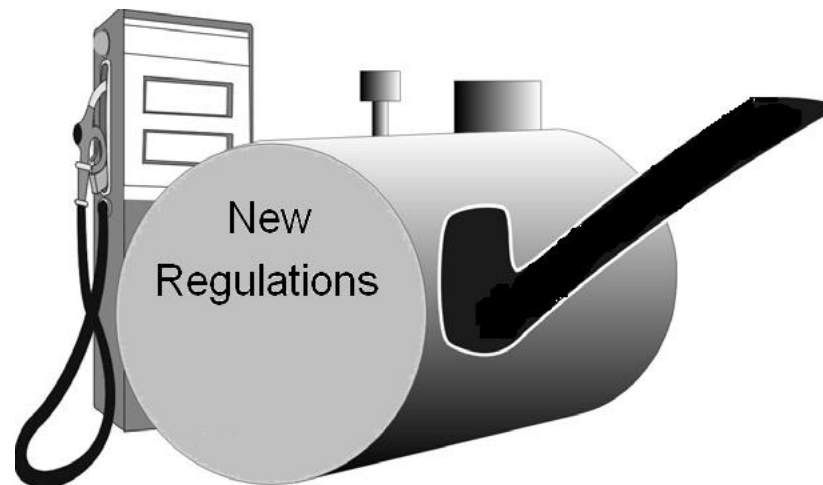


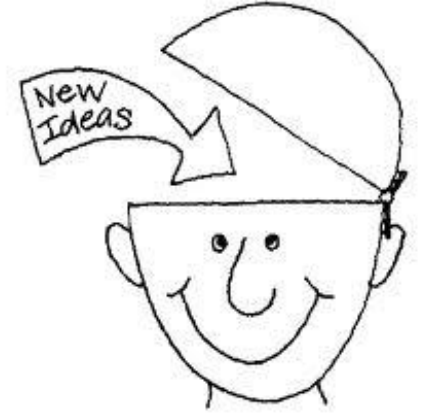
UST RULES CHANGES



*Heather Peters,
Environmental Specialist*

Today's Topic

- 2011 Rule package- what's left?
- Upcoming rule changes
- Federal Regulation Changes & Testing Protocols
- How are “you” doing?



2011 Rule Package

- **You:**
 - Provided input and experience
 - Suggested new and creative solutions
 - Identified pitfalls and problems
 - Got involved!

THANK YOU!

What are we still working to enact?

- Emergency generator tank issues
- Lining inspections (repair/compatibility)
- High throughput facilities
- SIR records
- Updating new installation certifications
- *Out of use tanks (to be covered later today)*

Emergency generators

- Limited tank release detection options:
 - ATG, Manual gauging (only USTs under 2,000 gallons), Groundwater monitoring (not recommended)
- Pressurized piping
 - Can use sump sensors (alarm) instead of LLD
- Safe or unsafe suction

Safe suction

- Operates at less than atmospheric pressure
- Sloped so that all contents will drain back into the storage tank
- Only one check valve and it is immediately below the pump (in dispenser or at day tank/inside pump)
- Cannot have valve at tank top

Safe
suction:

Ball
valves
are
open



UST



Generator in
Basement

UNSAFE SUCTION

Tank higher than Generator=Unsafe Suction





Tank top valves=Unsafe Suction

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Piping Release detection

- Safe suction: No monitoring required
- Unsafe suction
 - Line tightness test every 3 years
 - Monthly/Continuous Interstitial monitoring
 - Monthly Groundwater monitoring (not recommend)

Lining inspections

- Lined tanks must be inspected within 10 years of initial install, every 5 years, maintained and repaired (pass integrity test)
 - Upgraded
 - Lining repaired tank (even if using cathodic protection)
 - Compatibility (even if fiberglass tank)

High throughput facilities

- Individual tank systems with over 800,000 gallon throughput per month
- No matter the throughput- must be conducting monthly monitoring
- Struggling to capture throughput/ identify these facilities

Statistical Inventory Reconciliation (SIR)

- To be a valid SIR report, it must include:
 - Be NWGLDE listed to detect 0.2 gph leak
 - Each tank individually (unless siphon tanks)
 - Meet SIR vendor requirements
 - Tank read every day to the nearest 1/8”
 - Each full monthly report (no summaries)
 - Include date report was completed (within 15 days)
 - Include leak rate and pass/fail/inconclusive

