

# Raising Expectations

For  
UST Installations

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# What is your UST Program's Expectations?

“Expectations” = Quality ??

Can regulations/codes alone  
produce **Quality** during  
planning & construction of  
UST facilities?

# If Expectations = Quality

How do we raise the level of expectations?  
And more important “Common Expectations”



## Project Involvement!

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# NH's Four Phases of Project Involvement

- Phase 1: Education and Outreach
- Phase 2: Project Application & Plan Submittal for Review & Approval
- Phase 3: Pre-backfill Inspection
- Phase 4: Final Inspection



# Phase 1: Education and Outreach

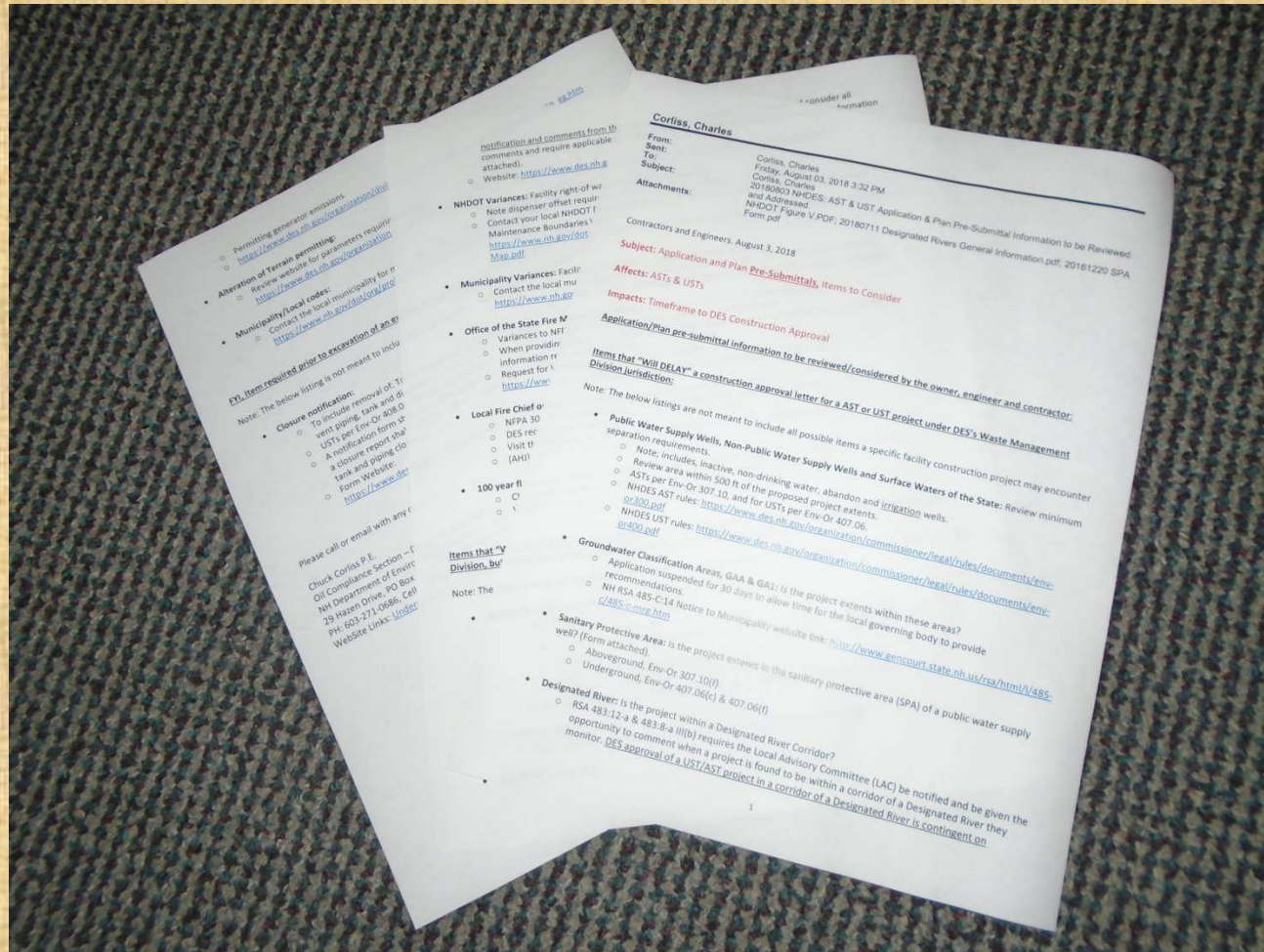
# Day to Day Correspondence



With Owners, Engineers & Contractors etc..

