New Regs – Get Ready for Containment Testing if You Haven't Done So Already!











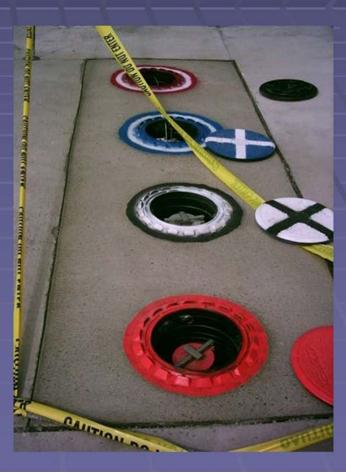
Edward S. Kubinsky Jr.
CROMPCO, LLC
Director of Regulatory Affairs,
Training and Certification
ed.kubinsky@crompco.com
NEWIPCC Webinar
03/16/2017



There Are Several Important Changes That Are Coming Quickly to Owners Due To New Federal UST Rules. Our Focus Will Be On Containment Testing (Spill Buckets & Containment Sumps).









GET FAMILIAR WITH THE "NEW" STANDARD! PEI RP 1200

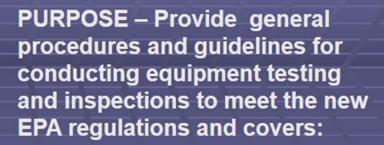
Document Timeline Overview

- May 2010 Committee was appointed by PEI
- January 2011 Committee had our first face-to-face meeting
- January 2012 RP1200 draft went out for public comment
- 256 public comments were received
- April 23-26, 2012 Committee met to review/discuss all public comments submitted
- August 22, 2012 PEI RP1200 published
- Comment period opened 7/13/15 to revise RP 1200
- Comments to revise RP 1200 were due 1/29/16
- Committee met December 15-16, 2016 to review comments (approximately 100 pages worth)
- 2017 Version of RP 1200 due to be published shortly......

PEI RP1200

PEI/RP1200-12

Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities



- Overfill Prevention Equipment
- ·Leak Detection Sensors
- **ATGs**
- •Line Leak Detectors
- Spill buckets
- Containment Sumps
- •Tank & Piping Interstitial Spaces
- ·Shear Valves
- ·E-Stops



PEI RP1200

PEI/RP1200-12

Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities Edward S. Kubinsky, Jr., Chairman CROMPCO, LLC Plymouth Meeting, Pennsylvania

Scott C. Boo. Wawa Inc. Wawa, Pennsylvania

Danny Brevard Accent Environmental Services Inc. Pollok, Texas

Jim Brown Belshire Environmental Services, Inc. Foothill Ranch, California

Brian Derge Tanknology Austin, Texas

Lorri Grainawi Steel Tank Institute Lake Zurich, Illinois Brian Harmon
Tait Environmental Services, Inc.
Anaheim, California

Kevin Henderson Kevin Henderson Consulting LLC Brandon, Mississippi

Jim Howard Hess Corporation Woodbridge, New Jersey

Ron Kingsbury UST Services Corporation Owings, Maryland

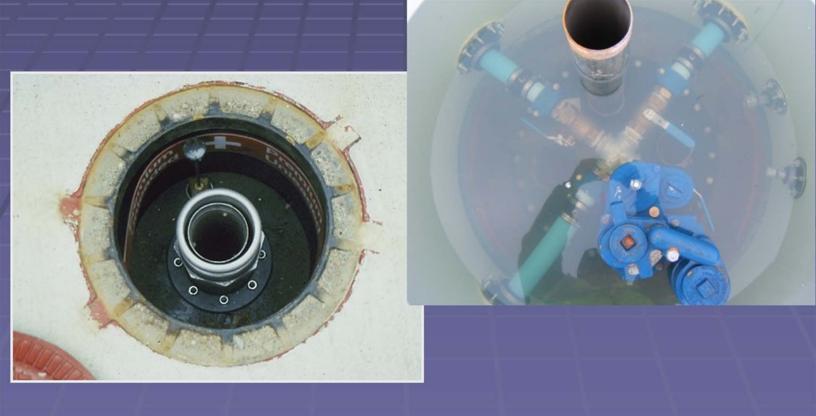
Paul Miller U.S. EPA OUST Washington, D.C.

Steve Purpora Purpora Engineering LLC Saukville, Wisconsin



Sully Curran (FTPI), Mark Morgan (PMAA) and Mike Frank (MDE) added to committee. Mike took Paul's place.

Chapter 6: Covers Spill Bucket and Containment Sump Testing

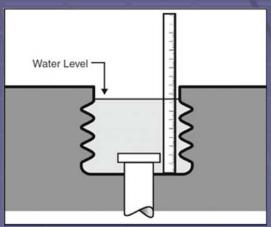


Spill Bucket Testing

- Testing spill buckets for tightness: 1st routine test is not yet required in most "SPA" States. EPA regs in "NON-SPA" States require 1st test by 10/13/18.
- When rules go into effect, follow manufacturer's guidelines, PEI RP 1200 or state standard (if developed).
- New spill buckets installed on or after the onset of the new rules will need to be tested at installation and then periodically after that if they are not DW and not being monitored. SW spill buckets will need to be routinely tested.
- Testing is not applicable for stage I vapor recovery spill buckets (per EPA), however, that requirement may vary at the state level.