New Installations

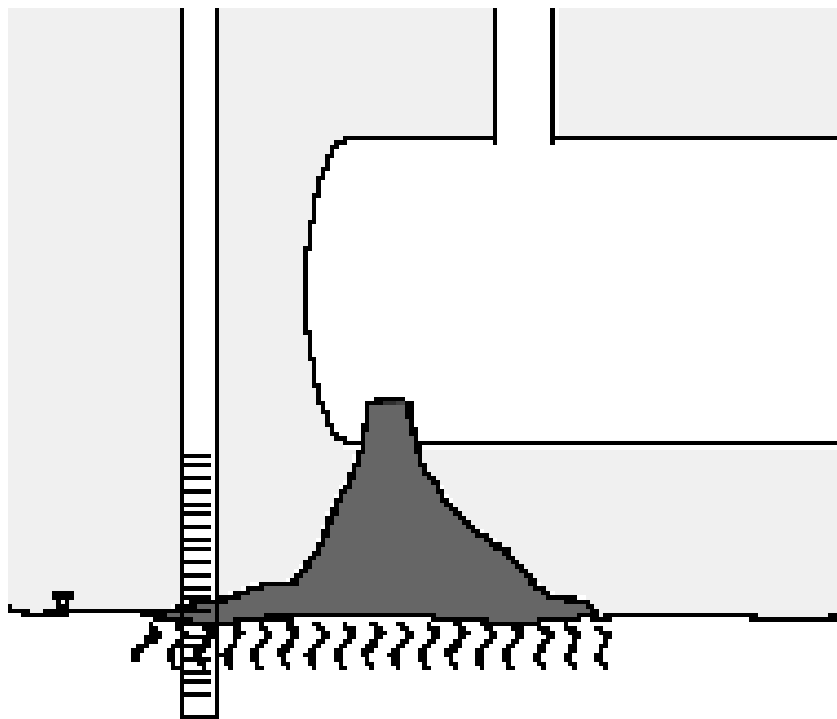
Going great! Thank you for scheduling updates!

Reminders:

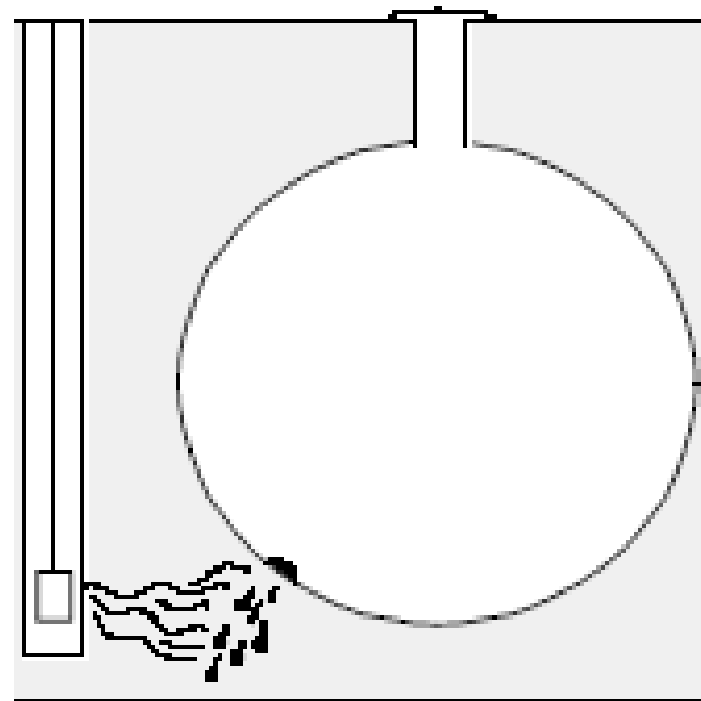
- Update your certifications
- Provide current insurance to Dept. of Ag.
- Backfill must meet manufacturer spec
- Unique designs- CALL US!

Upcoming Rulemaking

- State specific changes
- Secondary containment (double walled)
- Operator Training
- Other Federal Regulation changes



Groundwater
Monitoring



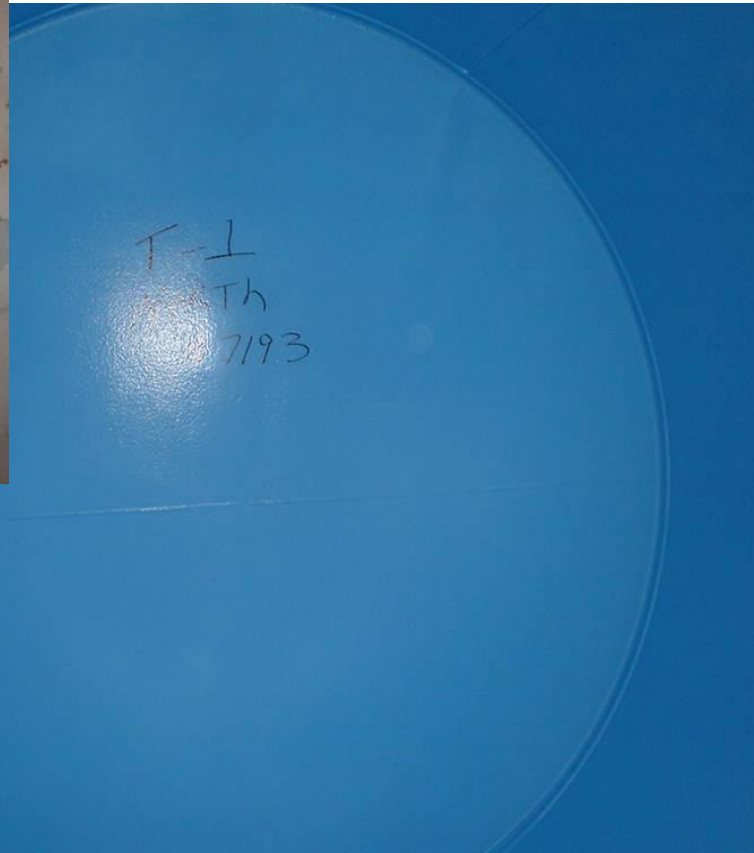
Vapor Monitoring

State Specific Changes/Discussions

Release Detection

- Sunset groundwater/vapor monitoring
- Limit throughput on SIR
- Lower “high-throughput” threshold
- Require ATGs to maintain “backup”
 - Data upload or battery backup power