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# Informational Emails



## To Engineers & Contractors



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# Informational Guidance

## “Sample Plans”

### Sample Project Plans

- [Sample plans for Genset tanks greater than 660 gallons– Sheet 1 \(Revised 1/3/2018\)](#) 
- [Sample plans for Genset tanks greater than 660 gallons– Sheet 2 \(Revised 7/12/2018\)](#) 

(None yet for UST, but in the works)



# Informational Meetings



UST Contractors & Engineers Day  
First One Scheduled for February 6, 2019

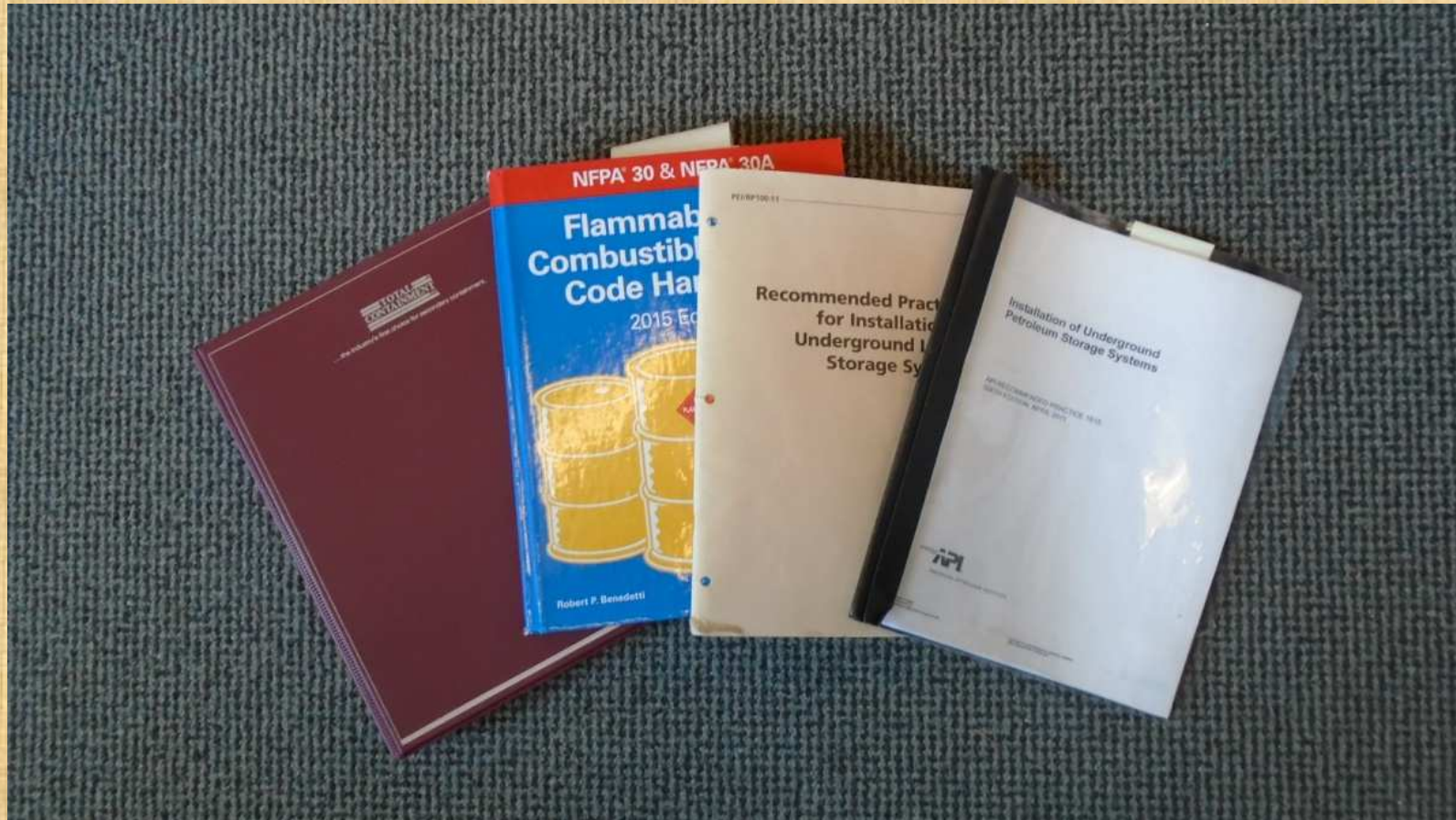
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## Phase 2:

# Project Application & Plan Submittal for Review & Approval



# Utilizing Adopted NHDES, NFPA, PEI, API, UL & NLPA Regulations/Codes



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# Project Application

Application for the Construction of New or Substantially Modified Underground Storage Tank (UST) Systems

New Hampshire Department of Environmental Services  
Waste Management Division, Oil Remediation and Compliance Bureau  
P.O. Box 95, 25 Hazen Drive  
Concord, New Hampshire 03302-0095  
(603) 271-3895, FAX (603) 271-2181

UST Application Page 1 of 4

**PLEASE REMOVE RETURNING TO THAT PLAN SET**

**PLAN GUIDANCE**

**C. UST SYSTEMS**

1. Leak monitor  
2. Primary or secondary containment  
3. Where applicable, radiolabel  
4. Pipe line overfill  
5. Piping, electrical device  
6. Piping, electrical device  
7. Piping, electrical device  
8. Piping, electrical device  
9. Piping, electrical device  
10. Piping, electrical device  
11. Piping, electrical device  
12. Piping, electrical device  
13. Piping, electrical device  
14. Piping, electrical device  
15. Piping, electrical device  
16. Piping, electrical device  
17. Piping, electrical device  
18. Piping, electrical device

