

Response to MAPDA Comments

MAPDA Comment 1

Part A, 4.1.7 - .8 – We strongly object to DNREC’s suggestion that water be used as ballast for testing. UST owners spend a considerable amount of money and time trying to keep water from ever entering their tanks, and feel it is not appropriate to fill them with water before use. We believe fuel is required for testing and / or commissioning the UST system; yet owners do not receive registration until after testing is submitted to the Department. We believe hold down loads utilized for the testing / commissioning of fuel systems should be allowed prior to registration. We recommend replacing “valid registration certificate” with “valid financial responsibility” to accomplish this goal.

In our members’ experience, other jurisdictions allow fuel product to be placed into the tank to ballast. Most of our members have a general policy (or are self-insured) that covers all of the tanks, regardless. We urge DNREC to review this provision with other jurisdictions and the insurance industry to determine a responsible way to proceed.

Department Response:

In the most recent draft of the regulations, Sections Part A, 4.1.7 and 4.1.8 have been deleted. The Section that governs this situation is” Part F 1.1.12 and it contains the language that “valid financial responsibility” must be in place prior to fuel being added to the UST system.

Part F 1.1.12 No UST Systems shall contain a Regulated Substance without a current and valid financial responsibility mechanism in accordance with the applicable requirements of these Regulations.

MAPDA Comment 2

Part A, Section 4.7 – We believe “repair” should be removed from this section. By definition, a repair does not require testing, nor notification or approval from the Department. This section should be limited to retrofits and upgrades, which would require testing to place the UST system back into service. In our members’ experience, other states do not require notification for repairs, including replacing malfunctioning parts such as leak detectors, boots, pressure vapor caps, drop tubes, and spill buckets.

It would be impractical to notify the department of all repairs to these complex systems and impossible for the department to respond to all of them in a timely manner. This provision creates an unnecessary delay in minor repairs that could otherwise be made easily and immediately and return the site to operation. While we appreciate the willingness of DNREC to work with UST owners in emergency situations, we feel that requiring two days of notification is impractical. In every emergency situation, the UST owner will be out of compliance with the notification requirements and completely dependent on the goodwill of the Department to make an exception and not seek enforcement.

Department Response:

DNREC’s rationale for requiring prior approval of certain types of repairs including those that will require system testing or a site assessment (sampling) is to ensure that the proper equipment is

being installed, and to clarify for owners and contractors the type of testing, and sampling activities that will be associated with the work. Having the work pre-approved will prevent contractors from having to mobilize twice. With regards to emergency situations, the Department has amended Section 4.7.4 to include the phrase “unless otherwise directed by the Department. “Which will allow our current practice of providing project direction via phone and email to address the emergency situation. Additionally Part B 2.29.1.1 and 2.29.1.2 discuss which repairs require prior approval by the Department. The Department may consider adding the phrase “These Repairs will not require prior approval by the Department.” to Part B 2.29.2 to make this point more clear. Additionally the Department will consider drafting guidance that lists which post construction tests will be associated with specific types of repairs.

MAPDA Comment 3

Our members continue to be concerned about the consequences of installations and retrofits that are not approved by DNREC within specified time frames. Ultimately, the UST owner is responsible for the site, regardless of the changes or upgrades made to an existing UST system. Historically, there have been significant delays in securing Department approval for any UST upgrades and in the permitting process itself. The 6-16-17 version improves this situation by allowing some repair, retrofit, or upgrade projects to proceed if DNREC is not timely in its review and approval. However, this limited accountability provision does not resolve the industry’s concerns regarding permit approvals. We urge DNREC to establish a firm time commitment to provide approvals for retrofits and new installations and consequences if those commitments are not met.

Department Response: The Department is not comfortable with allowing owners to construct new UST systems or perform Repair, Retrofit, and Upgrades that involve excavations or the removal of containment sumps without Department approval because DNREC does not want to put the owner in a position where the owner has to re-do underground work that is inconsistent with the approved design. As this type of work is underground, modifying it if needed, would be costly and not practical.

The Department can be more flexible with repairs, retrofits and upgrades that are aboveground or where the work will take place within a containment sump. The Department added language to Part A Section 4.7.3 that allows an owner to conduct this type of work in the event that the Department does not approve or deny the proposed work within 14 days. In these types of situations, the owner would be required to inform the Department two days before the work will occur and assume the risk performing additional work to meet applicable regulations. The Department will continue to accommodate emergency situations via phone and email in an expeditious manner, and has not modified the regulations to address emergency situations. The Department extended the time given to approve repairs, retrofits, and upgrades from ten days to fourteen days because the Department is proposing to define a day as a calendar day, and believes two weeks is a reasonable timeframe to review and approve the work.

