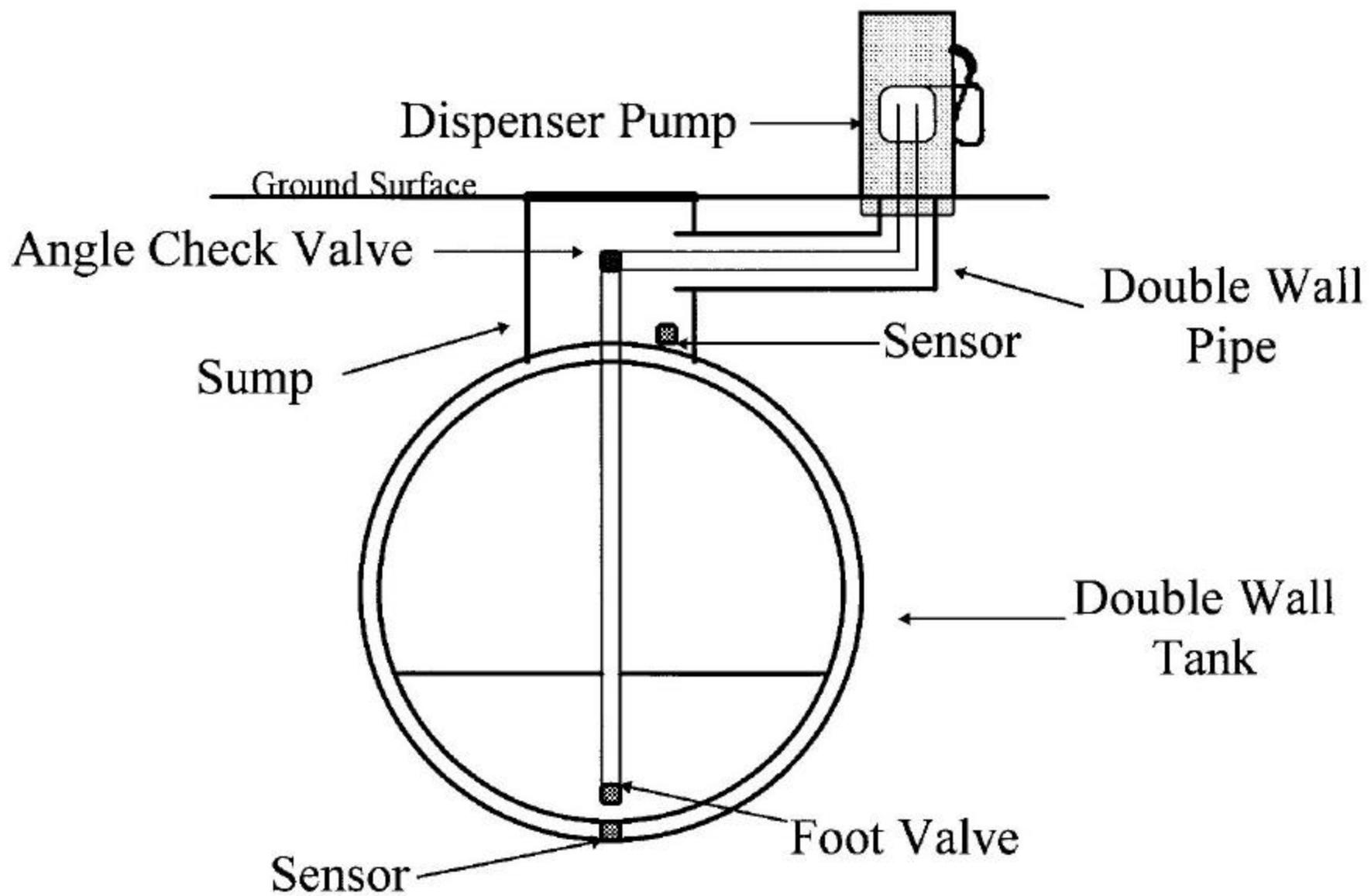
■ Conducting The Inspection

- SINGLE-WALLED PRESSURIZED LINE LEAK DETECTION (Cont.)
 - Leak detectors should be located at the turbine pump head
 - Check the submersible pump head for weeping or leakage at port (while the pump is on)

Conducting The Inspection

- SINGLE-WALLED PRESSURIZED LINE LEAK DETECTION (Cont.)
 - Check records to see that the line leak detection has been inspected by a manufacturer approved technician for proper operation on an annual basis
 - Verify if the leak detector was tested in-line, without removing it from the turbine head
 - Check annual maintenance records to verify that all criteria of positive shutdown/failsafe were tested

Conventional Suction System



Conducting The Inspection

■ SINGLE-WALLED CONVENTIONAL SUCTION

- With conventional suction there is a foot valve located in the tank or an angle check valve located at an elbow in the piping outside of the tank
- For single-wall piping, line tightness testing shall be conducted every three years (if piping cannot be isolated from the tank for testing purposes, the piping shall be tested using an overfilled volumetric tank integrity test or other approved test meeting requirements of Section 2643(f) if approved by the local agency)

Conducting The Inspection

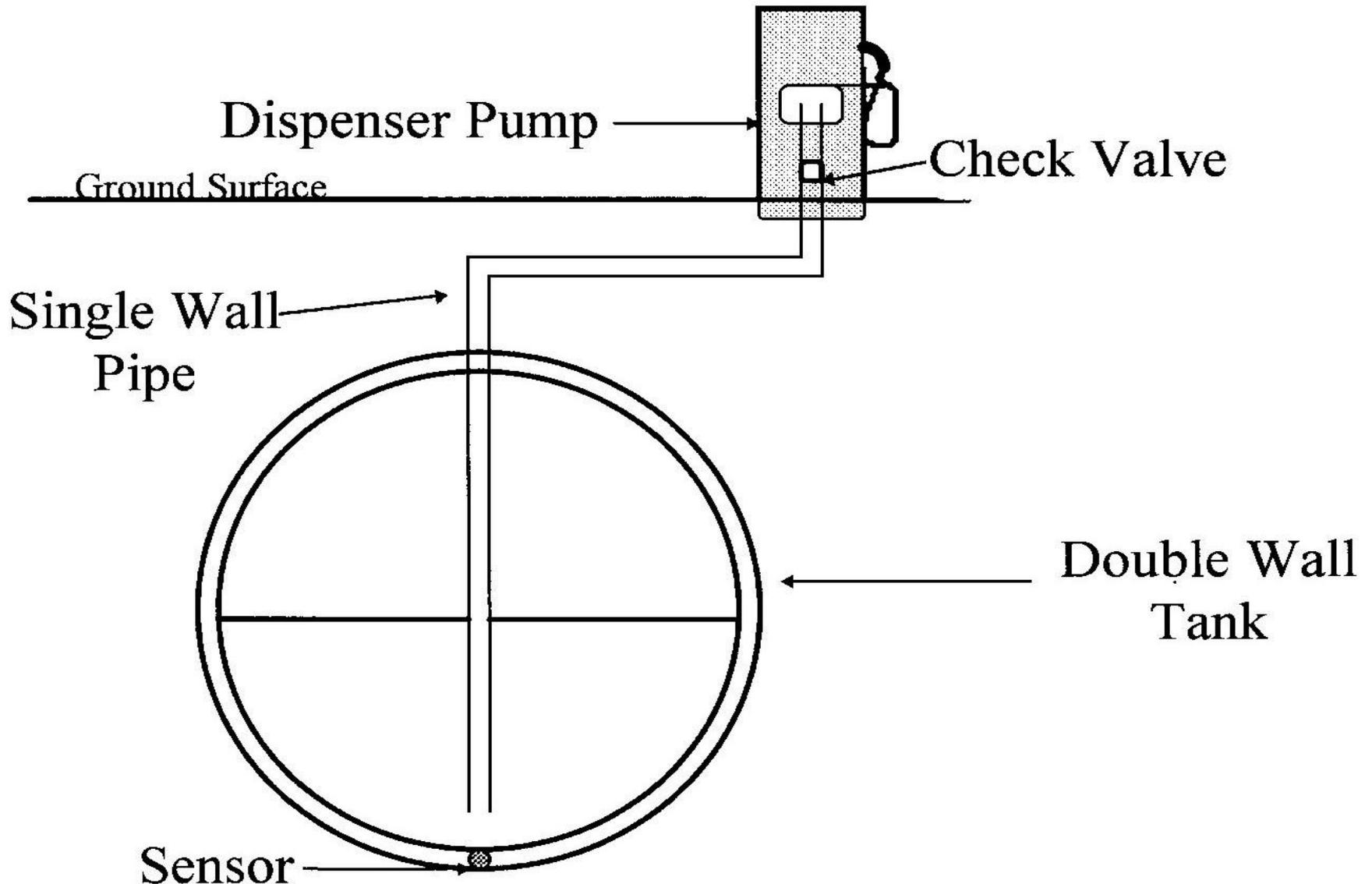
- SINGLE-WALLED CONVENTIONAL SUCTION (Cont.)
 - Daily monitoring shall be performed for single-wall piping (except for emergency generator systems which shall be monitored at least monthly)
 - Suction piping shall be monitored for the presence of air in the pipeline by observing the suction pumping system for the following indicators:
 - The cost/quantity display wheels on the meter suction pump skip or jump during operation;

Conducting The Inspection

■ SINGLE-WALLED CONVENTIONAL SUCTION (Cont.)