**VI. SET IN A**

**III. PIPING AND STORAGE**

**D. Sumps**

1. Manufacturer  
2. Model Number  
3. Material

**E. Sump Sensor**

1. Manufacturer  
2. Model Number  
3. Material

**F. Sump Eff**

1. Manufacturer  
2. Model Number  
3. Material

**IV. SPILL TANKS**

**A. Spill**

1. Manufacturer  
2. Model Number  
3. Material

**III. LEAK LEAK**

**A. Tank**

1. Manufacturer  
2. Model Number  
3. Material

**III. P**

1. Manufacturer  
2. Model Number  
3. Material

**I. UNDERGROUND ALL TANKS**

**A. CHECK**

**B. NUMBER**

**C. Tanks**

1. Volume  
2. Tank ID  
3. Product  
4. Material  
5. Construction  
6. Owner  
7. Status  
8. Not

**Refer to the attached "Plan Guidance" to ensure plan submittals include the requested information to facilitate the review process and minimize potential delays.**

**Per RSA 407:01(a), return completed application, engineering plans, and \$100 fee to the above address. Make check payable to: NH State Treasurer.**

**Per RSA 407:01(b), the plans shall have been prepared and stamped by a New Hampshire licensed professional engineer.**

**The department will respond within 90 days of receipt of a complete application submittal. As needed, revisions or clarifications will be requested until the plans satisfactorily demonstrate compliance with applicable requirements of the UST Rules, Env-Cr 400.**

**Per RSA 146-C:71, construction or installation of a new facility or substantial modification of an existing facility shall not commence without written notice of plan approval by the department.**

**CERTIFICATION OF MUNICIPAL NOTIFICATION**

To meet the requirements of RSA 455-C:14 and/or 541-A:39, the undersigned certifies that on \_\_\_\_\_ (date), a copy of this completed application was mailed to the Town/City Clerk of \_\_\_\_\_ (where the facility is located) and \_\_\_\_\_ (signature) \_\_\_\_\_ (title).

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

**UST SYSTEM OWNER**

Owner Name \_\_\_\_\_  
Mailing Address \_\_\_\_\_  
City, State, Zip \_\_\_\_\_  
Phone Number \_\_\_\_\_  
E-Mail Address \_\_\_\_\_  
Alt. Ownership Contact (Name) \_\_\_\_\_

**UST FACILITY**

Facility Name \_\_\_\_\_  
Facility Address \_\_\_\_\_  
City, State, Zip \_\_\_\_\_  
Facility Contact Person \_\_\_\_\_  
Phone Number \_\_\_\_\_  
E-Mail Address \_\_\_\_\_

IF THIS IS AN EXISTING UST FACILITY, PLEASE PROVIDE (IF KNOWN) THE UST FACILITY NO. # \_\_\_\_\_

Form Revised: January 2014

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# Detailed Project Plans



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# Detailed Project Plans



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# Fuel System Components



# Offsets! Wells - Brooks - Buildings - Doorways

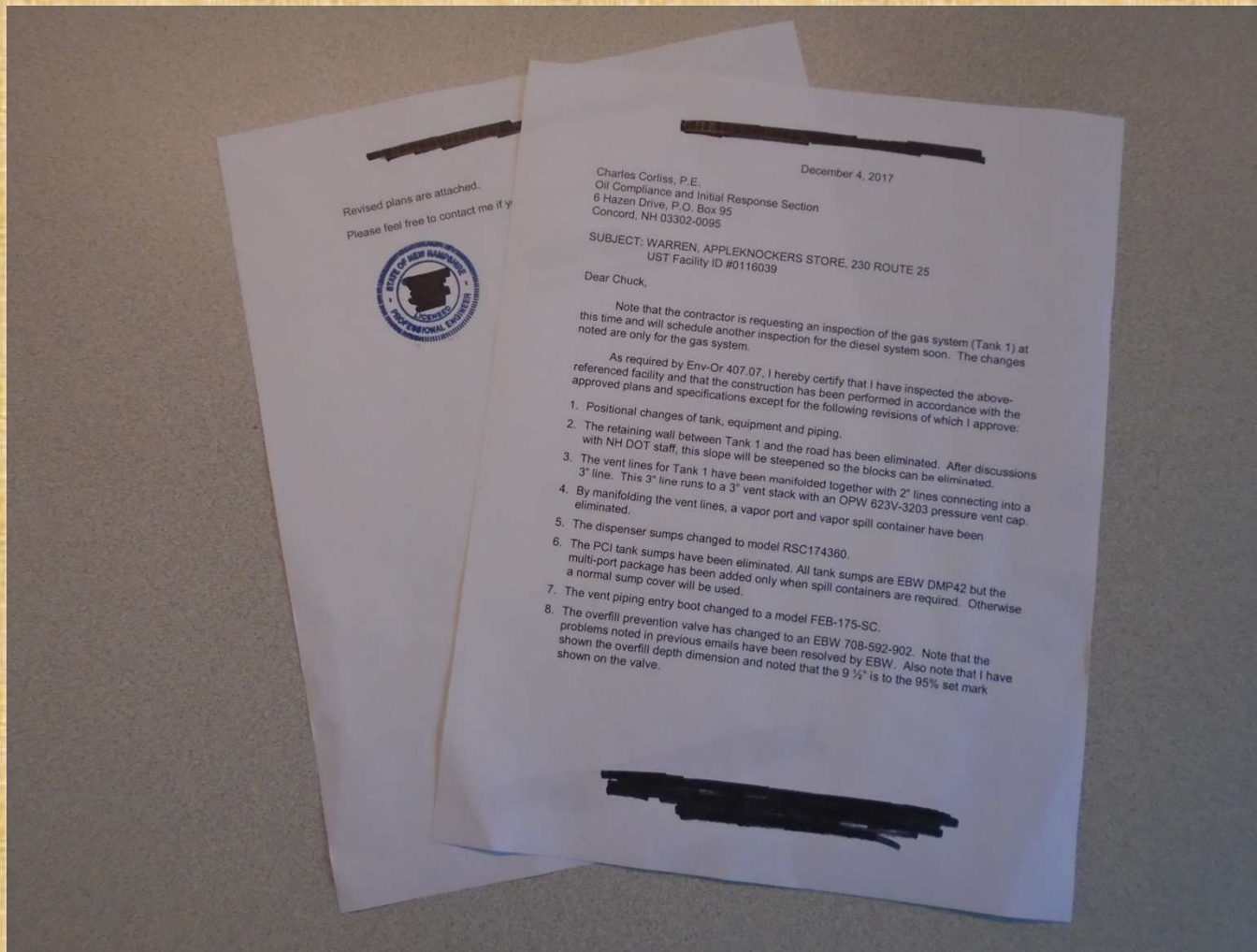
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# Construction Approval Letter