MAPDA Comment 4

Part B, section 1.9.4.3 – We are deeply concerned that the current proposed regulations do not allow third-party reports to be the sole means for reporting release detection monitoring results. Remote storage and monitoring is the most modern, efficient, and safest way to store and maintain these records. These third-party companies are legitimate, approved companies and should be accepted as such. It is unrealistic to expect a local station to maintain these paper records and unnecessarily burdens tank owners with paperwork requirements. We urge the Department to accept third-party reports.

Department Response:

The Department intends to continue to accept third party reports and has amended Part B, Section 1.9.4.3 to state that the Department may periodically require the owner to provide original information to validate the third party reports. This would only occur if the Department believes that the third party records may be fraudulent or contain errors. If this is the case the Department would request several months of future release detection records including those printed monthly by the ATG as well as those produced by the third party to ensure the third party report is valid. The Department has confirmed that the third party reports can be made to contain the same information that the ATG is programmed to generate. Once the third party reports are verified as being identical to the ATG Programming, the need for the owner/operator to print out the monthly slips would no longer be needed.

MAPDA Comment 5

Part B, 1.9.5 – Our members are concerned about the liability resulting from the records of previous owners. For instance, UST systems purchased under duress (i.e. a tank owner disappears and the property owner wants to sell the location and tanks to a new, reputable, company), will probably result in the loss of all the previous records. We urge the Department consider these situations within the proposed regulations.

Department Response: Please note that Part A Section 4.4.4 places the burden of transferring historic records associated with the UST system during a transfer of ownership on the seller and not the buyer of the facility. The Department will continue its practice of not holding a new owner accountable for producing records that the previous owner did not transfer to them. Additionally, Part A Section 5.1.3 was amended to require Owners and Operators to maintain specific records for a three year period. Part A Section 5.1.4 was also amended to only hold owners and operators accountable for certain records generated during their time of ownership and operation.

MADAP Comment 6:

Part B, 1.10.3 – We believe the requirement to electrically isolate and cathodically protect all exposed metallic components of hold-down systems is unnecessary, as there have not been any instances where tanks have floated due to corrosion of hold-down devices. Our members use hold-down devices to stabilize the tanks. The straps are not included in the calculation which is based on “worst case scenario,” not actual site conditions; thus, the tanks must be buried two to three feet deeper in

Delaware than in any other state. This provision makes tank top containment sumps extremely deep, which is a safety concern for our contractors. Additionally, burying tanks deeper leads to increased cost due to additional excavation, shoring and backfill. We urge DNREC to remove this requirement.

Department Response:

The requirement to electrically isolate and cathodically protect all exposed metallic components of hold down systems is intended to prevent USTs from becoming buoyant and floating out of the ground. The practice of isolating the hold down assemblies is consistent with the Steel Tank Institute's document Recommended Practice for Hold Down Strap Isolation R891 2006 and other manufacturer's tank installation instructions.

The Department considers stability calculations of paramount importance when installing new tanks. The Department's mission is to prevent or minimize releases into the environment. These calculations dictate the correct depth tanks need to be installed for them to be stable and not move. A stable tank translates into a tank that won't cause a release due to movement. Stability calculations are based on PEI Recommended Practice 100 and assume a worst case scenario i.e. empty tank, tank pit completely full of water and a depth resulting in a factor of safety of 1.2. Ideally the goal is to pass the calculations without having to include a hold-down system in the calculations since this will add to installation costs. The Department has always performed these calculations resulting in no tanks lifting out of the ground. As time has moved forward new tanks installed have gotten larger and correspondingly have to be installed deeper.

If an owner chooses to utilize hold-down system, to pass the stability calculations at shallower depths, than the depth that he tanks can be installed unimpeded, the metallic components of the hold-down system need to be cathodically protected to insure integrity of the hold-down system. The Department can provide cost effective designs/guidance upon request.

MAPDA Comment 7

Part B, 1.14.3 – We believe the 1/8" slope requirement for product piping is an obsolete requirement and ask that DNREC eliminate it from the proposed regulation. The UST is a pressurized system and slope is not needed, per the most recent PEI practices and major piping manufacturers, including the Loop system, made by OPW.