Interior Linings



State Specific Changes/Discussions

Interior linings

- Interior lining inspections must include photo/video documentation
- Interior lining repair/install technician must be NACE or ICC certified
- Include UL 1856
- No interior lining inspection required IF conducting interstitial monitoring

State Specific Changes/Discussions Repairs/ Upgrades

- Cannot re-repair a spill basin
- CP protected metal piping must be replaced if not protected for more than 90 days

State Specific Changes/Discussions

Installs

- Cannot install a UST within 300 feet of well
- Change install notification from 30 to 14 days
- Post-installation tank tightness tests must be NWGLDE certified as a *tightness test*
- Tie-down all new USTs
- Revisit UL1856 stand alone system
- Establish a section for marinas

Secondary containment

- New (including replacement) tanks only
- Piping replacement (50% or more of a piping system within 1 year)
- Does not apply to existing systems (until replaced)

Effective July 1, 2017

Secondary containment

- Double wall tanks
- Double wall piping
- Containment sumps
- Interstitial monitoring the system

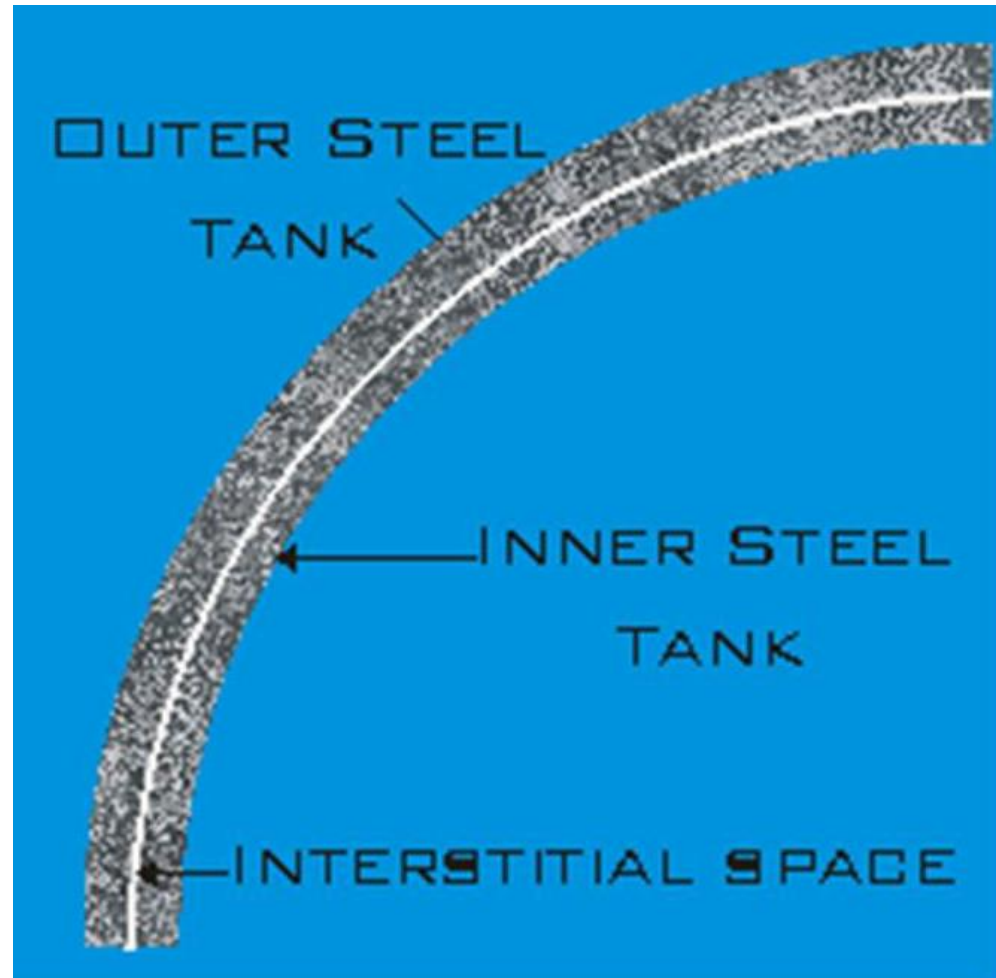
- We will not include spill basins, siphon piping, remote fills or vent piping.

Single or Double-wall design



Secondary containment terminology

- Inner wall = primary
- Outer wall = secondary
- Space in between = interstice
- Monitoring between the two walls = interstitial monitoring