# Phase 3: Pre-Backfill Inspection

# Engineer's Letter of Completeness



# Contractor Requirements



New Hampshire Requires an  
ICC Certified UST Installer “U1”

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# Site Inspection



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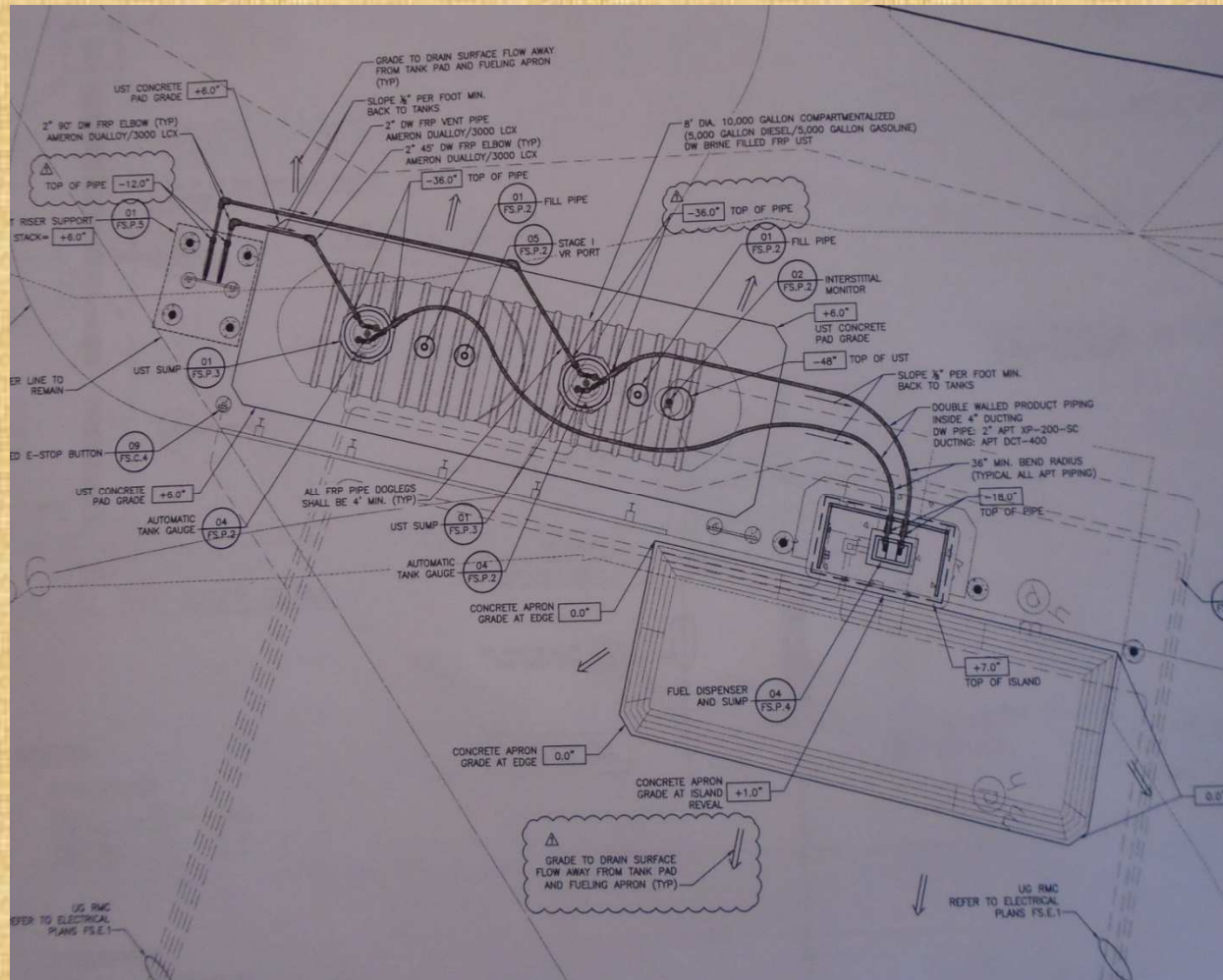