We also urge DNREC to reference the most up-to-date standard to keep pace with industry improvements and explain to the committee why outdated PEI standards are being proposed (reference dates of 2005, 2009, 2008, 2014).

Specifically, Petroleum Equipment Institute (PEI) RP100, Recommended Practices for Installation of Underground Liquid Storage Systems, January 2005 (Referenced Standards, section 3.3.5.1) is not the most recent edition of this industry standard. It is concerning that DNREC appears to be ignoring the

latest developments in industry standards, which means that technological advances and other new information may be overlooked, which could potentially have a negative effect on human health and the environment. The PEI website notes “PEI’s Recommended Practices for Installation of Underground Liquid Storage Systems provides the most current information on sound engineering and construction practices with regard to the proper installation of underground liquid storage systems.”

The effect of outdated standards quickly becomes apparent. The current version requiring a 1/8” slope for product piping is no longer the industry standard and creates significant additional cost. The most recent PEI RP100 (2017 Edition), notes “As a general rule, carefully grade and compact bedding to ensure a minimum slope of 1/8 inch per foot toward the tank for vapor, vent gravity fill and suction supply lines. In pressure systems, slope may not be necessary on supply lines. Rather, communication between the interstitial space of secondarily contained pressure supply lines and collection sumps should be maintained so that released product can enter a sump and be visually observed or detected by sensors. For safe suction-piping configurations, the entire piping run must slope down to the tank, allowing product to drain safely if air should enter.” A pressurized piping system should not need to rely on gravity to transport product back to the STP sump. A failure in the primary piping would transfer that pressure into the secondary portion of the pipe.

Delaware is one of only a few states with this provision and the EPA does not require it. This provision is extremely costly to tank owners on both new and existing systems, requiring unnecessarily deep tank burials or costly installations of excessive monitoring equipment to meet the “alternative approval” requirements. There is just not enough evidence of potential environmental problems in modern UST systems for this provision to be required. We urge DNREC to eliminate the 1/8” slope requirement.

We also believe it is counter-productive to require an alternate approval process for existing systems that cannot meet slope requirements. This alternate process is not transparent and could impose additional burdens not mandated by regulation onto the UST owner. DNREC has traditionally granted waivers from this provision for years, with ever increasing requirements. We believe that conditions need to be outlined and detailed in the regulations to provide predictability and consistency to the regulated community if an alternate approval process is necessary.

Department Response:

On New Installations:

- **Allowing product lines to be installed without the appropriate slope tends to create humps or dips in the piping that will cause leak detection problems. For example leaks on the far side of a hump, if small enough, will not be detected by the leak detector. The hump maintains enough pressure that the leak detector cannot detect a leak in this situation and can also trap air which can interfere with leak detector operation. Dips are traps for air to accumulate in lines again interfering with leak detector operation. The Department does not subscribe with the school of thought that line pressure will push product in the interstitial space to a sump. This is also a concern regarding the OPW Loop system. Further the OPW Loop system has not been certified by a third party that it doesn’t interfere with the functionality of leak detection systems. The time**

it takes for the interstitial space to transmit a release to a sensor can be greatly increased or never occur. Continuous slope back to the tanks is the most efficient and cost effective way to install product piping. Leak detectors will now operate efficiently and without the impediments no slope provides. Sensors will detect a release in the shortest amount of time, minimizing environmental contamination. Fewer sensors need to be used i.e. only in the tank top sumps when compared to all sumps with no slope. When compared to the environmental damage sloped lines minimize or prevent it is easy to see why sloping the product lines back to the tanks is the most efficient and cost effective option. The Department has consulted with Mr. Stephen Purpora, of Purpora Engineering, and has included his suggestion and opinions regarding maintaining slope to this response to comment document.

For Existing Systems:

- When replacement of piping is desired, the Department has allowed installing the product piping without the correct slope provided there are sensors in all sumps and all sensors are wired for positive shutdown. The additional sensors are needed since where a release will go is no longer predictable.

The Department will consider using the most recent versions of PEI Recommended Practice documents with the understanding that Part A Section 3.2.1 states that if there is a conflict between a reference standard and a regulation, the more stringent of the two applies.

MAPDA Comment 8

Part B, Section 1.22.3 – Industry standard (per OPW) maintains that the shut-off point of the drop tube must be reached before the ball float reduces flow to ensure proper overfill valve operation. The current proposed regulation conflicts with the installation instructions of the drop tubes. We urge that the regulations adopt the industry standard.

Department Response: The Department has modified Part B, Section 1.22.3 to address the concern that the shut off point of the drop tube must be reached before the ball float reduces flow to ensure proper overfill valve operation.