- The suction pump is operating, but no motor vehicle fuel is being pumped;
- The suction pump seems to overspeed when first turned on and then slows down as it begins to pump liquid; and
- A rattling sound in the suction pump and erratic flow indicating an air and liquid mixture

Safe Suction System



Conducting The Inspection

- SINGLE-WALLED SAFE OR EUROPEAN SUCTION
 - With this design there are no check valves located in the piping except at the base of the dispenser where a vertical check valve is installed at grade level
 - This design allows the product in the piping to drain back into the tank if there is a leak

Conducting The Inspection

- SINGLE-WALLED SAFE OR EUROPEAN SUCTION (Cont.)
 - To verify safe suction, slowly loosen the access plug just below the shear valve and listen for sucking sound
 - The system is a safe suction system if a sucking sound is heard, this indicates product is draining back into the tank and no other valve is present in the product piping
 - If product seeps from the access plug then it is a conventional suction system

■ Conducting The Inspection

■ SINGLE-WALLED SAFE OR EUROPEAN SUCTION (Cont.)

- Inspect the piping system to verify that the piping operates at less than atmospheric pressure, has only one vertical check valve at the base of the dispenser (grade level), and piping is sloped to allow product to drain back into the tank when the suction is released



■ Conducting The Inspection

- DOUBLE WALLED CONVENTIONAL SUCTION
 - Shall be equipped with a continuous monitoring system which meets the requirements of Section 2643(f) and which is connected to an audible and visual alarm system

Secondary Containment Testing



How Should Secondary Containment be tested?

- In accordance with manufacturer's guidelines or standards
- If there are no manufacturer's guidelines or standards, secondary containment systems shall be tested using an applicable method specified in an industry code or engineering standard
- If there are no applicable manufacturer's guidelines, industry codes, or engineering standards, a test method approved by a CA registered professional engineer shall be used

Test Methods

- Common secondary containment test methods include pressure, vacuum, or hydrostatic testing
- In some cases, a system that was tested at installation using a pressure test can be tested after installation using a vacuum or hydrostatic test if the test method can demonstrate that the containment works as well as it did upon installation

Test Methods (continued)

- Similarly, a system that was tested at installation using an overnight hydrostatic test with a crude level measurement may be tested using a shorter hydrostatic test with a more accurate test measurement device

Parts of the UST System That Should be Tested

- The outer wall/secondary containment of the UST
- The outer wall/secondary containment of the product piping
- Sumps that provide secondary containment
- Under-dispenser containment

Testing Fill/Vapor Recovery Tank-Top Sumps

- In cases where a sump is required because of the UST system overflow design as per Title 23 CCR, the sump must be tested
- If a sump was installed voluntarily as part of the UST system design, consult with the local agency to see if they require testing of these types of sumps
- In the case where sumps are not required to be tested, the SWRCB recommends periodic testing of these types of sumps

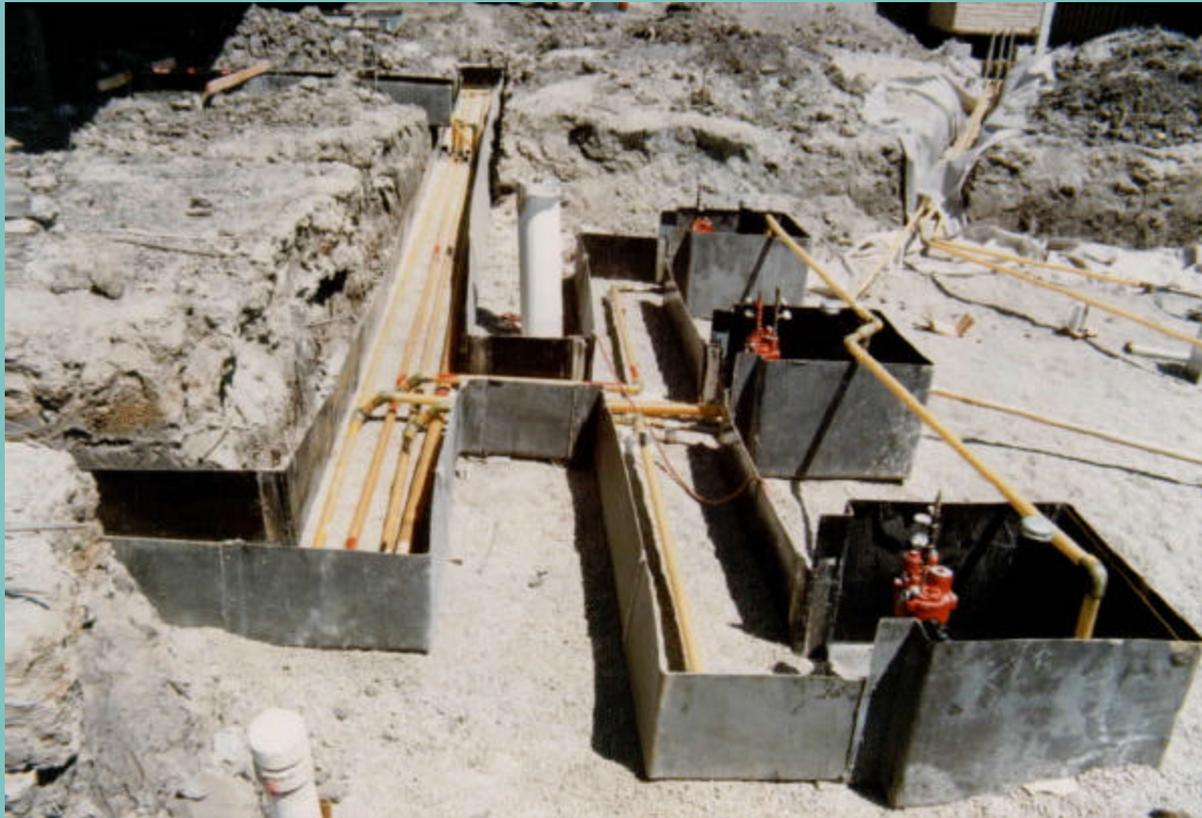
Exempt Systems

- Secondary containment systems where the continuous monitoring automatically monitors both the primary and secondary containment (i.e., hydrostatic, vacuum)

Testing Frequency

- Secondary containment systems installed after January 1, 2001 shall be tested upon installation, 6 months after installation, and every 36 months thereafter
- Secondary containment installed prior to January 1, 2001 shall be tested by January 1, 2003 and every 36 months thereafter

Secondary Containment Systems That Can Not Be Tested



Secondary Containment Systems That Can Not Be Tested (cont.)

- If a secondary containment system can not be tested by virtue of its design, the owner/operator has two options:

Option #1

- Replace the secondary containment system by December 31, 2002 with a system that can be tested

Secondary Containment Systems That Can Not Be Tested (cont.)