# Does the Overall Layout Match the Plans?



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# Do the Components Match the Plans?



## Manufacture – Model

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# Tightness Testing: Results of Sump and Piping System

- Sumps = 1”  
from the top for  
3 hrs





# Bring a 4 ft Level!



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# Vent Pipe Slope



1/8" per ft  
Sloping Back to the Tank

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# Product Pipe Slope



1/8" per ft  
Sloping Back to the Tank

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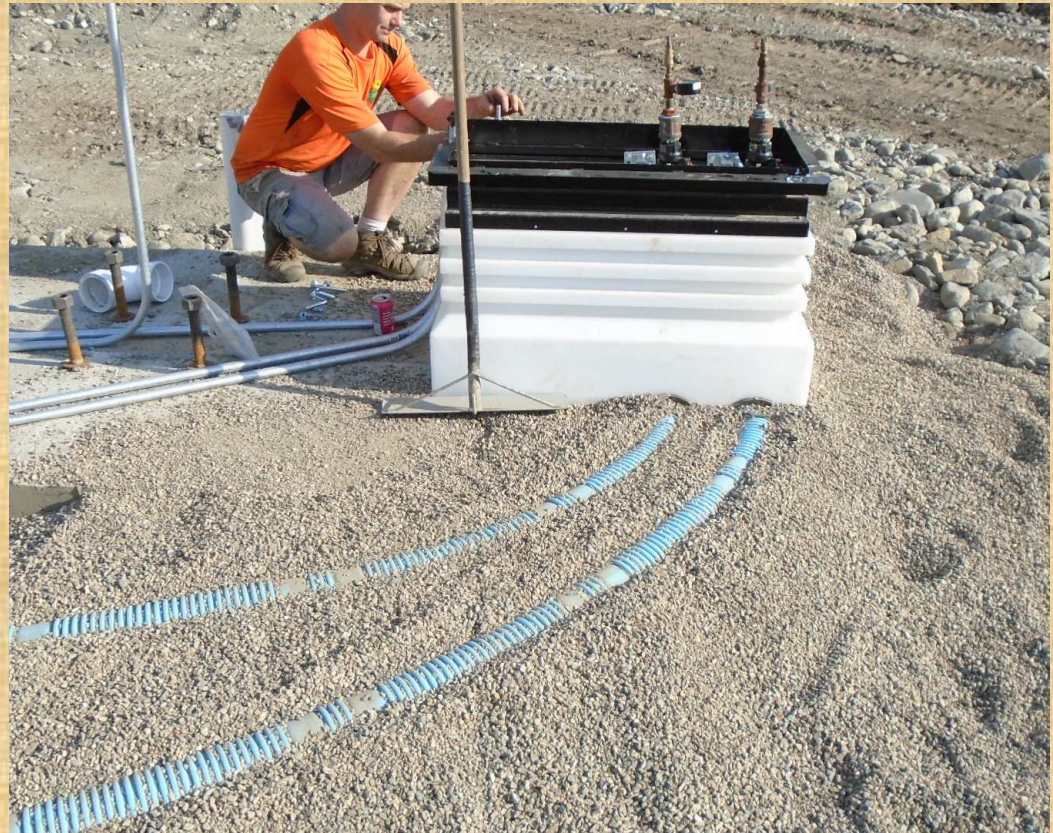
# Corrosion Protection of Riser Pipes