MAPDA Comment 9

Part B, 1.31.1.6 – Our members appreciate the provisions for sump inspection frequency which allow UST owners to rely on properly installed sensors for monthly release detection and not put individuals at risk every month with confined space and traffic hazards. It also reduces the probability of water intrusion with the sump lid not being removed every 30 days. However, there is an opportunity to go even further. The EPA has recognized a low-level liquid alternative integrity test method for sumps used as secondary containment and interstitial monitoring for UST system piping as “equally protective of the environment”. This means that this testing method can be incorporated into the revised regulations. We urge consideration of this test method as the full sump testing method greatly increases the cost of compliance.

Additionally, we believe that pressurized product piping should not have to meet the slope requirement of 1/8" if the piping manufacturer certifies that interstitial monitoring will work properly without the piping being sloped. Again, as discussed earlier, this brings Delaware regulations to current industry standards.

Department Response: The Department cannot support the use of the low level testing procedure, because our staff have observed problems with rubber penetration boots cracking resulting in the sump no longer being liquid tight. The sump testing requirements can be found in Part B Section 1.25 and Part B Section 2.26.

Years ago the Department conducted sump testing experiments at several new installations. The sumps were initially filled slightly above the highest penetration fitting and the sump didn't leak. The contractor was instructed to completely fill all the sumps and there was a 100% failure rate and all penetration fittings leaked. The fittings were tightened and all the sumps passed the completely full test. This was repeated at several installations with the same result and supports the requirement to completely fill the sump during hydrostatic testing.

MAPDA Comment 10

Part B, 2.9.5.1.3 - The periodic validation of third-party test reports should be clearly defined or removed. The remote collection of data and records improves the storage and availability to the Department. A burden should not be put upon the UST Owner to "validate" these reports with no clarity on what the definition entails.

Department Response:

The Department intends to continue to accept third party reports and has amended Part B, Section 2.9.5.1.3 to state that the Department may periodically require the owner to provide original information to validate the third party reports. This would only occur if the Department believes that the third party records may be fraudulent or contain errors. If this is the case the Department would request several months of future release detection records including those printed monthly by the ATG as well as those produced by the third party to ensure the third party report is valid. The Department has confirmed that the third party reports can be made to contain the same information that the ATG is programmed to generate. Once the third party reports are verified as being identical to the ATG Programming, the need for the owner/operator to print out the monthly slips would no longer be needed.

MAPDA Comment 11

We believe it is critical to the industry and to the environment to get these regulations right. According to a recent update from the PMAA, the 38 states with UST program authority (of which Delaware is one) have two compliance deadline options for the EPA. One is the October 13, 2018 deadline and the other is a pushed back October 13, 2021 deadline. It appears there is no rush from the EPA to finalize the update to the regulations and we urge DNREC to fully examine the effects of the proposed regulations before implementation.

Department Response: The Department also believes it is critical to work with industry and get these regulations right. EPA has clarified that they expect Delaware to submit an updated program

approval document by October 13, 2018 and the Department is continuing to work towards that objective. The Department has confirmed with EPA that the deadline of October 13, 2018 is a firm deadline and the October 13, 2021 does not apply to our Department

Response to WaWa Comments

WaWa Comment 1: 1.31.1.6

Submersible turbine pump Containment Sumps that are part of an UST System meeting the following requirements may be inspected no less frequently than once every twelve (12) months providing the following requirements are met:

I agree with this change in sump inspection frequency for the sake of safety and sump tightness. This allows UST Owners to rely on properly installed sensors for monthly release detection and not put individuals at risk every month with confined space and traffic hazards. It also reduces the probability of water intrusion with the sump lid not being removed every 30 days. Part B, Section 1.31.6 has been changed to incorporate this option.

Department Response: The Department agrees with your statement.

WaWa Comment 2: 2.9.5.1.3

At a minimum of once every thirty (30) calendar Days the ATG equipment shall perform a Release Detection test for each Tank and shall produce a record of each such test. Original ATG equipment test records or equivalent third party release detection test reports shall be made available upon request. The Department may require the Owner or Operator to periodically validate third party test reports

The periodic validation should be defined or removed. The remote collection of data and records improves the storage and availability to the Department. A burden should not be put upon the UST Owner to “validate” these reports with no definition of what that entails.