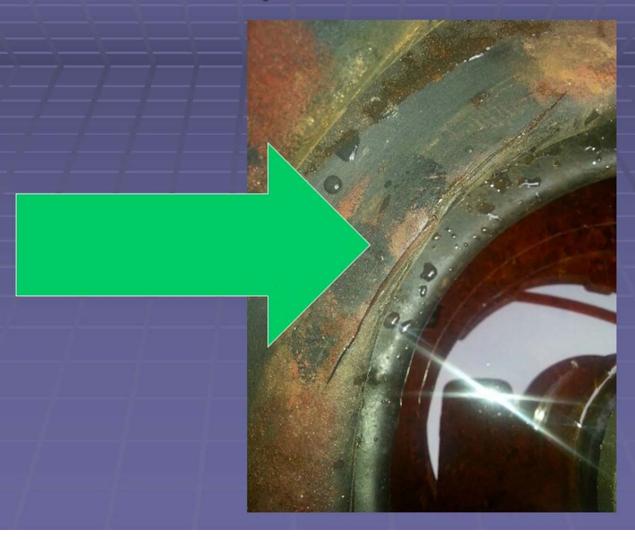


Spill Bucket Test (Primary): Hydrostatic

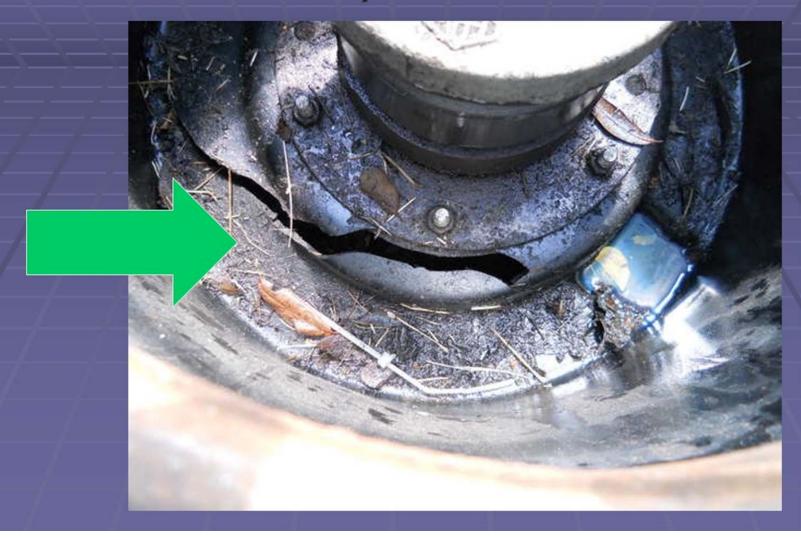


Spill Bucket Test (Primary): Hydrostatic

- RP 1200: (hydrostatic)
- Clean, inspect and repair defects
- Fill cap and adapter seal tightly (or use plumber's plug)
- Drain valve leak tight (or permanently removed)
- Fill with water to within 1.5 inches of top
- Measure water depth to within 1/16 inch
- Wait one hour
- Water level must drop less than 1/8 inch







Some Buckets Are Difficult to Inspect...



Some Buckets Are Difficult to Inspect...



Some Buckets Are Difficult to Inspect...



Fill to Within 1.5" of the Top of the Bucket





Test
Documentation:
PEI RP 1200
Provides Sample
Forms

Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities

		i	APPENDIX C	3		
		JCKET INTEGRIT				
Facility Name:			Owner:			
Address:			Address:			
City, State, Zip Code:			City, State, Zip Code:			
Facility I.D. 2:			Phone II:			
Testing Company:			Phone I:		Date:	
		frity of single- and o lied vacuum test m				
Tank Number						
Product Stored						
Spill Bucket Capacity						
Manufacturer						
Construction	Single-welled Double-welled	Single-walled Double-walled	Single-walled Double-walled	Single-walled Double-walled	Single-welled Double-welled	Single-walled Double-walled
Test Type	☐ Hydrostatic ☐ Vacuum ☐ Single-walled ☐ Double-walled	☐ Hydrostetic ☐ Vecuum ☐ Single-welled ☐ Double-welled	☐ Hydrostatic ☐ Vacuum ☐ Single-walled ☐ Double-walled	☐ Hydrostatic ☐ Vacuum ☐ Single-walled ☐ Double-walled	Hydrostatic Vacuum Single-walled Double-walled	☐ Hydrostatic ☐ Vacuum ☐ Single-walled ☐ Double-walled
Spill Bucket Type	☐ Product ☐ Vapor	☐ Product ☐ Vepor	☐ Product ☐ Vapor	☐ Product ☐ Vapor	☐ Product ☐ Vepor	☐ Product ☐ Vapor
Liquid and debris removed from spill bucket?*	□Yes □No	□Yes □No	□Yes □No	□Yes □No	□Yes □No	□Yes □No
Visual Inspection (No cracks, loose parts or separa- tion of the bucket from the fill pipe.)	□ Pess □ Feil	□ Pass □ Fail	□ Pess □ Feil	□Pess □Feil	□Pess □Feil	□ Pass □ Fai
Tank riser cap included in test?	□Yes □No □NA	□Yes □No □NA	□Yes □No □NA	☐ Yes ☐ No ☐ NA	□Yes □No □NA	□Yes □No □NA
Is drain valve included in test?	□Yes □No □NA	Yes No	□Yes □No □NA	Yes No	Yes No	Yes No
Starting Level						
Test Start Time						
Ending Level						
Test End Time						
Test Period						
Level Change						
	fuet nace viewal inc	pection, Hydrostati	o: Wister level denn	of lass than 1/9 in	th: Vacuum single.	valled only:
		mn; Vecuum doub				resea only.
Tost Results	□ Pass □ Fail	□ Pess □ Feil	☐ Pass ☐ Fail	□Pess □Feil	□ Pass □ Fail	□ Pass □ Fai
Comments:						
All liquids and deb fester's Name	ris must be dispose	ed of properly.	Teste	er's Signature _		