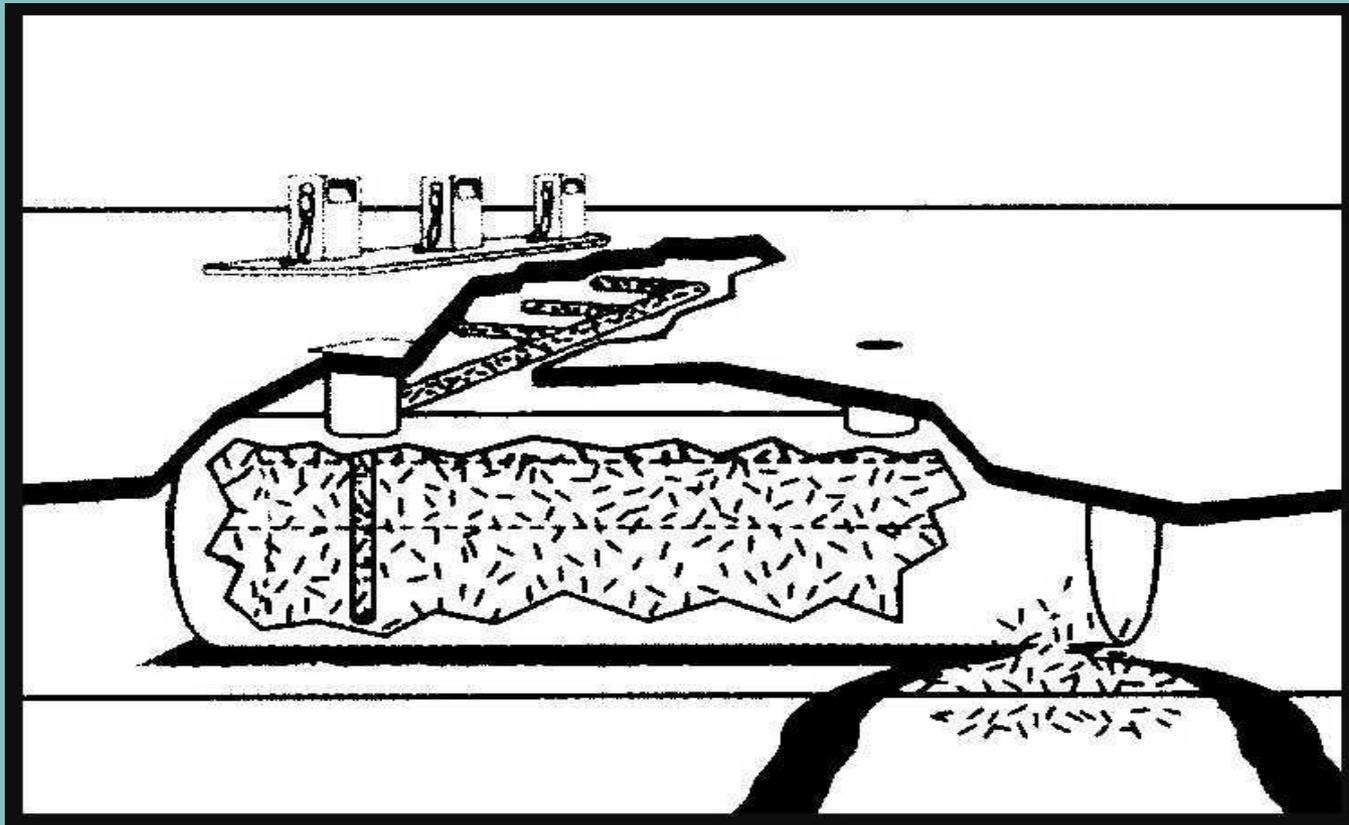
Option #2

- Submit a proposal and program of enhanced leak detection to the local agency by July 1, 2002;
- Complete the program of enhanced leak detection by December 31, 2002; and
- Replace the secondary containment system by July 1, 2005 with a system that can be tested

Notification and Reporting Requirements

- The owner/operator shall notify the local agency at least 48 hours prior to conducting the test, unless this notification requirement is waived by the local agency
- The owner/operator shall submit a copy of the test report to the local agency within 30 days of the completion of the test

Enhanced Leak Detection



Which UST Systems Are Subject To ELD?

- UST systems (1) with a single-walled component and (2) located within 1,000 ft of a public drinking water well
- UST system is not subject to ELD if the only SW components are SW vent & tank riser piping, vapor recovery piping, & safe suction piping that meet secondary containment exemption per § 2636 (a)(1), (2), or (3)
- ELD must be performed every 36 months

Which UST Systems Are Subject To ELD?

- Double-walled UST systems that are within 1,000 feet of a public drinking water well
- ELD test must be performed once by January 1, 2005

Definition Of A “Public Drinking Water Well”

- Provides drinking water to a public water system;
- Regulated by the California Department of Health Services (DHS); and
- Is subject to notification requirements for wells found to have contaminants in excess of maximum contaminant levels or actions levels established by DHS

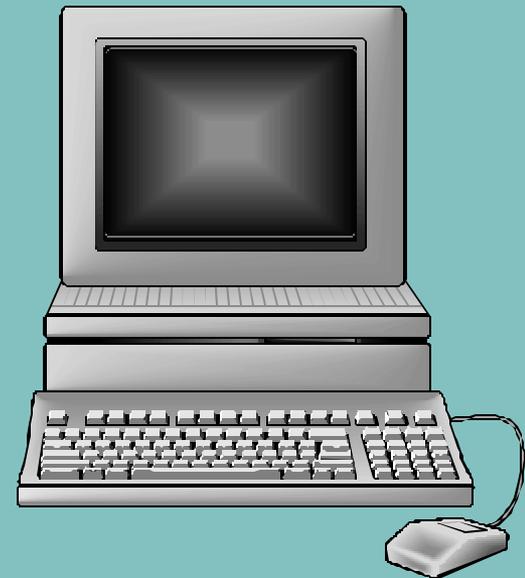
Definition Of A “Public Water System”



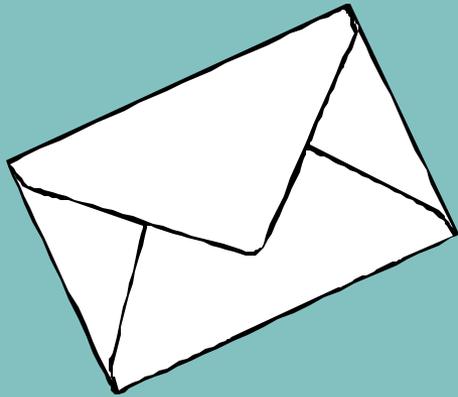
- A system that provides water for human consumption through pipes or other constructed conveyances that has 15 or more service connections or regularly serves at least 25 individuals daily at least 60 days/year (H & S code, § 116275)

How Are The Subject Facilities Determined?

- Geographic information system (GIS) mapping database (GeoTracker)
- Contains well data and UST information
- Information in database provided to SWRCB by local agencies



Notification Requirement



- SB 989 and AB 2481 mandate SWRCB to notify owners/operators that are subject to ELD

ELD Appeal Process

- Owners/operators who believe their facility is not subject to ELD may appeal to the SWRCB
- Owners/operators may verify the location of their UST system using Geotracker
- <http://geotracker.swrcb.ca.gov>

ELD Appeal Process

- Submit appeals to the Division of DWQ UST Program Manager and the local agency in writing within 60 days of date notification was mailed and include all pertinent information
- UST Program Manager has 90 days from receipt of request to make a decision and notify the corresponding local agency

Implementation Requirements And Schedule

- Owners/operators subject to ELD must have a program of ELD reviewed and approved by the local agency within 6 months following notification
- ELD must be implemented no later than 18 months following receipt of notification from the ELD

What Is A “Program Of ELD”?