Department Response:

The Department intends to continue to accept third party reports and has amended Part B, Section 2.9.5.1.3 to state that the Department may periodically require the owner to provide original information to validate the third party reports. This would only occur if the Department believes that the third party records may be fraudulent or contain errors. If this is the case the Department would request several months of future release detection records including those printed monthly by the ATG as well as those produced by the third party to ensure the third party report is valid. The Department has confirmed that the third party reports can be made to contain the same information that the ATG is programmed to generate. Once the third party reports are verified as being identical to the ATG Programming, the need for the owner/operator to print out the monthly slips would no longer be needed.

WaWa Comment 3: 4.7.4

UST System Owners and Operators must shall notify the Department two (2) Days prior to within 48 hours of the commencement of Repair, Retrofit or Upgrade construction work after receipt of the Department's approval of the Repair, Retrofit or Upgrade construction plans.

A repair should be treated differently from a retrofit and upgrade as it can be an emergency situation where a component needs to be repaired/replaced as soon as possible. We spoke verbally at USTAC about how the Department does work with us in situations like this, but I feel that a written regulatory requirement of 2 day notification puts a tank owner in violation when a repair has to be made in less than 2 days.

Department Response:

DNREC's rationale for requiring prior approval of certain types of repairs including those that will require system testing or a site assessment (sampling) is to ensure that the proper equipment is being installed, and to clarify for owners and contractors the type of testing, and sampling activities that will be associated with the work. Having the

work pre-approved will prevent contractors from having to mobilize twice. With regards to emergency situations, the Department has amended Section 4.7.4 to include the phrase “unless otherwise directed by the Department. “which will allow our current practice of providing project direction via phone and email to address the emergency situation. Additionally Part B 2.29.1.1 and 2.29.1.2 discuss which repairs require prior approval by the Department. The Department may consider adding the phrase “These Repairs will not require prior approval by the Department.” to Part B 2.29.2 to make this point more clear.

WaWa Comment #4: 1.31.1.6.2

All Regulated Substance, vent and vapor return Piping shall slope back to the Tank with a minimum slope of one-eighth (1/8") inch per foot in accordance with Part B subsection 1.14.3.

Pressurized product piping should not have to meet the slope requirement if the piping manufacturer certifies that interstitial monitoring will work properly without the piping being sloped.

Department Response:

On New Installations:

- Allowing product lines to be installed without the appropriate slope tends to create humps or dips in the piping that will cause leak detection problems. For example leaks on the far side of a hump, if small enough, will not be detected by the leak detector. The hump maintains enough pressure that the leak detector cannot detect a leak in this situation and can also trap air which can interfere with leak detector operation. Dips are traps for air to accumulate in lines again interfering with leak detector operation. The Department does not subscribe with the school of thought that line pressure will push product in the interstitial space to a sump. This is also a concern regarding the OPW Loop system. Further the OPW Loop system has not been certified by a third party that it doesn't interfere with the functionality of leak detection systems. The time it takes for the interstitial space to transmit a release to a sensor can be greatly increased or never occur. Continuous slope back to the tanks is the most efficient and cost effective way to install product piping. Leak detectors will now operate efficiently and without the impediments no slope provides. Sensors will detect a release in the shortest amount of time, minimizing environmental contamination. Fewer sensors need to be used i.e. only in the tank top sumps when compared to all sumps with no slope. When compared to the environmental damage sloped lines minimize or prevent it is easy to see why sloping the product lines back to the tanks is the most efficient and cost effective option. The Department has consulted with Mr. Stephen Purpora, of Purpora Engineering, and has included his suggestion and opinions regarding maintaining slope to this response to comment document.

For Existing Systems:

- When replacement of piping is desired, the Department has allowed installing the product piping without the correct slope provided there are sensors in all sumps and all sensors are wired for positive shutdown. The additional sensors are needed since where a release will go is no longer predictable.

The Department will consider using the most recent versions of PEI Recommended Practice documents with the understanding that Part A Section 3.2.1 states that if there is a conflict between a reference standard and a regulation, the more stringent of the two applies.

Response to SMO Comments

Below I have listed a few items that I feel warrant further discussion or consideration by the Department:

SMO Comment 1: 7 – Part A Section 4:

Ultimately the UST owner is responsible, regardless of the changes or upgrades made to an existing UST system. Given the length of time to secure Department approval for any UST upgrades (historically), we need to agree on a time commitment by the Department to provide approvals for said work. The same time commitment needs to be provided by the Department for new installations also.