Spill Bucket Test (Primary): Vacuum Test



Spill Bucket Test (Primary): Vacuum Test

- RP 1200: (vacuum)
- Clean, inspect and repair defects
- Fill cap and adapter seal tightly (or use plumber's plug)
- Drain valve leak tight (or permanently removed)
- Seal test cover to top of spill bucket
- Apply vacuum of 30 inches water column
- Hold for one minute
- If ending vacuum is 26 inches or greater, test passes

Spill Bucket Test (Primary): Vacuum Test



Spill Bucket Test (Primary): Vacuum Test



Spill Bucket Test (Primary): Vacuum Test



Spill Bucket Vacuum (Outer Wall if DW)

- RP 1200: (vacuum)
- Clean, inspect and repair defects
- Attach to secondary access point
- Apply vacuum of 15 inches water column
- Hold for one minute
- If ending vacuum is 12 inches or greater, test passes

What About DW Buckets (not monitored)?
Test of Primary Acceptable? (MD = No)
Must Test Interstitial? (MD = Yes)
Other state's interpretations???





If the bucket is DW and monitored monthly = no test (per feds)
FL = must test every 3 years
MD = test interstitial annually
Other states???







If the bucket is DW and monitored with a gauge, will that gauge need to be checked for proper operation?

DE = yes FL = yes

DE = yes FL = yes Other states = ???



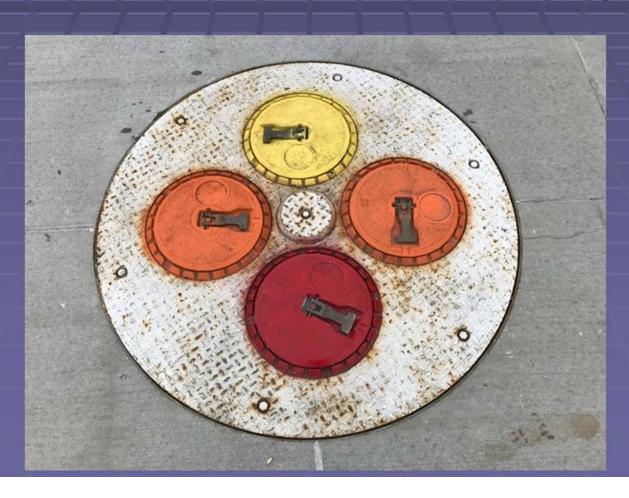
What About Stage I Vapor Recovery Buckets? EPA = No MD = Yes Other States = ??



What About Testing Spill Buckets Contained in a Sump?



What About Testing Spill Buckets Contained in a Sump?



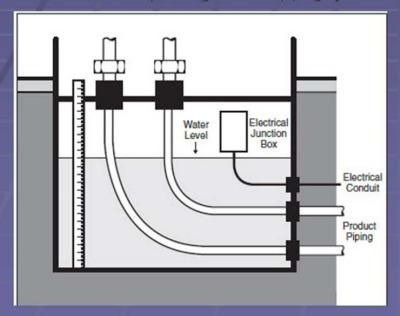
QUESTIONS on Spill Buckets?



Containment Sump Testing

Currently, there is no periodic testing of sumps required in most states...

- According to the new federal UST regulations, owners using interstitial monitoring for release detection on their DW piping will need to test their SUMPS & UDC'S for tightness every 3 years to comply with the new federal UST regulations
- If testing, follow manufacturer's guidelines, PEI RP 1200 or state standard; or
- Use a double wall sump/UDC and monitor the interstitial space of the sump/UDC monthly (and document)
- **For new UST Systems, this will need to be done at installation
- Certain states mandate interstitial monitoring for the piping after a certain date which in turn will
 mandate sump testing for those piping systems.