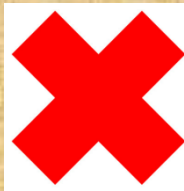
# Sump and Pipe Inspection

- Burial Depth
- Pipe Spacing
- Bedding Material





# Correct Installation of Product Pipe



Contractor Failed to Remove Scuff Guard



# Entry Boots Installed Correctly ?



➤ No Sealants Allowed! Compatibility Concerns

# Shear Valve Placement



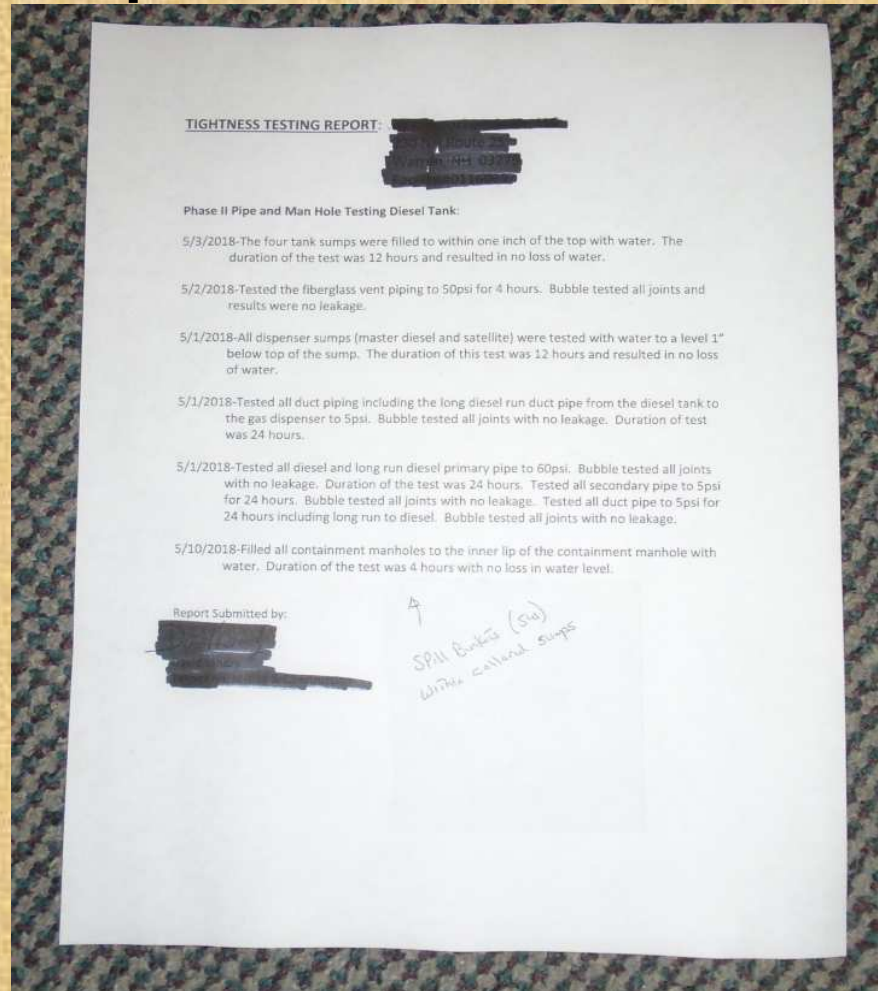
Flush with Shear Plane!

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# ICC Contractors Tightness Testing Report

- Dated
- Duration/Time
- Pressure/psi
- Signed



# Phase 4: Final Inspection

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Conference



# Automatic Tank Gauge (ATG)



- Physically Verify for 90% Alarm Activation
  - Visual & 10 Second Audible Alarm

# Drop Tube Valves



- Physically Verify 95% Setting
  - Emco & OPW Valves



# Vent Stacks

- Heights?
- Secured?
- Wires?
- Corrosion?
- Protection?





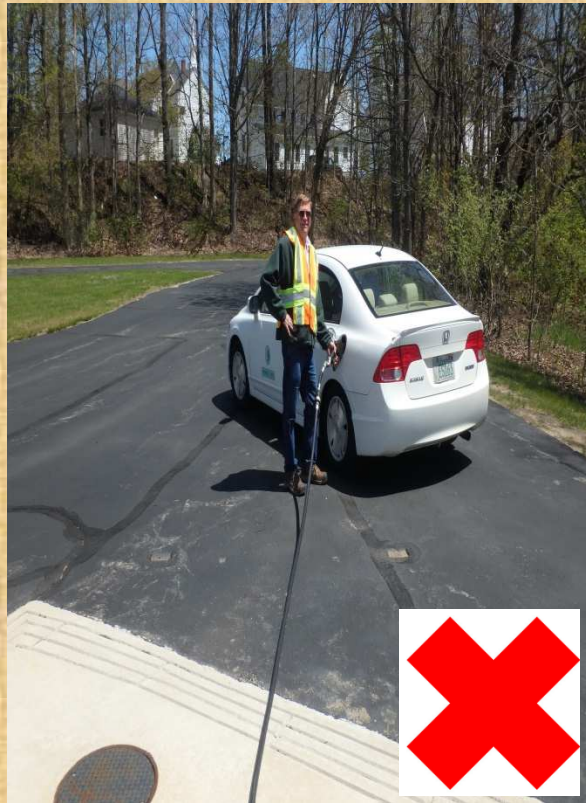
# Concrete Dispensing Pad



➤ Positive Limiting Barriers (PLBs)



# Dispensing within Dispensing Pad



➤ Check Nozzle Reach!

# Dispensing Pad Joints



➤ Seal the Joints !

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# Why Seal the Joints ?