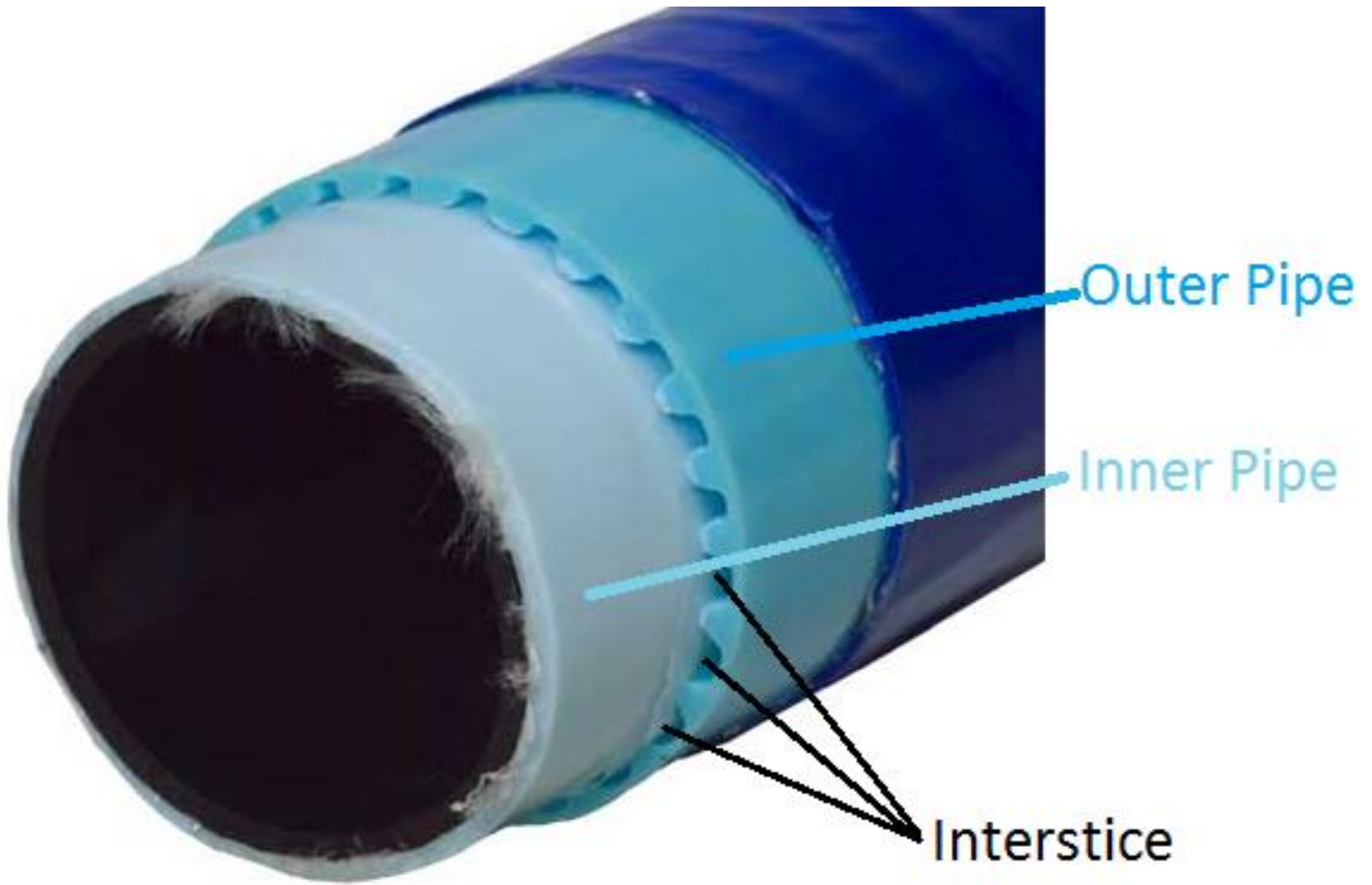


**Sensors or
Fluid Between
Walls to
Detect Leaks**

Groundwater

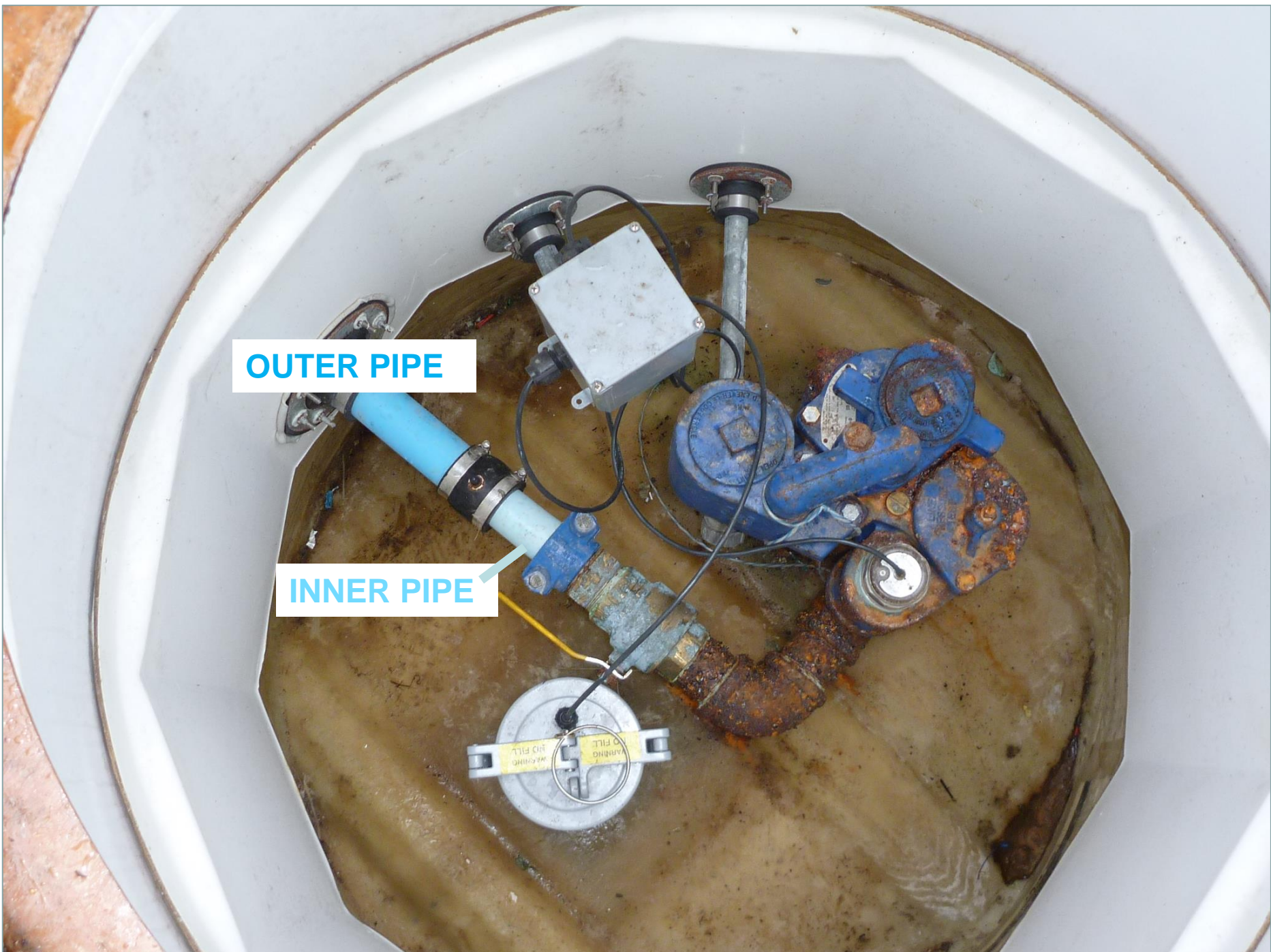


**Detect Leaks
of Product From
Inner Wall or
Ground Water
from Outer Wall**