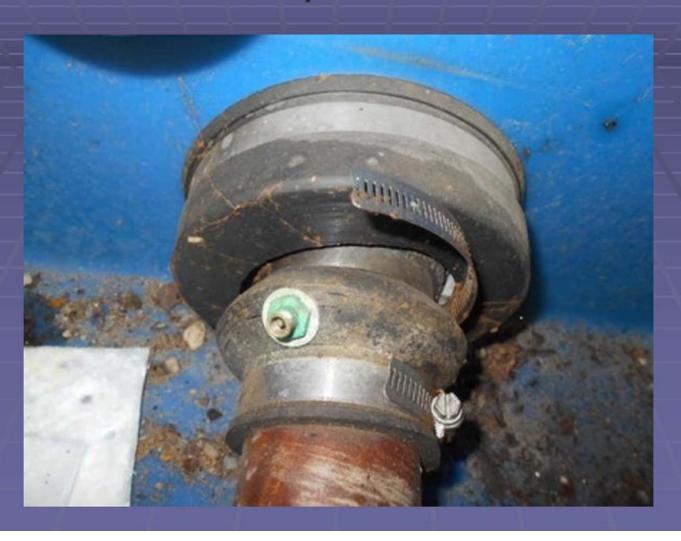


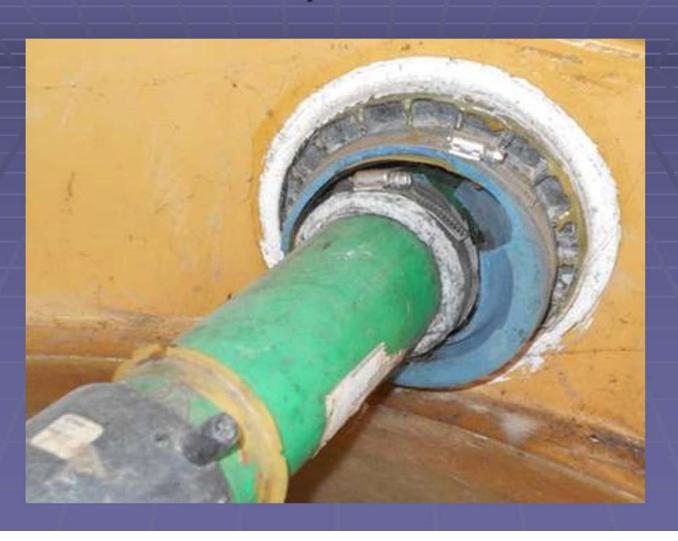


Containment Sump Testing: Industry Standard PEI RP 1200

- RP 1200: (hydrostatic)
- Clean, inspect and repair defects
- Seal off piping interstitial
- Remove sensor
- Fill with water to 4" above highest penetration or sidewall seam
- Measure water depth to within 1/16 inch
- Wait one hour
- Water level must drop less than 1/8 inch









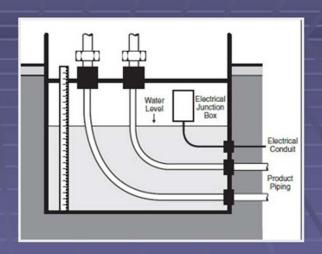


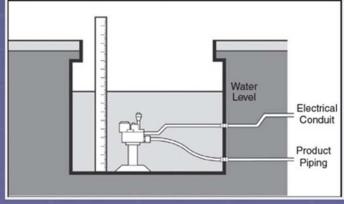




Piping Containment Sump Testing (Tank & UDC): PEI RP 1200



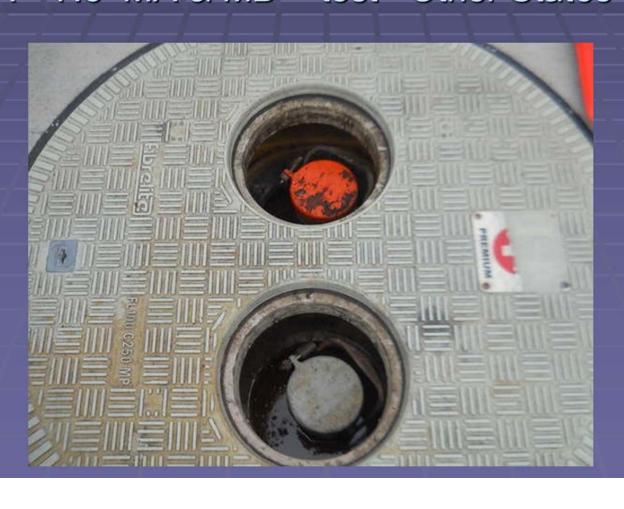




Test
Documentation:
PEI RP 1200
Provides Sample
Forms

		APF	ENDIX C-4						
	c		UMP INTEGRIT						
Facility Name:			Owner:						
Address:			Address:						
City, State, Zip Code:			City, State, Zip Code:						
Facility I.D. #:			Phone 2:						
Testing Company:			Phone II:		Date:				
This procedure is to test t	the last interview	f and invested from		200 Castina C 5 6					
	the lean integrity o	oontainment sui	nps, see re(nrs	200, 36000n 6.0 I	or the test method				
Containment Sump ID Containment Sump Material									
Liquid and debris removed from sump?*	Yes No	□Yes □No	Yes No	Yes No	□Yes □No	Yes No			
Visual Inspection (No cracks, loose parts or separation of the containment sump.)	□Pess □Feil	□Pess □Feil	□ Pess □ Feil	□Pess □Feil	□ Pass □ Fail	□ Pass □ Fail			
Containment Sump Depth									
Height From Bottom to Top of Highest Penetration									
Starting Water Level									
Test Start Time									
Ending Water Level									
Test End Time									
Test Period (Minimum test time: 1 hour)									
Water Level Change									
Pass/fail criteria: Must pa	ass visual inspection	on. Water level dro	op of less than 1/8	inch.					
Test Results	□Pess □Feil	□ Pess □ Feil	☐ Pess ☐ Feil	□ Pess □ Feil	☐ Pess ☐ Feil	□ Pess □ Fei			

What about testing a sump that contains spill buckets but no piping? EPA = No MA & MD = test Other States = ??



What about testing a sump that contains spill buckets but no piping? EPA = No MA & MD = test Other States = ??



QUESTIONS on Sump Testing?



Crompco Hydro Testing Solution – "Water Wagons"



Crompco Hydro Testing Solution – "Water Wagons"



Crompco Hydro Testing Solution – "Water Wagons"



Crompco Hydro Testing Solution -Potable Water at Yard for **Quick Water** Wagon Filling With Clean Water



Crompco Hydro Testing Solution – 5,000 Gallon "dirty water" Trailer Used for Water Storage for Disposal



QUESTIONS on Water Handling?