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# Sump Components



Pull Back Tightness Testing Boots

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# System Leak Detection



01/12/16 1:27 PM  
CIRCLE K 7213  
885 WHITE MTN HGY  
OSSISPEE NEW HAMPHIRE

Device Setup - Liquid Sensor Report

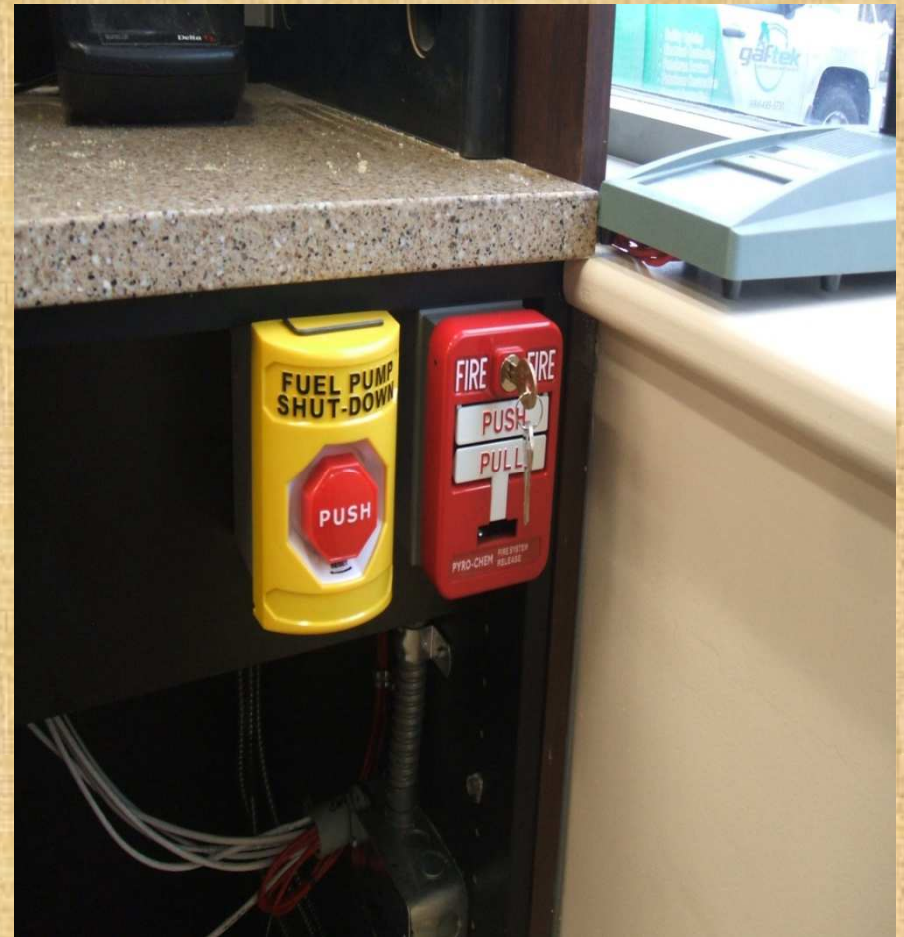
LIQUID CONFIGURATION

DEVICE	LABEL	CONFIGURATI
1	DISP 1-2 BRINE	ON
2	DISP 1-2 SUMP	ON
3	DISP 3-4 BRINE	ON
4	DISP 3-4 SUMP	ON
5	DISP 5-6 BRINE	ON
6	DISP 5-6 SUMP	ON
7	DISP 7-8 BRINE	ON
8	DISP 7-8 SUMP	ON
9	DISP 9-10 BRINE	ON
10	DISP 9-10 SUMP	ON
11	YARD SUMP BRINE	ON
12	YARD SUMP	ON
13	REGULAR MASTER BRINE	ON
14	SNL-DIESEL BRINE	ON
15	REGULAR SIPHON BRINE	ON
16	REGULAR STP SUMP	ON
17	SUPER STP SUMP	ON
18	DIESEL STP SUMP	ON
19	REGULAR SIPHON SUMP	ON
20		ON
21		OFF
22		OFF
23		OFF
24		OFF
25		OFF
26		OFF
27		OFF
28		OFF
29		OFF
30		OFF

## Check all Sensors !

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# Emergency Stops and Signage