- A program of ELD should include:
 - A modification/amendment to the existing monitoring plan;
 - Submittal of standard documentation describing the third-party approved protocol for implementation of ELD; and
 - The proposed test date or a signed access agreement

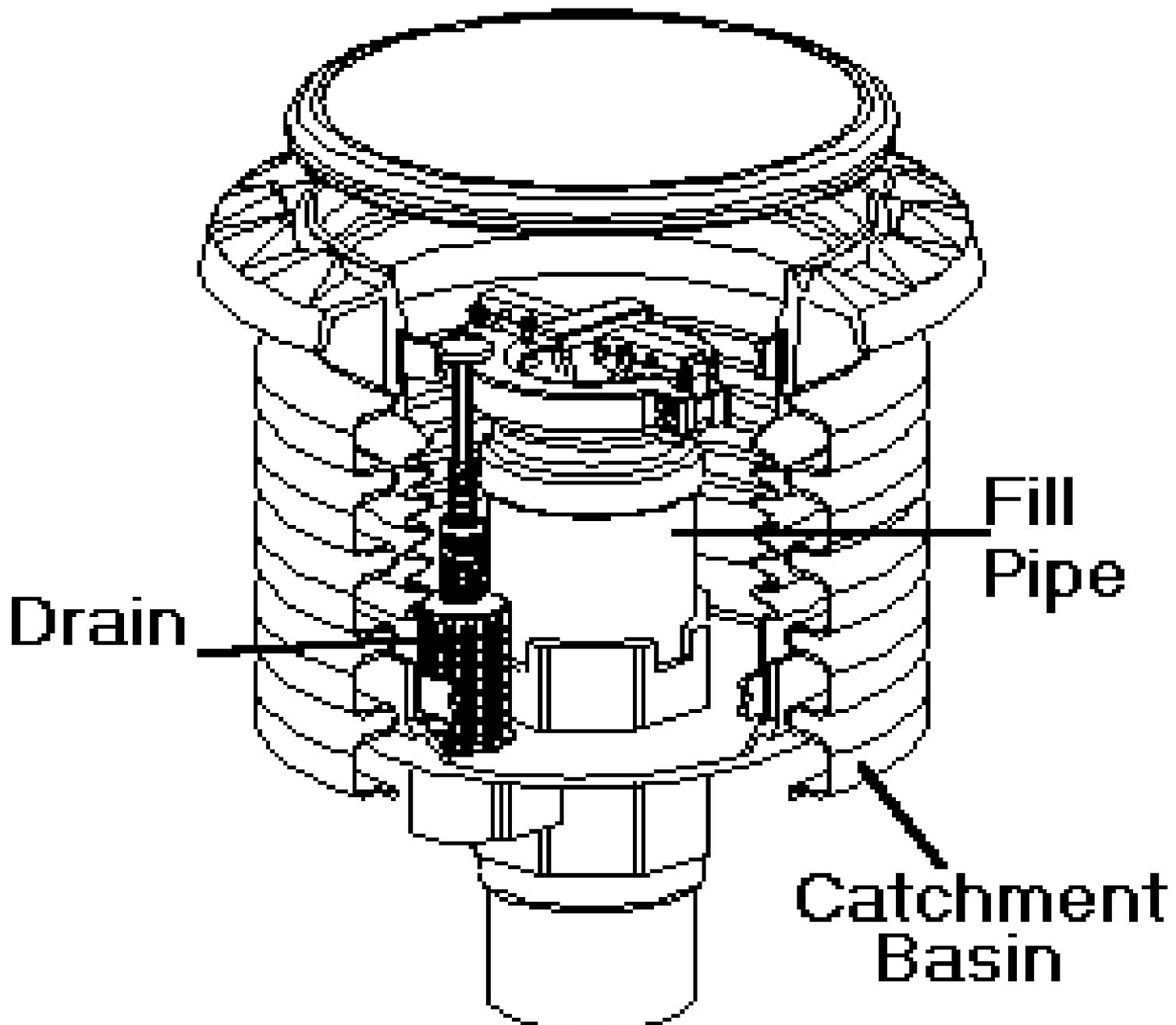
Implementation Requirements And Schedule

- Owners/operators must notify local agency at least 48 hours prior to ELD test
- Owners/operators must submit a copy of the ELD test report to SWRCB and local agency within 60 days of completion of the test

Formal Notification

Packet Includes

- Formal notification letter
- Map from Geotracker showing location of UST facility
- UST facility name, ID and PIN numbers, and water purveyor contact information
- LG Letter 161-2
- RUST flyer
- Request for Reconsideration Form/ Instructions



■ Conducting The Inspection

■ SPILL CONTAINMENT

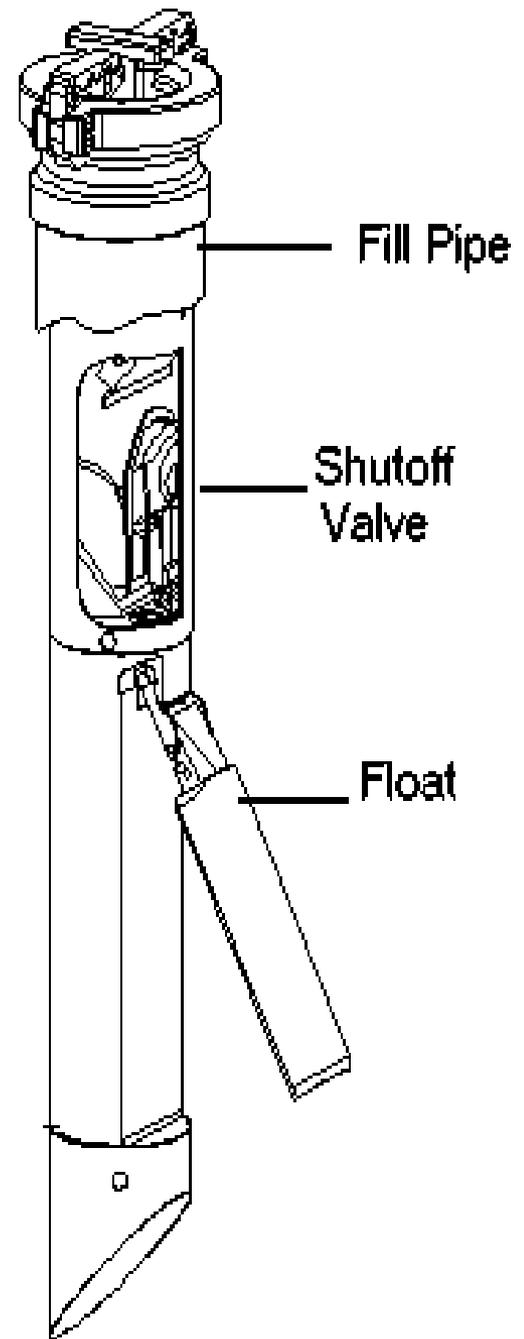
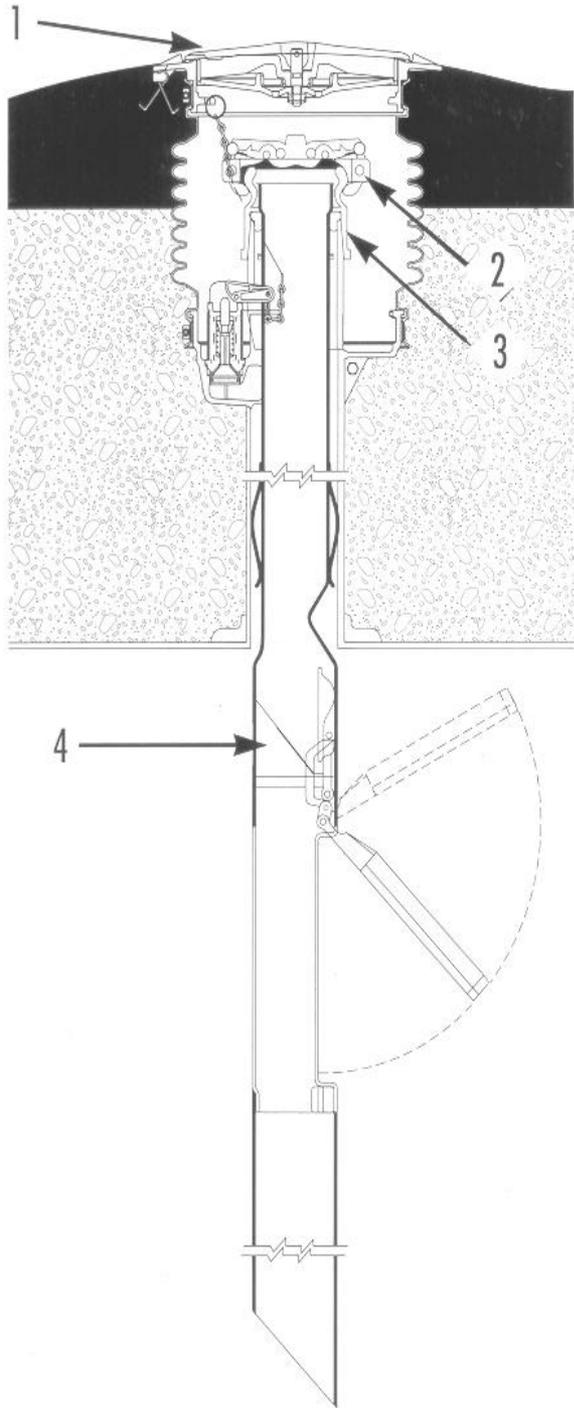
- Five gallon spill container resistant to galvanic corrosion
- Functioning drain valve or manual pump on site
- Is the spill container empty or does it have water, product or debris in it?
- Test annually