What have we learned from experience in another state when containment testing was first mandated?



MD Wrote a Protocol on 4/26/05 Which is Very Similar to PEI RP 1200 (just updated 3/9/17)

http://www.mde.state.md.us/programs/Land/OilControl/FactSheetsPublications/Pages/Programs/Land/ Programs/Oil Control/FactsheetsPublications/index.aspx



MARYLAND DEPARTMENT OF THE ENVIRONMENT

Oil Control Program, Suite 620, 1800 Washington Blvd., Baltimore MD 21230-1719 410-537-3442 • 410-537-3092 (fax) 1-800-633-6101 http://www.mde.state.md.us

Maryland Containment System Testing Protocol

Introduction

Recent (January 26, 2005) changes to Code of Maryland Regulations (COMAR) 26.10, Oil Pollution and Tank Management, establish requirements for the testing of underground storage tank (UST) system spill catchment basins and release containment sumps to ensure this equipment is not leaking. Specifically, these optional testing protocols were developed by the Maryland Department of the Environment (MDE) for spill catch basins (a.k.a. spill buckets) and containment sumps. The Department recognizes that this protocol is not necessarily the only method that can be used to determine the tightness of this equipment. There are electronic and vacuum methods available that may be more accurate than the process outlined in this protocol. However, before an alternative method can be used, the proposed testing method must be provided in detail to the Department for our review and approval. The Department further recommends that basin and sump testing be performed in conjunction with other UST compliance testing activities. After the initial test, the spill catchment basins are required to be tested yearly and containment sumps every five years.

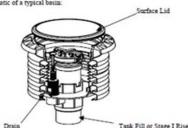
Who can perform the test:

The individual performing the inspection and testing as outlined in this protocol must be either:

- A certified UST technician in compliance with COMAR 26.10.06:
- A Maryland certified UST inspector in compliance with COMAR 26.10.06; or Employed by an UST testing company recognized by MDE as indicated on the list of approved
- UST tests methods authored and updated by MDE.

Containing the inevitable small spills that occur in the transfer of fuel from the tanker truck to the UST was the driving force behind the requirement for spill catchment basins (a.k.a. spill buckets). This requirement is stated in COMAR 26.10.03.03. Under COMAR 26.10.03, Maryland requires spill catchment basins (basins) on every tank installed on or after December 22, 1988. For tanks installed prior to that date, owner/operators had until December 1998 to have them in place. Thus, in Maryland it is possible that some basins have been in the ground for seventeen or more years. On July 1, 1998 Maryland further amended COMAR and required the installation of basins on the Stage I vapor recovery connections of gasoline storage tanks and the fill pipes for used oil storage tanks (COMAR 26.10.03.03.C

The following is a schematic of a typical basin



(Diagram taken from the EPA-OUST document "MUSTs for USTs")

The MDE testing procedure describes the protocol in detail. Important facts to consider with this test are:

- 1) The basins are hydrostatically tested:
- Care must be taken to isolate loss through the drain;

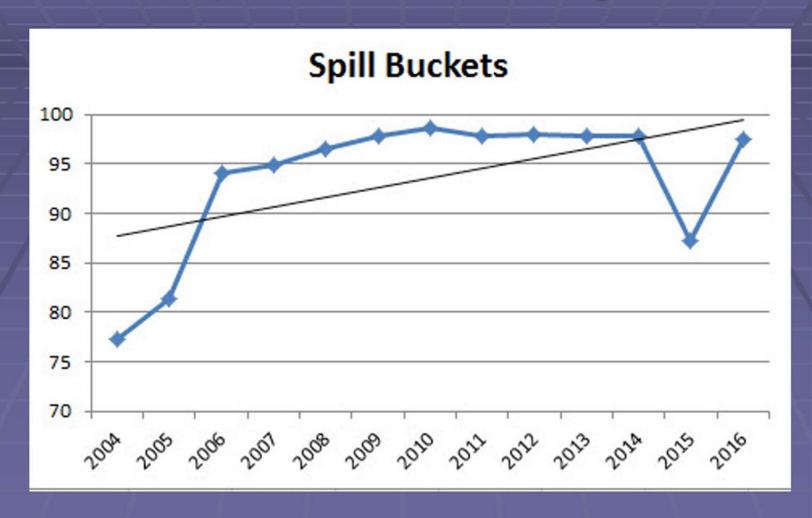
 The standard for declaring a failure is 1/8 inch or greater loss of water within one hour (which is equal to a leak rate of 0.05 gallons per hour in a typical 12-inch diameter basin).

It is important to understand that basins were neither intended nor designed for the storage of petroleum product, but rather to contain a small spill. The clear intent is that any spilled product would be immediately removed and either returned to the tank or properly disposed. Although it is a violation of COMAR 26.10.04.01B, it is very common to find petroleum product in the basin.