# Safety Items

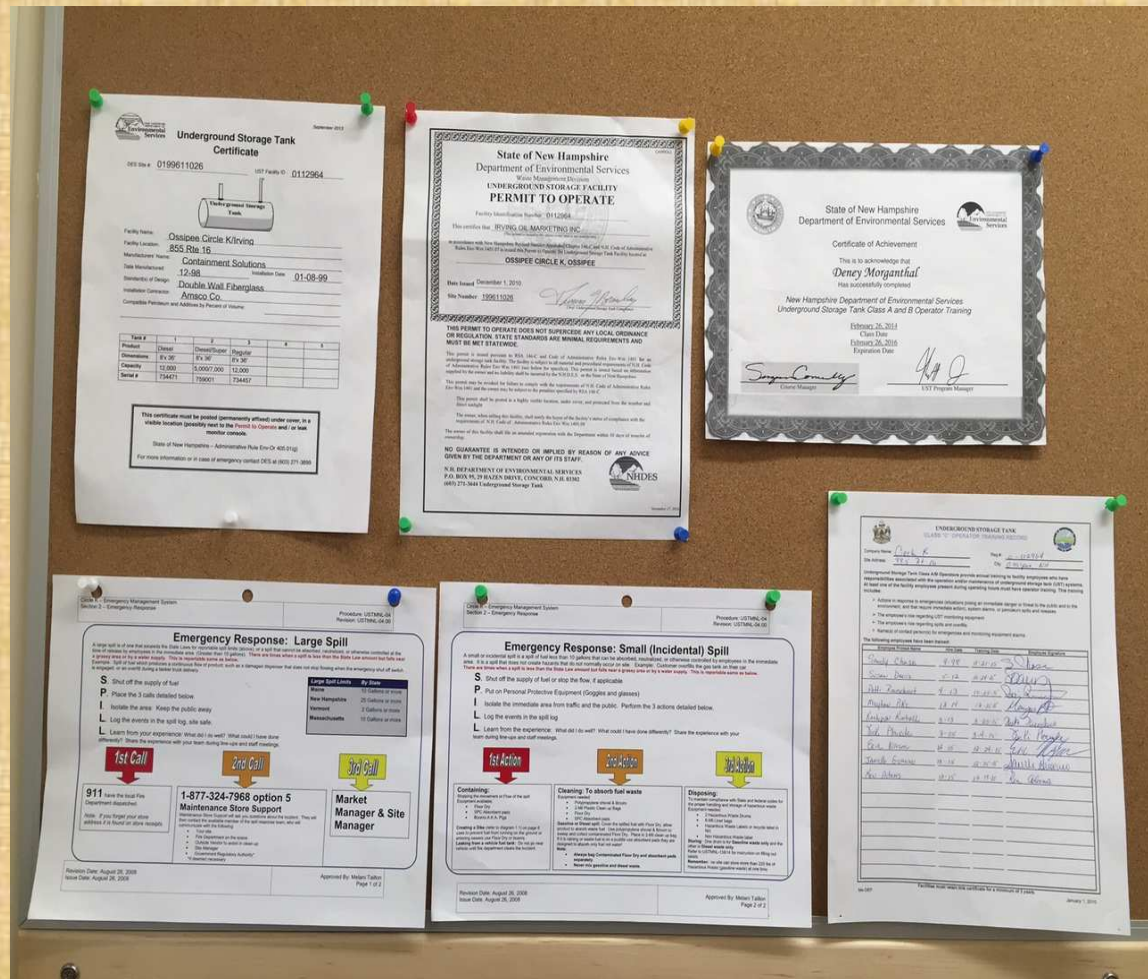


- Break-Away
- Fire Extinguisher
- Signage

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# Informational Postings

- Spill Response
- Tank Chart
- Class C Operators



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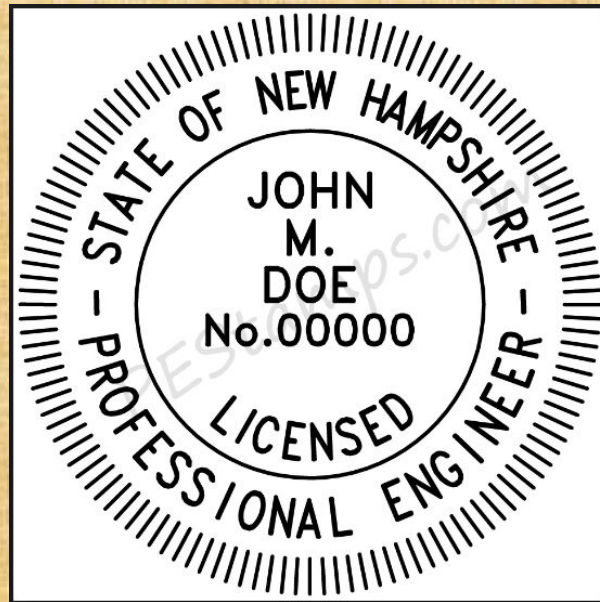
# Obtain Owners Signoff

VII. Certification		
As facility owner I certify under penalty of law that I have personally examined and am familiar with the information submitted in or with this registration form, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I understand that I am subject to the penalties specified in RSA 641:3 for making unsworn false statements.		
Print Name and Title of Owner:	Signature:	Date Signed:

## and Installers or N.H. P.E.'s Signoff

XI. Final Certification. (For installations requiring construction approval per Env-Or 407.01)			
Final certification may be completed by either a New Hampshire PE or the ICC certified tank installer. Final certification shall only be provided at the time of registration if the installation is complete. Otherwise, final certification may be provided via separate letter when the installation has been completed.			
I certify that the installation has been completed and is in accordance with the department's approved plans or as-built record drawings and all terms and conditions of the department's approval. [Env-Or 404.03(i)]			
Signature _____		Date: _____	
Print Name _____			
NH PE: _____	OR,	ICC: _____	
License Number _____	Expiration Date _____	Certification # for UST Installation/Retrofitting _____	Expiration Date _____

# As-Built Plans



Signed & Dated!



# In Summary

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Start to End Project Involvement

= Expectations

= Quality



# Avoid.....

Costly Field Changes...\$\$\$\$\$\$\$



## And Having Chronic Compliance Issues Following Operational Approval

# Contact Information

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NH DES

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