OUTER PIPE

INNER PIPE

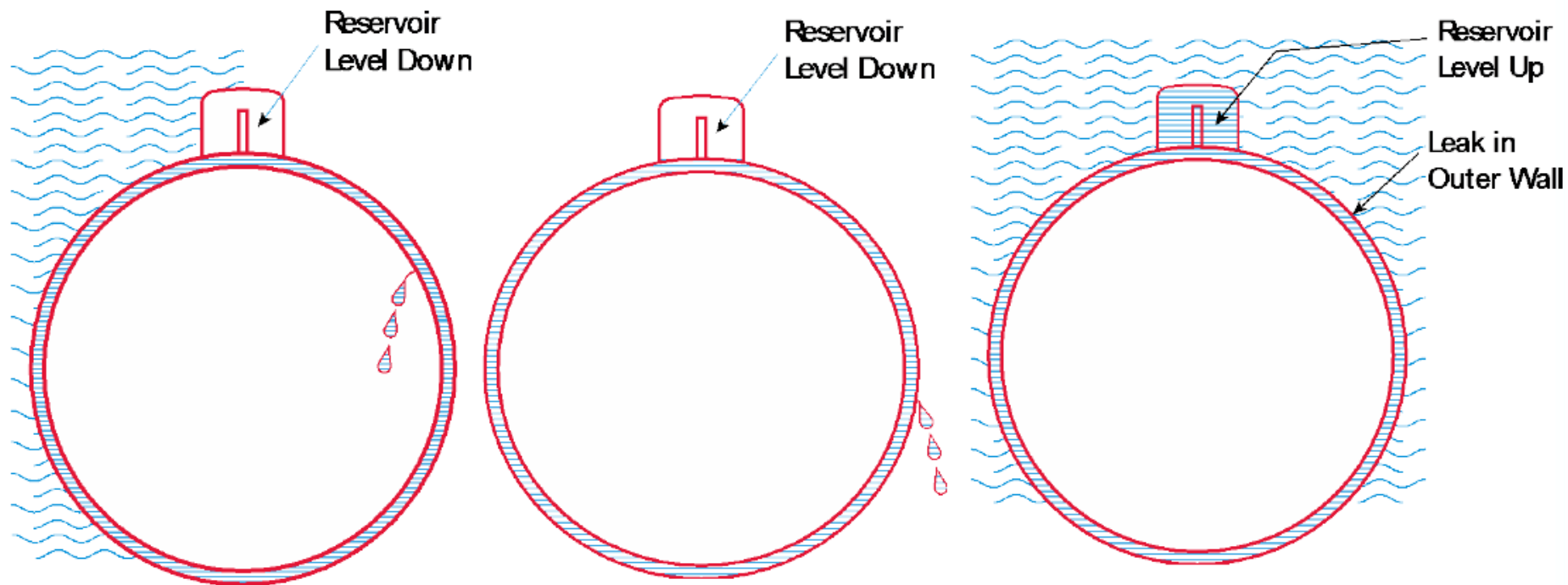




Interstitial monitoring

- Liquid detection (sensor in interstice or in containment sumps)
- Brine measurements
- Vacuum/pressure testing or monitoring