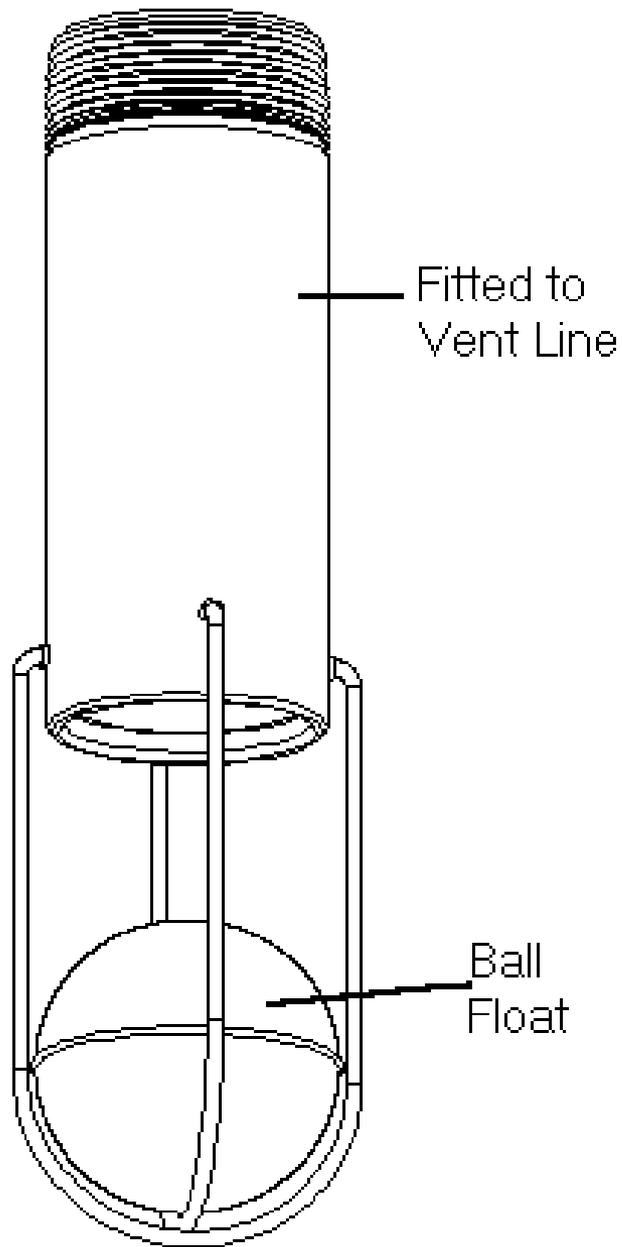
Overfill Prevention

- Types of overfill prevention:

- 1) Audible and Visual Alarm: Typically connected to ATG. They are set to alert the delivery driver by triggering an audible and visual alarm. Be sure that the delivery driver and operator can see and hear the alarm.
- 2) Ball Float Valve or Float Vent Valve. An extractor fitting inside an access port. This method restricts flow to the tank.
- 3) Automatic Shut-Off Device. A device in the fill pipe/drop tube which shuts off flow to the tank.

LG 150-2





Overfill Prevention

- Shall meet one of the following requirements:
 - Alert the transfer operator when the tank is 90% full by restricting flow or triggering audible/visual alarm; OR
 - Restrict delivery of flow to the tank at least 30 minutes before the tank overfills, restriction must occur when the tank is filled to no more than 95% capacity, and activates an audible/visual alarm at least 5 minutes before the tank overfills; OR
 - Provide positive shutoff of flow to the tank when the tank is filled to no more than 95% of capacity; OR
 - Provide positive shutoff of flow to the tank so that none of the fittings located on the top of the tank are exposed to product due to overfilling

Tank Riser Piping

- Tank riser piping is exempt from secondary containment if: (1) it meets the overflow requirements of Title 23, CCR Section 2635(b)(2)(B) or (C) AND, (2) the USTs were installed after July 1, 1987 but before July 1, 2003.
 - i.e., if a UST has a ball float vent valve with an audible overflow alarm that meets the requirements of Section 2635 (b)(2)(B) OR a positive shut-off (flapper valve) that provides positive shut off of flow to the tank that meets the requirements of Section 2635(b)(2)(C) then secondary containment is not required around the fill and vapor recovery tank riser piping

Conducting The Inspection

■ RECORDABLE RELEASE

- Document recordable releases in UST monitoring records
- Recordable release is any unauthorized release from the UST's primary containment that:
 - Can be cleaned up within 8 hours after it is detected (or should have been detected)
 - Does not escape secondary containment
 - Does not increase the hazard of fire or explosion
 - Does not cause any deterioration of the secondary containment

Conducting The Inspection

■ RECORDABLE RELEASE (Cont.)

- Operator's monitoring records should include:
 - Types, quantities and concentrations of hazardous substances released
 - Description of actions taken to control and clean up the release
 - Method and location of disposal of the released hazardous substance (the monitoring records should tell you if a hazardous waste manifest was or will be used)

Conducting The Inspection

- RECORDABLE RELEASE (Cont.)
 - A description of the actions taken to repair the UST and prevent future releases
 - A description of the method used to reactivate the interstitial monitoring system
- If the local agency finds that the containment and monitoring requirements of CCR, Division 3, Chapter 16, Article 3 and Article 4 can no longer be met, the local agency shall require the owner or operator to cease operation of the UST until appropriate modifications can be made

Conducting The Inspection

- RECORDABLE RELEASE (Cont.)
 - When the local agency reviews the operator's monitoring reports and finds that one or more recordable unauthorized release(s) have occurred, the local agency shall review the information included in their monitoring records, review the operating permit, and consider inspecting the UST

H&SC, Section 25294

CCR, Section 2651

■ Conducting The Inspection

■ REPORTABLE RELEASE

- Reportable releases must be reported to the local agency within 24 hours after the release has been detected or should have been detected
- The owner or operator shall investigate the condition and take immediate measures to stop the release
- If necessary or if required by the local agency, the remaining stored substance shall be removed from the tank to prevent further releases to the environment

Conducting The Inspection

■ REPORTABLE RELEASE (Cont.)

- Within five working days of detecting an unauthorized release, the owner or operator shall submit a report to the local agency which includes, but is not limited to, the following information:
 - Types, quantities, and concentrations of hazardous substances released
 - The approximate date of release
 - The date on which the leak was discovered
 - The date on which the release was stopped

■ Conducting The Inspection

■ REPORTABLE RELEASE (Cont.)

- Description of the actions taken to control and/or stop the release
- Description of remedial actions
- The methods of cleanup implemented to date, proposed cleanup actions, and a time schedule for implementing the proposed actions
- The method and disposal location of the released substance, and contaminated soils/groundwater or surface water

■ Conducting The Inspection

■ REPORTABLE RELEASE (Cont.)

- Description of the proposed method of repair or replacement of the primary and secondary containment
- Description of additional actions taken to prevent future releases

H&SC, Section 25295

CCR, Section 2652

■ Conducting The Inspection

■ MONITORING PROGRAM (Cont.)

- Before implementing any monitoring program the owner shall demonstrate to the satisfaction of the local agency that the program is effective in detecting an unauthorized release from the primary containment before it can escape from the leak interception and detection system
- This monitoring program shall be approved by the local agency

■ Conducting The Inspection

- MONITORING PROGRAM (Cont.)
 - The monitoring program should include, at a minimum, the following:
 - Frequency of the monitoring being performed
 - Methods and equipment used
 - Location(s) where the monitoring will be performed
 - The name and title of the people responsible for performing the monitoring and/or maintaining the equipment
 - The reporting format

■ Conducting The Inspection

■ MONITORING PROGRAM (Cont.)