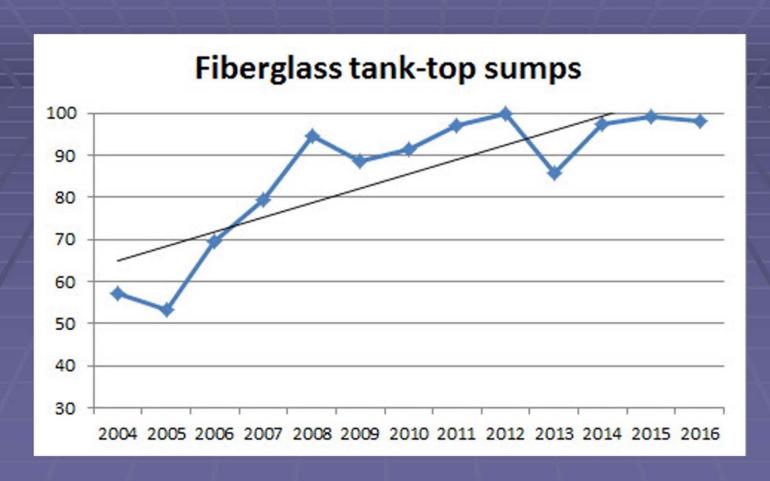
SPILL CATCHMENT BASINS HYDROSTATIC TEST

- This test cannot be performed in the rain or in freezing weather conditions
- Basins must be inspected for debris and liquid content. If liquid content is found to include significant petroleum product, the product must be removed. Any accumulation of debris (leaves, rash and sediment) encountered in the basins must be removed for proper disposal.
- make necessary replacements.
- Examine the basins for damage. A damaged basin should not be tested but recorded as a failure and arrangements made for repair or replacement
- The basin drain must be secured against possible leaks. This involves one of the following

MD Spill Bucket Testing Data

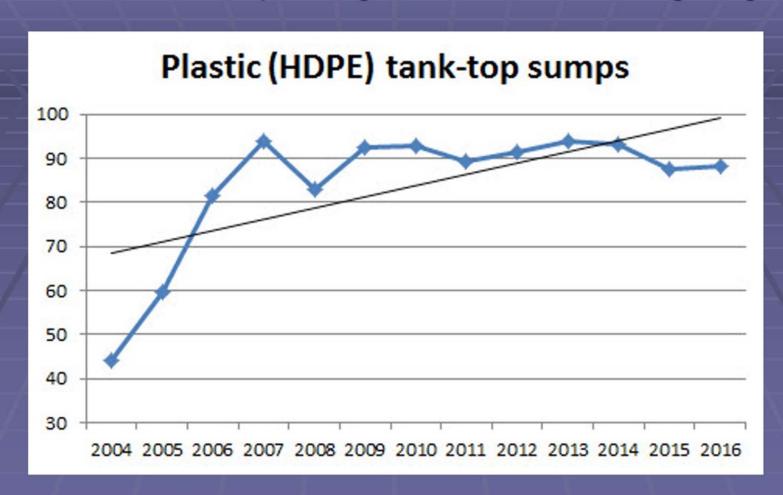


Containment Sump Testing Will Be Painful in the Beginning



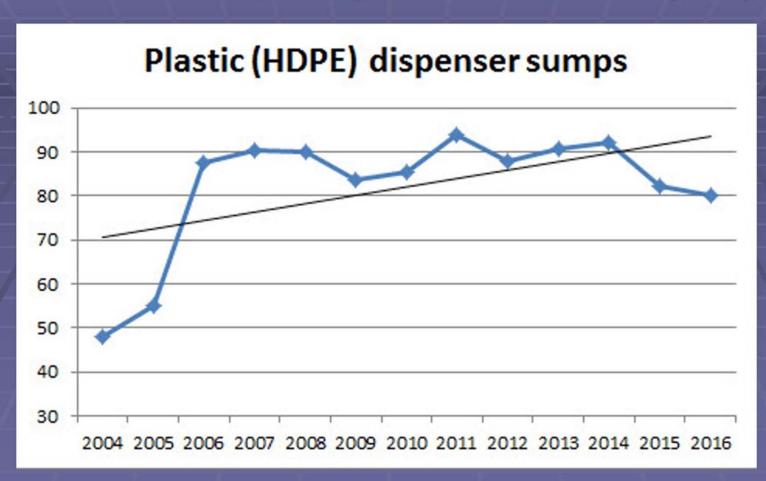
Here's what MD test data looked like when they first started testing containment sumps back in 2005/2006 with their new rules.

Containment Sump Testing Will Be Painful in the Beginning



Here's what MD test data looked like when they first started testing containment sumps back in 2005/2006 with their new rules.

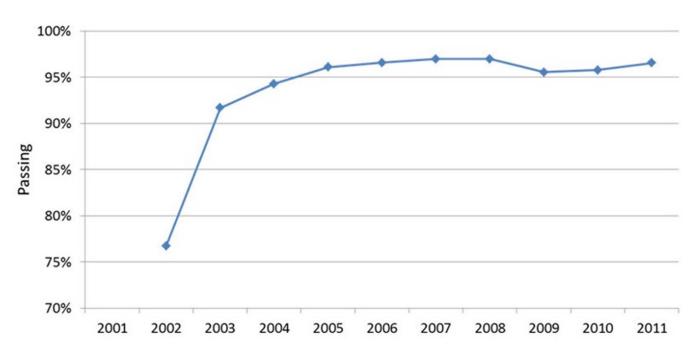
Containment Sump Testing Will Be Painful in the Beginning



Here's what MD test data looked like when they first started testing containment sumps back in 2005/2006 with their new rules.