Brine Interstitial Monitoring



**Primary-Tank Leak
in Wet Hole or Dry Hole**

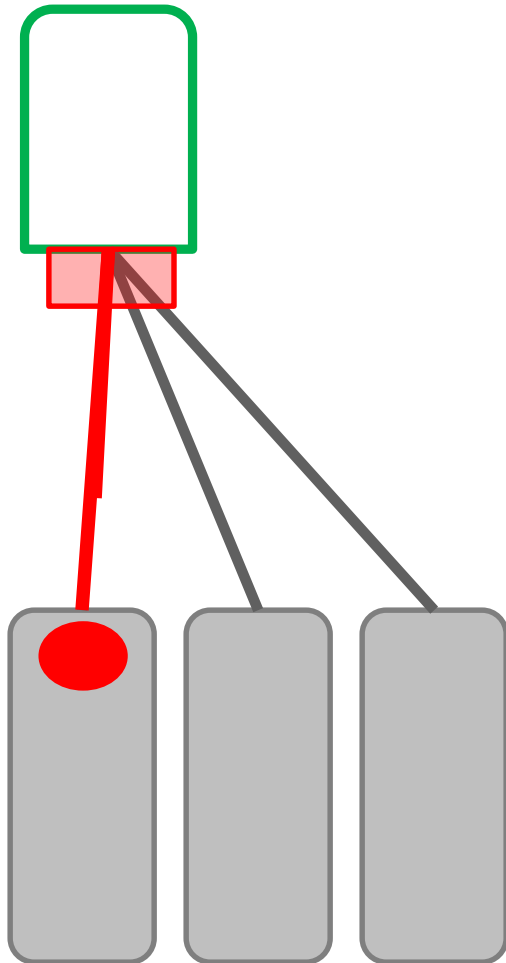
**Secondary-Tank Leak
in Dry Hole**

**Secondary-Tank Leak
in Wet Hole**

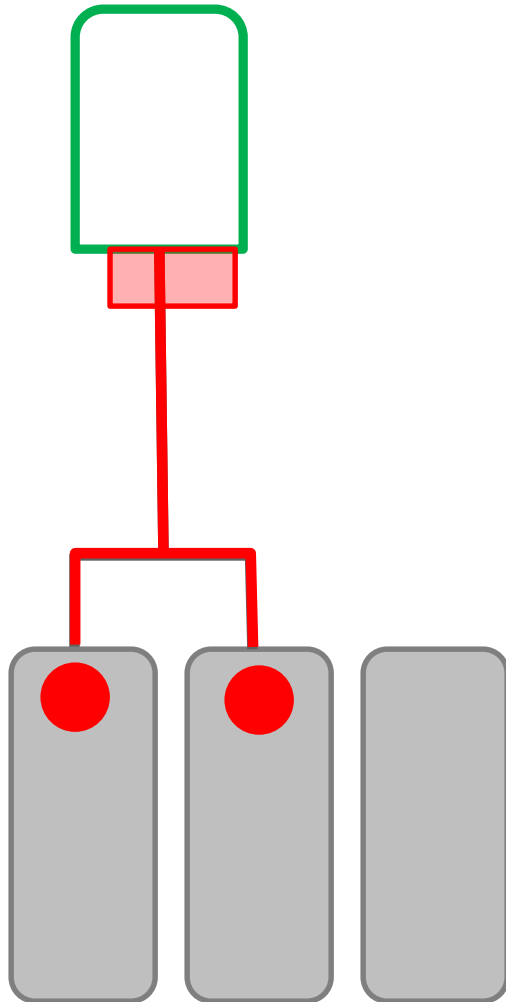
50% piping system replacement

- Within 12 month period
- For a piping system
 - Single tank's piping (single product)
 - 50% of manifolded piping
 - Not of the total site piping
 - Do not combine same products unless piping is manifolded

The *entire* piping system must be double walled with containment sumps and monitoring.



- Based on individual tank systems
- Does not matter how many different systems/products are beneath the dispenser
- May have to install containment sumps under dispensers with other piping runs entering



- Manifold piping (all connected) counts as a system
- Even if only affects one “half” of the manifold, all of the connected piping must comply
- Includes sumps at each end and transition

Operator Training

- Training/testing online 2014
- By January 1, 2016 qualified Class A/B
 - Must pass Missouri's online training/testing
 - Be certified in an adjacent/bordering state
- By January 1, 2016 trained or test Class C

Other Federal Requirements

- On-site “walk-through” checks
- Testing:
 - Secondary Containment
 - Spill basin
 - Overfill prevention equipment
 - Release Detection
- New regulated tanks:
 - Airport hydrant/fueling USTs, Field constructed (concrete), Oil/ water separators??

Routine Site Checks (O&M)

- Dispensers
- All tank top manholes/containment sumps
- Release detection equipment
- Spill basins
- Monitoring wells
- Cathodic protection (if present)
- Document these checks

Things to consider

- Location of tanks
- Create a checklist for the site
- Type (weight) of all drive plates
- Safety- cones, vests
- Dispenser keys at facility

Testing procedures

- Petroleum Equipment Institute (PEI) RP 1200
- Manufacturer test procedure
- The following slides provide a *general overview* of the procedures

PEI RP 1200



DO NOT USE AS A PROTOCOL!