- The preventative maintenance schedule for the monitoring equipment in accordance with the manufactures written instructions
- A description of the training necessary for the operation of both the tank system and the monitoring equipment

CCR, Section 2632, 2634 & 2641

LG-133

Conducting The Inspection

■ RESPONSE PLAN

- A response plan for an unauthorized release is required prior to the UST system being put into service
- This document should be in the local agency facility files and on site
- Verify that the plan is current with operating procedures
- Verify that if any equipment is specified for cleanup of a spill, that the equipment is on site

■ Conducting The Inspection

- OWNER/OPERATOR AGREEMENT
 - When the operating permit is issued to a person other than the operator, then the owner and operator shall enter into an agreement
 - This agreement shall specify that the operator is to monitor the tank system as set forth in the permit
 - The permittee is also required to provide the operator of the UST system a copy or summary of H&SC, Section 25299

■ Conducting The Inspection

- OWNER/OPERATOR AGREEMENT (Cont.)
 - The permittee shall notify the local agency of any change in operator
 - Owner/operator agreements should be retained in local agency facility files

Following Up The Inspection

- When you return to the office, or as soon as you can, you should prepare your inspection report
- Sending out inspection report by certified mail is helpful with enforcement cases
- Be sure to enter your inspection information into a database, including compliance deadline date and/or a re-inspection date

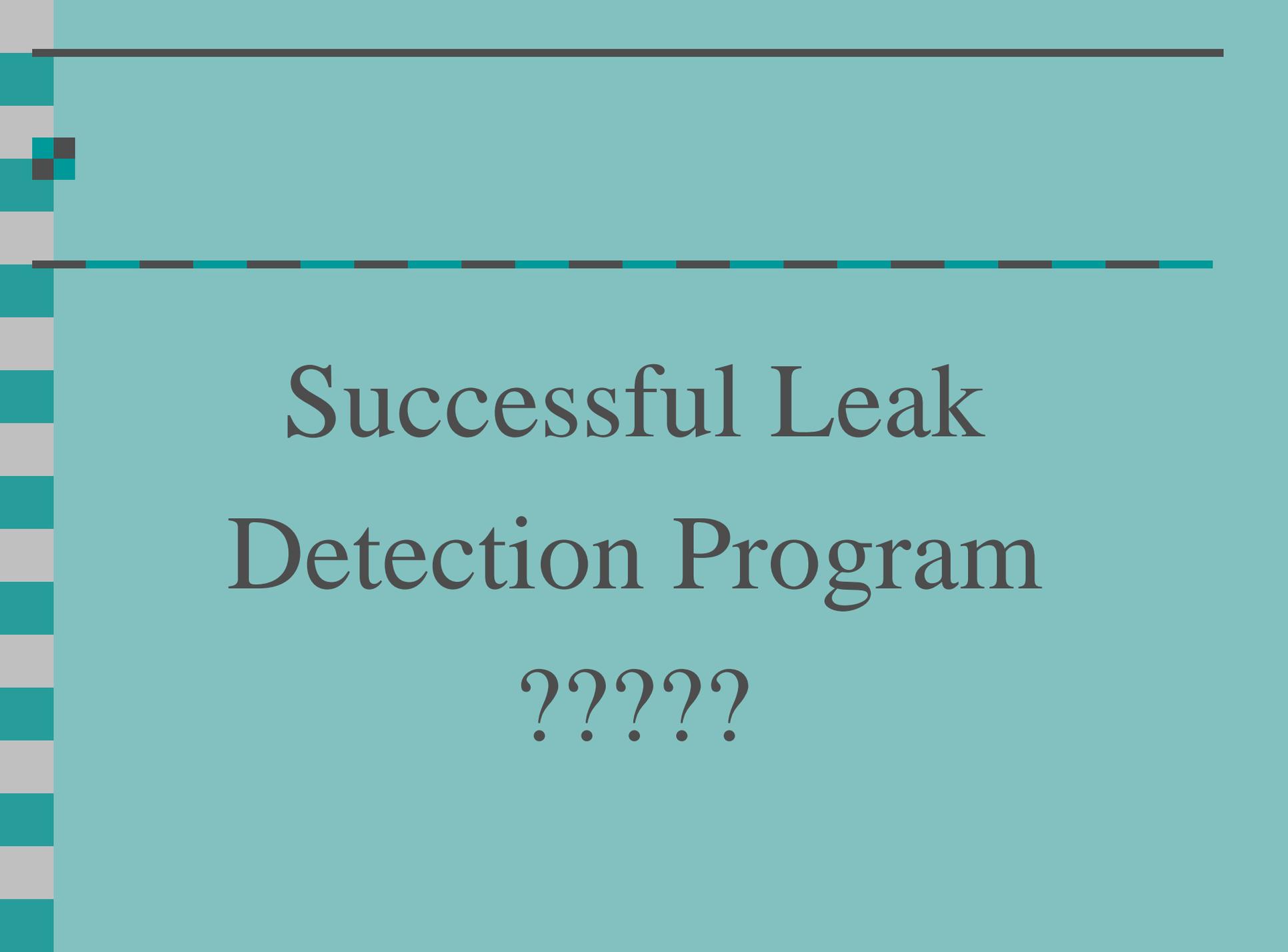
■ Following Up The Inspection

■ Pursuing violations:

- Pursuing violators should be based on severity and reoccurrence of violations
- What is the nature of the violation? You are not likely to get backing from the DA's office for enforcement of minor things such as sloppy record-keeping and dirty sumps.
- Is there a potential for a real threat to public health and/or the environment?
- What is the violator's compliance history? Are the violations repeatedly the same? How successful was the local agency in getting the owner/operator to comply with the regulations?

■ Consequences Of Noncompliance

- Make it clear to the tank owner that you will be following up to make sure that all violations are corrected
- Let him/her know what can and will happen if compliance is not achieved by the required compliance date that you have assigned
- Inform the owner that your efforts to obtain compliance will become increasingly vigorous and may ultimately result in criminal or civil penalties



Successful Leak Detection Program

?????

Be Alert

Report

Document

Respond

Investigate





**Summary of the UST Leak Prevention &
Enforcement Provisions of AB 2481
(Statutes 2002, Chapter 999)
Effective January 1, 2003**

Terms “*UST*” and “*UST System*.”

- *UST* means tanks and piping used for the storage of a hazardous substance [H&S Code, §25281(x)(1)].
- *UST system* means an underground storage tank, connected piping, ancillary equipment and containment systems [H&S Code, §25281(y)].

UST Systems Installed After July 1, 2003

- Primary and secondary containment must be “product tight.”
- “Product tight” means impervious to the liquid and vapor of the stored substance, to prevent seepage from containment.

UST Systems Installed After July 1, 2003

- Secondary containment must be constructed to prevent water intrusion into the *UST system* by precipitation, infiltration, or surface runoff.

UST Systems Installed After July 1, 2003

- Vent lines, vapor recovery lines, and fill pipes that are beneath the surface of the ground are defined as pipe and therefore part of the *UST system*, which means they must have secondary containment.

UST Systems Installed After July 1, 2003

- The *UST* must be tested after installation (but before being put into service) using one of the following: enhanced leak detection (ELD), an inert gas pressure test certified by a third-party and approved by the State Water Resources Control Board (SWRCB), or a test method deemed equivalent to ELD and approved by the SWRCB in regulation.
- (Note: The UST tightness test at start-up will no longer be required for *UST systems* installed on or after July 1, 2003.)

■ ELD Testing of UST Systems

- By June 1, 2003, the SWRCB must notify owners and operators of *UST systems* with secondary containment that are located within 1,000 feet of a public drinking water well of the requirement to test the *UST system* once using ELD. ELD testing must be performed by January 1, 2005.
- (Note: This requirement does not apply to *UST systems* installed on or after July 1, 2003.)

ELD Testing of UST Systems

- If results of ELD testing indicate that any component of the *UST system* is leaking liquid or vapor, the owner or operator must take appropriate actions to correct the leakage.
- Additionally, the owner or operator must retest the *UST system* using ELD until the *UST system* is no longer leaking liquid or vapor.

All UST Systems

- Owners/operators must annually test spill containment structure(s) designed to prevent a release in the event of a spill or overflow while a hazardous substance is being placed in the tank to show that it is capable of containing the substance until it is detected and cleaned up.

Tank Test Reporting

- Requires a tank tester who conducts or supervises a tank or piping integrity test to prepare a report detailing the results of the tank test and to maintain a record of the report for at least three years, in a specified manner. Tank testers must sign these reports with an original signature under penalty of perjury.
- Additionally, a tank tester must type or print his or her name and license number on the report.