Tanknology Data (Bill Logue @ NECSEMA 3/16/16)

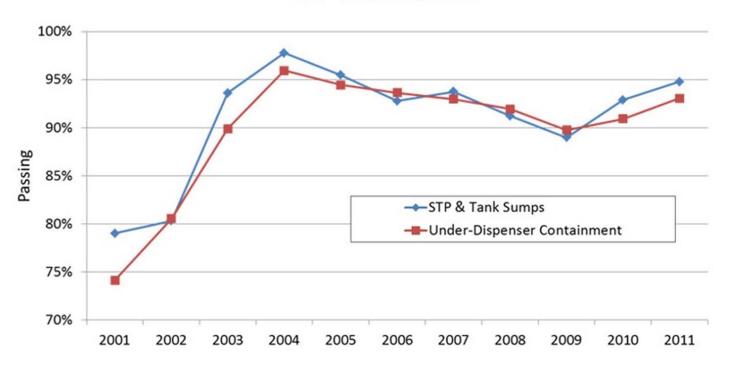
Spill Containers in California





Tanknology Data (Bill Logue @ NECSEMA 3/16/16)

Tank Sumps and Under-Dispenser Containment in California





Will Other States Consider Low-Level Containment Sump Testing? MA DEP did!!

80.27: continued

- (b) The Owner or Operator shall remove and manage solid and liquid material from the sump in accordance with all applicable federal, state and local laws and regulations.
- (c) The Owner and Operator shall repair and replace components as necessary in accordance with 310 CMR 80.33.
- (d) The Owner or Operator shall keep records of inspections, repairs and replacements to demonstrate compliance with 310 CMR 80.27(5) and (6) in accordance with 310 CMR 80.36(1) and (5).
- (7) The Owner or Operator shall test turbine, intermediate and dispenser sumps on or before January 2, 2017 in accordance with 310 CMR 80.27(8).
 - (a) Sumps with a sensor shall be tested hydrostatically to the level that will activate the sensor or by vacuum testing.
 - (b) Sumps that do not have a sensor shall be tested hydrostatically to the top of the sump or by vacuum testing.
- (8) The Owner or Operator shall test the sumps and the sumps shall pass an integrity test in accordance with the schedule at 310 CMR 80.27(7) to ensure the sump is liquid tight by using vacuum or hydrostatic testing. The standard for declaring a failure is 1/8 inch or greater loss of water within one hour (which is equal to a leak rate of 0.05 gallons per hour in a typical 12-inch diameter basin).
 - (a) If the sump fails a test, the Owner or Operator shall investigate the failure and shall make any necessary repairs in accordance with 310 CMR 80.33.
 - (b) The Owner or Operator shall keep records of this test to demonstrate compliance with 310 CMR 80.27(7) and (8), including but not limited to the date of the test and the results, in accordance with 310 CMR 80.36(1).

Containment Sump & Spill Bucket Testing Data in MA for 2015

Test Results	Total Tested	% Pass	Total Pass	% Fail	Total Failed	% Other	Total Other
		Dispens	ser Pans				
Fiberglass dispenser sumps	1	100.00	1	0.00	0	0.00	0
Plastic (HDPE) dispenser sumps	58	93.10	54	6.90	4	0.00	0
		Sur	mps				
Fiberglass tank-top sumps	16	81.25	13	18.75	3	0.00	0
Plastic (HDPE) tank-top sumps	34	100.00	34	0.00	0	0.00	0
	ß	Spill B	uckets				
Spill Buckets	90	95.56	86	4.44	4	0.00	0

Containment Sump & Spill Bucket Testing Data in MA for 2016

Test Results	Total Tested	% Pass	Total Pass	% Fail	Total Failed	% Other	Total Other
		Dispens	ser Pans				
Fiberglass dispenser sumps	169	95.86	162	3.55	6	0.59	1
Plastic (HDPE) dispenser sumps	1487	92.67	1378	3.50	52	3.83	57
		Sur	mps		-t		
Fiberglass tank-top sumps	581	99.14	576	0.17	1	0.69	4
Plastic (HDPE) tank-top sumps	705	96.74	682	0.99	7	2.27	16
		Spill B	Buckets				
Spill Buckets	1700	97.71	1661	1.76	30	0.53	9

- (7) Installation requirements for leak detection and overfill/spill prevention equipment
 - (a) Leak detection and overfill/spill prevention alarms and shutoff equipment must be installed and operating prior to the start of the facility's operation and in accordance with manufacturer specifications, including proper calibration of electronic equipment.
 - (b) Piping, tank and dispenser sumps and pans must be liquid tight to an elevation at least three (3) inches above the liquid level required to activate the leak detection sensor.
 - (c) Penetrations of a sump for a piping or other sump entrance must be three (3) or more inches above the leak detection sensor activation level to ensure meeting the above tightness standard. This requirement does not apply to the bottom access hole in a tank sump for the installation of a pressurized product pump or to provide access to the tank for suction dispenser piping.
- 4. Tightness testing of tanks and piping with secondary containment. The integrity and tightness of tanks and piping with secondary containment shall be tested in accordance with sections 4 and 5 of the Petroleum Equipment Institute Recommended Practice for Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities, PEI 1200-2012 or in accordance with protocols reviewed and approved by the commissioner prior to use.
- 5. Tightness testing of sumps and overfill buckets. Sumps and overfill buckets will be tested by a method approved by the commissioner, and in accordance with testing procedures outlined in section 6 of the Petroleum Equipment Institute, Recommended Practices for Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities, PEI 1200-2012.

- Fill the containment sump to the top. It is imperative to entirely fill the sump in order to simulate the hydraulic pressure that the sump and its fittings would be subject to in the event of a product release that entirely filled the sump.
- 7. Place a rigid straight-edge across the top of the containment sump. The straight edge should be secured in place or its location marked to ensure accurate measurements. Allow the water to "settle" in the containment sump. Using a measuring device that is accurate to 1/16th of an inch, measure the distance perpendicular from the straight edge to the top of the water's surface, and record the result.
- 8. Cover the containment sump, using its lid or an alternative cover, and allow the containment sump to sit undisturbed for one (1) hour for an annual test. Tests for new installations or containment sump replacements must sit undisturbed for 24 hours.