Sump testing

- Check liquid level in backfill
- Clean sump and close test boots
- *Temporarily* remove interstitial sensors
- Must be able to read measuring device/stick to nearest 1/16"
- Fill with water 4" above highest entry/seam
- Wait 15 minutes (allow for sump settling)

Sump testing

- Insert measuring device (lowest point)
- Take reading (ideally leave stick in place)
- Wait one hour and take reading again
- If within 1/8" of original reading- pass
- If greater than 1/8" difference- fail
- Dispose of water properly

Things to consider

- Number of sump penetrations
- Location of sump penetrations
- Types of containment sumps
- Entry boots- type and installation
- Seal all electrical conduits well
- Keep the sumps clean and free of product

Spill bucket testing

- Hydrostatic (water) test
- Vacuum test
- Interstitial vacuum test



Spill bucket testing - Hydrostatic

- Clean spill basin
- Check for cracks, loose seals
- Check drain valve and fill for tight seal
- Fill with water 1.5” from top
- Wait 5 minutes to allow settling

Sump bucket testing- Hydrostatic

- Take first reading
- Wait 1 hour and take second reading
- If within 1/8" of original reading- pass
- If greater than 1/8" difference- fail
- Dispose of water properly

Alternative spill bucket testing

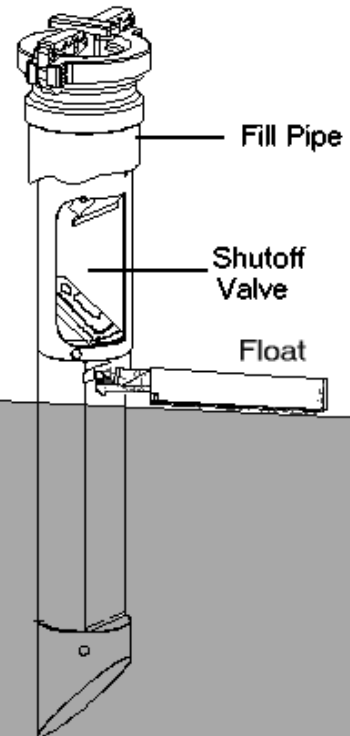
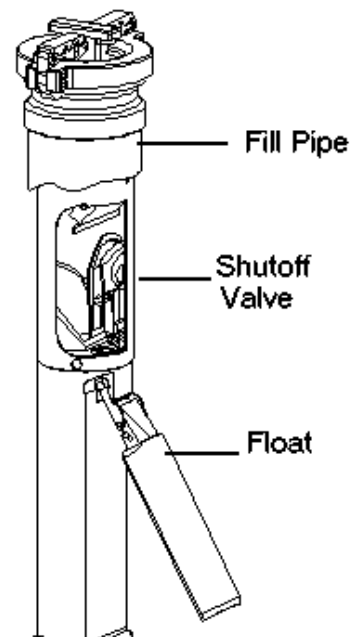
- Vacuum test of the primary spill basin
- Vacuum test of interstice on double walled spill basin
- Permanent liquid sensor in spill basin interstice (??)

Overfill testing

- Do not overfill the tank to test!!
- Flapper valves - 95% tank volume
- Ball float valves - 90% tank volume
- Alarms- 90% tank volume

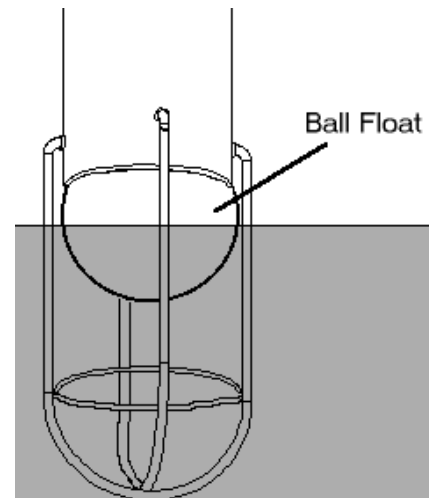
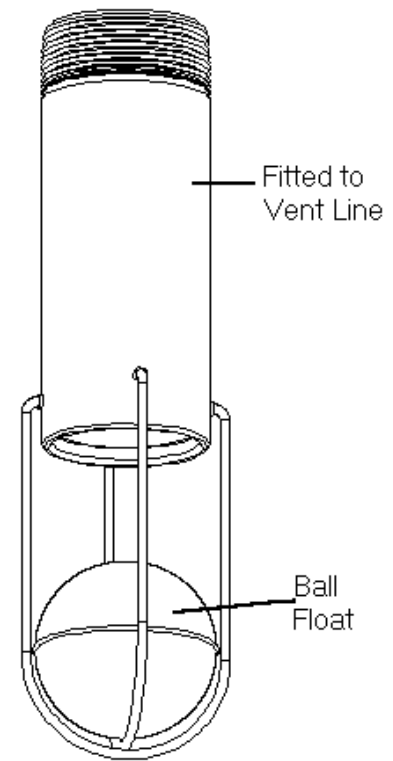
Overfill testing- Flapper valves

- Remove drop tube
- Confirm no obstructions in tank
- Visually inspect auto shutoff
- Move the float mechanism
- Close and confirm shutoff valve closes (drop tube flow restriction)
- Confirm 95% (height of flapper)



Overfill testing- Ball float valves

- Remove ball float valve assembly
- Visually inspect
 - No damage on ball (holes, cracks)
 - Cage pieces secure and unbroken
- Ball can move freely
- Ball can “seat” tightly in vent
- Confirm ball seats at 90%