Diesel Emergency Generator Tank (EGT) Systems

- *EGT system* means a *UST system* that provides power supply in the event of a commercial power failure, stores diesel fuel, and is used solely in connection with an emergency system, legally required standby system, or optional standby system, as defined in the Articles 700, 701, and 702 of the National Electrical Code of the National Fire Protection Association.

Diesel Emergency Generator Tank (EGT) Systems

- Any tank or piping that is part of an *EGT system* located in a structure as described in the H&S Code §25283.5 is exempt from secondary containment testing if visual inspections of the tank or piping are conducted each time the *tank system* is operated, but no less than monthly.

Diesel Emergency Generator Tank (EGT) Systems

- Unburied fuel piping connected to an *EGT system* is excluded from the definition of *UST*, if the owner or operator conducts visual inspections of the piping each time the system is operated, but no less than monthly. This exclusion does not apply if the SWRCB adopts specific regulations relative to *EGT systems*.

Diesel Emergency Generator Tank (EGT) Systems

- Secondary containment components that are part of an *EGT system* may be tested using ELD if the test is performed at the frequency specified by the SWRCB secondary containment testing regulations.

Diesel Emergency Generator Tank (EGT) Systems

- If results of ELD testing indicate that any component of the *UST system* is leaking liquid or vapor, the owner or operator must take appropriate actions to correct the leakage. Additionally, the owner or operator must retest the *UST system* using ELD until the *UST system* is no longer leaking liquid or vapor.

Red Tag & Administrative Enforcement Order (AEO) Authority

- Deletes requirement for an upgrade certificate of compliance and substitutes red tag authority.

■ Red Tag & AEO Authority

- A local agency may, upon the discovery of a significant violation that poses an imminent threat to human health, safety, or the environment, immediately affix a red tag to the fill pipe to provide notice that the delivery of petroleum into the *UST system* is prohibited.

■ Red Tag & AEO Authority

- If a local agency discovers a significant violation that does not pose an imminent threat, the local agency may issue a notice of significant violation to the owner or operator. The owner or operator must within seven days correct the violation. If the owner or operator fails to correct the violation to the satisfaction of the local agency, the local agency may affix a red tag to the fill pipe to provide notice that the delivery of petroleum into the *UST system* is prohibited.

■ Red Tag & AEO Authority

- Upon notification by the owner that a violation has been corrected, the local agency must re-inspect the *UST system* within 5 days to determine whether the system continues to be in significant violation. If the local agency determines that the violation has been corrected, the local agency must immediately remove the red tag.

■ Red Tag & AEO Authority

- Prohibits any person from depositing petroleum into an *UST system* that has a red tag affixed to its fill pipe.
- Requires the SWRCB to adopt regulations defining “significant violation.”

■ Red Tag & AEO Authority

- Authorizes Unified Program Agencies to issue AEOs requiring that violations be corrected and to impose an administrative penalty. The law specifies procedures for conducting a hearing, upon the request of a person served with an order.



Summary of the UST Leak Prevention

AB 1702

(Statutes 2003, Chapter 42)

Effective July 1, 2004

UST Systems Installed After July 1, 2004

- The *UST system* must be designed and constructed with a continuous monitoring system capable of (1) detecting entry of the liquid or vapor-phase substance stored in the primary containment into the secondary containment and (2) detecting water intrusion into the secondary containment.

UST Systems Installed After July 1, 2004

- The interstitial space of the *UST* must be maintained under constant vacuum or pressure to detect a breach in the primary or secondary containment before the liquid or vapor of the stored substance is released to the environment. Interstitial liquid level measurement methods satisfy this requirement.
- (Note: Annual line tightness testing on pressurized piping will no longer be required for UST systems installed after July 1, 2003.)

Let's Review....

- Background: rationale for new requirements
- Vacuum, pressure, or hydrostatic (VPH) methods for continuous monitoring of interstitial space
- Evaluation and approval process for monitoring equipment
- Current status of equipment development

Background: Rationale for New Requirements

- Study of operating USTs (Field-Based Research) indicated widespread vapor releases, even from double-walled USTs
- Secondary containment testing showed similar failures
- Number of new releases began to increase
- New UST legislation enacted to address findings

New Requirements

- New USTs installed on or after July 1, 2004: VPH methods for continuous monitoring of primary and secondary containment
- Purpose: to detect a breach in the primary or secondary containment before the liquid- or vapor-phase of the hazardous substance stored is released into the environment

VPH Monitoring

- **Continuous monitoring of tanks and piping using:**
 - vacuum (below atmospheric pressure)
 - pressure (above operating pressure)
 - hydrostatic (interstitial liquid level monitoring)

Note: Applies only to UST systems installed on or after July 1, 2004

Monitored Components

- **VPH Monitoring will be required on:**
 - interstitial space of double-walled tanks
 - interstitial space of double-walled piping, including
 - product piping (from top of tank to bottom of shear valve)
 - vent/vapor recovery piping

Note: double-walled sumps and UDC with VPH monitoring may be used to contain single-walled piping components

VPH Performance Criteria

- **VPH monitoring systems must:**
 - detect leaks in primary and secondary containment
 - be sensitive to liquid and vapor leaks
 - detect leaks before the stored hazardous substance enters the environment
 - operate continuously (not a one-time test)

VPH Approval Process

- **All monitoring equipment and methods (including VPH systems) are required to undergo:**
 - third-party evaluation in accordance with EPA standard protocol or equivalent
 - electrical and fire-safety approval

VPH Approval Process - Third-Party Evaluation

- Functional testing conducted in a lab or in the field
- Conducted by an independent testing lab, research organization, or educational institution
- Evaluated according to a set test protocol
 - EPA Standard Protocol (none available for VPH)
 - National Consensus Code
 - Alternative protocol equivalent to EPA Standard Protocol (developed by tester, industry, or independent work group)

VPH Approval Process - Third-Party Evaluation

Evaluation protocols must:

- test equipment under conditions that simulate interferences likely to be found in the field
- be based on functional testing, not theoretical calculations
- evaluate all portions of the actual leak detection equipment to be used in the field
- testing of scale models or “prototype” systems does not satisfy the third-party evaluation requirement

VPH Approval Process - Review of Evaluation

National Work Group on Leak Detection Evaluations (NWGLDE)

- independent work group, formed in 1993
- 10 members (state and federal UST regulators)
- helps to eliminate duplicate efforts among regulatory agencies across the nation
- LG-113 is based on NWGLDE's National List
- <http://www.nwglde.org>

VPH Approval Process - SWRCB Staff Activities

- **Work with leak detection manufacturers to:**
 - define and clarify performance criteria
 - identify acceptable testing organizations and evaluation protocols
 - clarify third-party evaluation requirements and evaluation review/approval process
- **Work with NWGLDE to expedite review process**



UST TRAINING PLUS REGULATIONS

■ UST “Training Plus” Regulations

- Training, Licensing, and Best Management Practices
- Materials Compatibility and Permeability
- Monitoring of Double-Walled Pressurized Piping

SB 989 Requires Training For:

- Owners and Operators,
- Service Technicians,
- Installers, and
- Inspectors.

“...meet minimum industry-established training standards...”

Health and Safety Code, Chapter 6.7,
Section 25284.1(a)(4)(A)(i)

UST Owner/Operator Requirements



Owner Requirements

Effective January 1, 2005

- Signed statement with local agency, which includes:
 - Owner understands and is in compliance with all applicable UST requirements.
 - Owner notifies the local agency of the “Designated UST Operator(s)” for each facility owned.

Designated UST Operator Requirements

Effective January 1, 2005

- Possess a current California UST System Operator certification issued by the International Code Council (ICC).
- Perform monthly visual inspections for each facility and maintain a log.
- Provide on-the-job training for facility employee(s) and re-train every 12 months.

Facility Employee On-the-Job Training

Effective July 1, 2005

- Provided by the Designated UST Operator
- Facility-specific
- Training must include:
 - Operation of the UST in a manner consistent with “Best Management Practices”
 - Emergency contact information
 - Spill/Overfill response procedures
 - Monitoring equipment operation and alarm response

Definition of Best Management Practice

“...any UST system management and operation practice which is the most effective and practicable method of preventing or reducing the probability of a release.”

Service Technician Requirements



Service Technician Requirements

- Secondary Containment Testing
 - Possess tank testers license or CSLB license.
 - **Effective July 1, 2005**, possess a current ICC California UST Service Technician certification.
 - Trained and certified by developer of testing equipment or by manufacturer of component being tested*.