Env-Or 406.22 Hydrostatic Tightness Test.

- (a) If a hydrostatic tightness test is performed pursuant to Env-Or 406.11(d)(3), the test shall be conducted:
 - (1) After all seams and fittings have been completed and all piping and conduits have been installed;
 - (2) At a level that is within one inch of the top of the sump;
 - (3) By recording the liquid level measurements at the beginning and end of the test;
 - (4) For a minimum of 3 hours; and
 - (5) With no addition of liquid to the sump.
- (b) A passing hydrostatic test, when conducted in accordance with (a), above, shall have no loss of liquid or observed leaks after the complete duration of the test.

(c) Motor fuel dispensers.

Motor fuel dispensers that are required to be secondarily contained in accordance with subparagraph (1)(c) of this rule or with paragraph (6) of this rule shall comply with the following:

- 1. The containment sump shall be liquid tight on the sides, the bottom and at any penetrations;
- The containment sump shall be compatible with the petroleum products stored in the UST system; and
- The containment sump shall be designed to allow for a visual inspection and access to the components of containment systems, including that used for piping, and shall be monitored in accordance with subparagraph (1)(g) of Rule 0400-18-01-.04.

If requested to perform a hydrostatic test in this state, what shall we apply? RP 1200 might not meet the regulation....

QUESTIONS on Data or Regs?



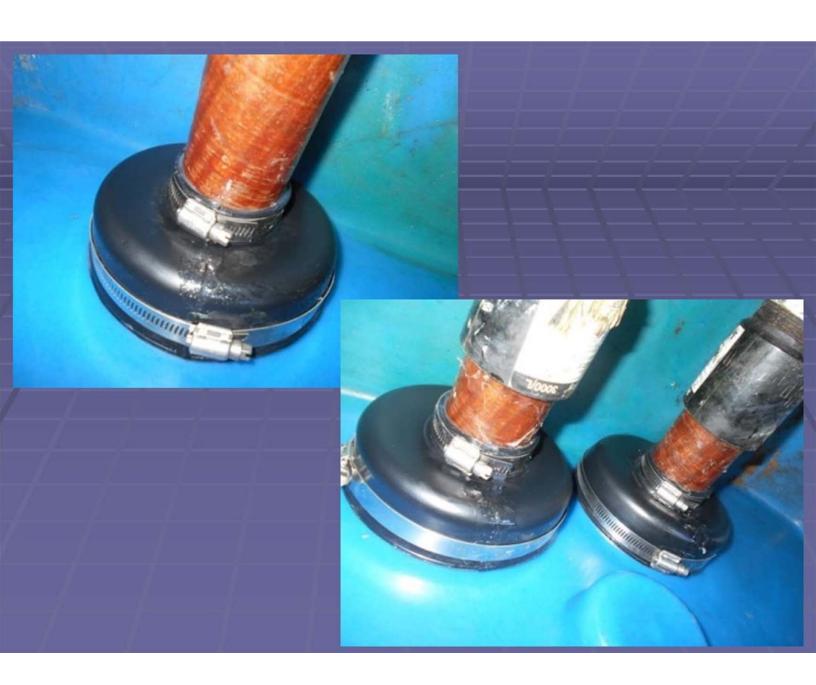
Be Prepared to Repair

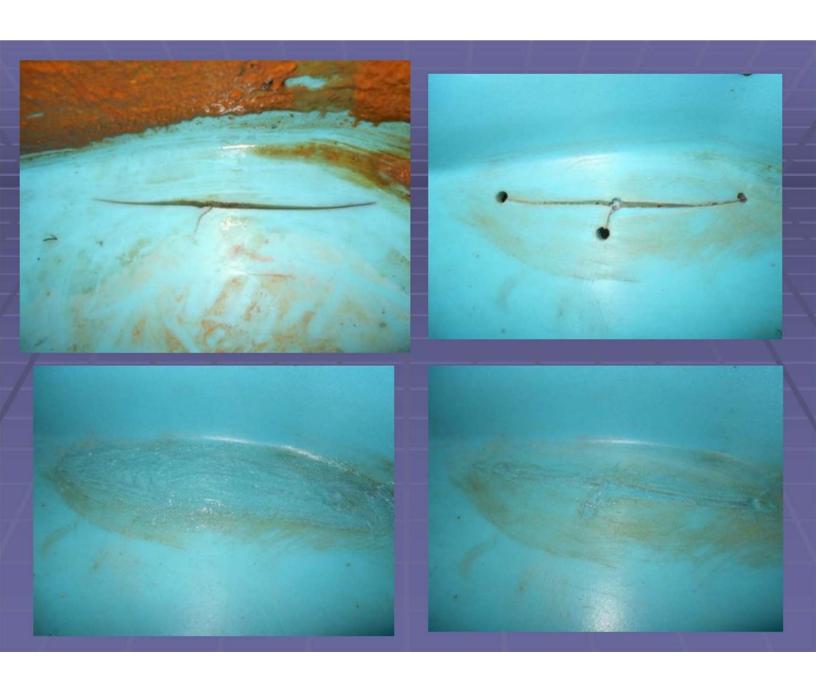














QUESTIONS on Repairs?