Overfill testing- Ball float valves

- Review site for incompatibilities:
 - Coaxial drop tubes
 - Open tank top fittings
 - Remote fill pipes or evidence of pressure deliveries (e.g. tank is higher than fill box)
 - Suction piping
- Fail on any of these items – Fail

Overfill testing- Alarms

- Check manufacturer protocol
- Manually measure product level in tank and compare to ATG
- Verify alarm circuit ok on monitor
- Activate alarm warning



Overfill testing- Alarms

- Remove ATG cap, disconnect probe wire
- Remove ATG probe
- Check floats are mobile (if applicable)
- Reconnect ATG probe cable
- Set float in middle of probe and confirm reading is accurate (use tank chart)
- Move probe up until alarm. Confirm 90%
- Reinstall ATG probe

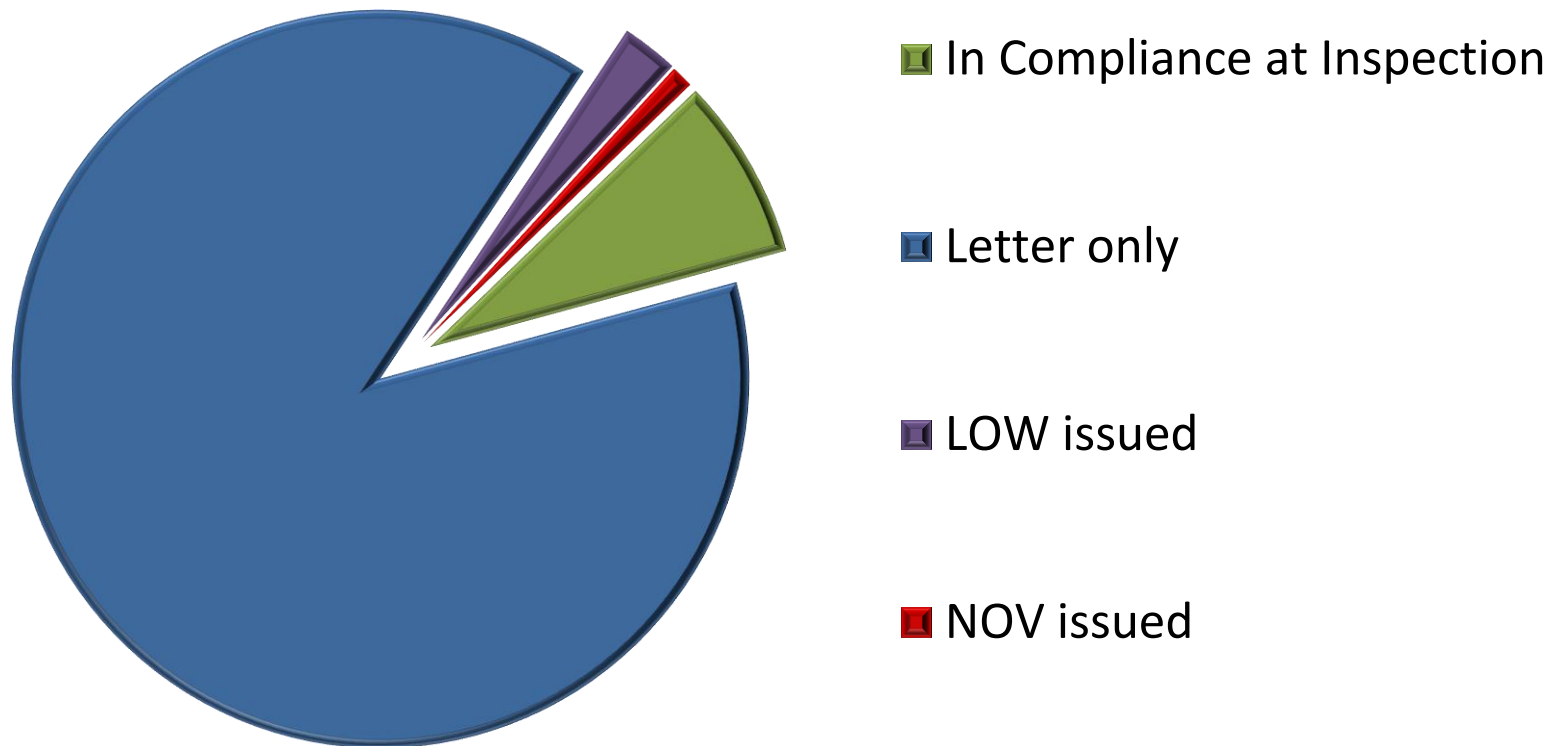
Overfill testing- Alarms

- This protocol will not work for all probe types
- Consult manufacturer's ATG probe and alarm test procedures
- Should be done by manufacturer certified technician
- If does not pass, repair or install alternative overfill prevention equipment

Inspection Compliance Rates

- From three years of inspections:
 - 3740 compliance inspections
 - 92% of our active site inspections find something
 - Only 3% needed an LOW
 - Approximately 1% have been issued an NOV

Three Years of Inspections



Coming together
is a beginning;
keeping
together is
progress;
working together
is success.

--Henry Ford

Missouri Tanks Partnership