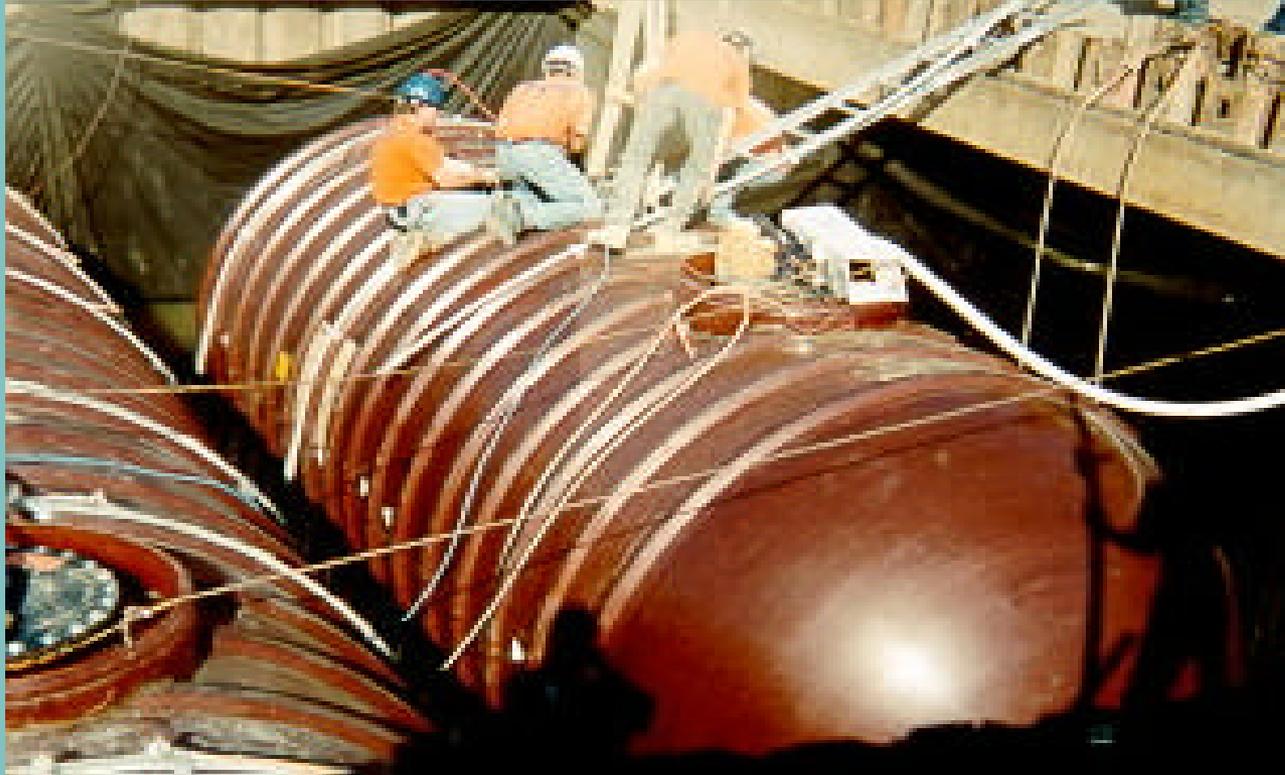
*Service Technicians required to be re-certified at the time interval specified by the manufacturer (or every 36 months whichever is shorter).

Service Technician Requirements

- Monitoring Equipment Certification
 - Possess tank testers license or CSLB license.
 - **Effective July 1, 2005**, possess current ICC California UST Service Technician certification.
 - Trained and certified by monitoring equipment manufacturer*.
 - Equivalent training may be used if no manufacturer training exists.

*Service Technicians required to be re-certified at the time interval specified by the manufacturer (or every 36 months whichever is shorter).

UST Installer Requirements



UST Installer Requirements

- Possess a CSLB license and Hazardous Substance Removal Certification
- Individuals installing UST systems or components must meet the following, or work under the direct and personal supervision of an individual physically present at the work site who meets the following:
 - Trained and certified by manufacturer of the UST system component.
 - **Effective January 1, 2005**, possess a current ICC UST Installer certification.

UST Inspector Requirements



UST Inspector Requirements

Effective September 1, 2005

- Possess a current ICC California UST Inspector certification.
- UST inspectors hired on or after **September 1, 2005** must become certified within 180 days from the date of hire.

■ Frequency of Training/Certification

- Designated UST Operators, Service Technicians, Installers, and Inspectors must be re-trained/re-certified every 24 months.
- Inspectors may renew certification by either passing the ICC California UST Inspector exam or satisfying equivalent criteria approved by the SWRCB UST Program Manager.
- Facility Employees must be re-trained annually.

Compatibility and Permeability

- Owner/operator must provide to local agency compatibility and permeability testing results for UST system components, upon request.
 - Results that may be requested include a list of compatible products tested and measured permeation rates, if such testing is required by the industry code or engineering standard used to evaluate the component.
 - Applicable to new systems installed on or after **July 1, 2004**.

Monitoring of Double-Walled Pressurized Piping

Effective November 9, 2004

- Automatic line leak detectors (LLDs) for all double-walled pressurized piping (except emergency generator systems).
 - Mechanical or Electronic LLD can be used
 - Response to sensor study findings
 - Consistent with recent American Petroleum Institute recommendation

Monitoring of Double-Walled Pressurized Piping

Effective May 8, 2004

- Modifies the annual 0.1 gph piping test equivalent alternative.
- No 0.1 gph annual piping test required if continuous monitoring system:
 - Stops the flow of product at the dispenser when a leak is detected within the UDC; **AND**
 - Provides “Fail-Safe” pump shut-down when a leak is detected at any other point in the piping system (turbine sumps and transition sumps)

Enforcement

Options/Requirements

- Result of AB 2481
- Administrative Enforcement Order
- Significant Violation
- Red-tag

■ Administrative Enforcement Orders

- AEOs are an administrative enforcement mechanism that allow an agency to take enforcement action (fines) without going through City or District Attorneys, AG, etc.
 - Quicker
 - Easier
 - More Efficient

■ Administrative Enforcement Orders

- Goal is to return facility to compliance in timely manner:
 - Eliminate economic benefit;
 - Punish the violator; and
 - Deter future non-compliance

SIGNIFICANT VIOLATION

- Significant Violation (SV) means the failure of a person to comply with any requirement of Chapter 6.7 of the Health and Safety Code or any regulation adopted pursuant to Chapter 6.7, not including the corrective action requirements in Section 25296.10 of the Health and Safety Code and Article 11 of Chapter 16 of Title 23 of the regulations.

SIGNIFICANT VIOLATION

The following are SVs:

- Violation(s) causing or threatens to cause a liquid release
- Violation(s) that impair an UST's ability to detect a liquid leak or contain a liquid release
- Chronic or Recalcitrant Violators

WHAT HAPPENS IF A UST IS RED-TAGGED?

- No fuel deliveries!
 - Owner/Operator may not allow deposit of fuel into that system.
 - No person may deposit fuel into that system.
 - If fuel IS delivered:
 - Up to \$5000 in penalties for any owner or operator who allows the delivery.
 - Up to \$5000 in penalties for any person who deposits fuel.

■ Red-Tag Follow-up

- When violation corrected, the owner or operator must notify the local agency.
- Within 5 days of receiving notice by owner or operator, the local agency must inspect the UST system to determine whether the system has been fixed.
 - If system fixed, local agency must remove red tag immediately.
 - If system not fixed, local agency may leave red tag in place until a new notice is issued by owner or operator.

RED TAGS

- Upon discovery of a **significant violation** that poses an “**imminent threat to human health, safety, or the environment,**” the local agency may immediately affix red tag to fill pipe.
 - **Significant violation** that **does not** pose an imminent threat, local agency may issue Notice of Violation, and give owner/operator 7 days to correct.
 - If not repaired, then local agency may affix red tag.

Enhanced Leak Detection

“Enhanced Tracer Tight® Test”

■ Existing USTs

- For USTs located within 1,000 feet of a public drinking water well
- Vertical probes installed through surface
- On-site samples collected up to 14 days after inoculation
- Wet (Product) Test

■ New USTs

- For all new USTs installed on or after July 1, 2003
- Horizontal probe array installed during construction of facility
- Mobile lab used so testing typically may be completed in 2 days
- Dry (Air) Test

UST Program Contacts

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