Department Response: The Department is not comfortable with allowing owners to construct new UST systems or perform Repair, Retrofit, and Upgrades that involve excavations or the removal of containment sumps without Department approval because DNREC does not want to put the owner in a position where the owner has to re-do underground work that is inconsistent with the approved design. As this type of work is underground, modifying it if needed, would be costly and not practical.

The Department can be more flexible with repairs, retrofits and upgrades that are aboveground or where the work will take place within a containment sump. The Department added language to Part A Section 4.7.3 that allows an owner to conduct this type of work in the event that the Department does not approve or deny the proposed work within 14 days. In these types of situations, the owner would be required to inform the Department two days before the work will occur and assume the risk performing additional work to meet applicable regulations. The Department will continue to accommodate emergency situations via phone and email in an expeditious manner, and has not modified the regulations to address emergency situations. The Department extended the time given to approve repairs, retrofits, and upgrades from ten days to fourteen days because the Department is proposing to define a day as a calendar day, and believes two weeks is a reasonable timeframe to review and approve the work.

SMO Comment 2: 8 – Part A Gen Req.:

Other jurisdictions allow product to be placed into the tank to ballast. Most of our companies have a general policy (or are self-insured) that covers all of our tanks, regardless. Could these general policies be used as an alternative until the insurance company has officially added the tank(s) to the policy? Has DNREC reviewed this with other jurisdictions or the insurance industry to determine a responsible way to accomplish this?

Department Response:

In the most recent draft of the regulations, Sections Part A, 4.1.7 and 4.1.8 have been deleted. The Section that governs this situation is” Part F 1.1.12 and it contains the language that “valid financial responsibility” must be in place prior to fuel being added to the UST system.

Part F 1.1.12 No UST Systems shall contain a Regulated Substance without a current and valid financial responsibility mechanism in accordance with the applicable requirements of these Regulations.

SMO Comment 3: 17. Part B, section 1.9.4.3

This needs to be reviewed to allow third party reports to suffice for reporting release detection results. Remote storage and monitoring is the most modern, efficient, and safest way to store and maintain these records. These third party companies are legitimate, approved companies and should be accepted as such. It is unrealistic to expect a local station to maintain these paper records.

The Department intends to continue to accept third party reports and has amended Part B, Section 1.9.4.3 to state that the Department may periodically require the owner to provide original information to validate the third party reports. This would only occur if the Department believes that the third party records may be fraudulent or contain errors. If this is the case the Department would request several months of future release detection records including those printed monthly by the ATG as well as those produced by the third party to ensure the third party report is valid. The Department has confirmed that the third party reports can be made to contain the same information that the ATG is programmed to generate. Once the third party reports are verified as being identical to the ATG Programming, the need for the owner/operator to print out the monthly slips would no longer be needed.

SMO Comment 4: 18 – Part B, 1.9.5:

UST systems purchased under duress (i.e. a tank owner disappears and the property owner wants to sell the location and tanks to a new, reputable, company), will probably result in the loss of all the previous records. Why would a potential responsible owner be liable for such records? This needs to be addressed.

Department Response:

Department Response: Please note that Part A Section 4.4.4 places the burden of transferring historic records associated with the UST system during a transfer of ownership on the seller and not the buyer of the facility. The Department will continue its practice of not holding a new owner accountable for producing records that the previous owner did not transfer to them. Additionally, Part A Section 5.1.3 was amended to require Owners and Operators to maintain specific records for a three year period. Part A Section 5.1.4 was also amended to only hold owners and operators accountable for certain records generated during their time of ownership and operation.

SMO Comment 5: 20. Part B, section 1.14.3

This is an obsolete requirement. It is a pressurized system and slope is not needed. Review this with any of the major piping manufacturers (who employ engineers that do nothing but design and work on these systems to provide the safest, best products for our industry.). Review the OPW Loop system. It is a perfect example of my point. OPW is a world leader in piping systems and have utilized this system around the world, with no issues.

Department Response:

On New Installations:

- **Allowing product lines to be installed without the appropriate slope tends to create humps or dips in the piping that will cause leak detection problems. For example leaks on the far side of a hump, if small enough, will not be detected by the leak detector. The hump maintains enough pressure that the leak detector cannot detect a leak in this situation and can also trap air which can interfere with leak detector operation. Dips are traps for air to accumulate in lines again interfering with leak detector operation. The Department does not subscribe with the school of thought that line pressure will push product in the interstitial space to a sump. This is also a concern regarding the OPW Loop system. Further the OPW Loop system has not been certified by a third party that it doesn't interfere with the functionality of leak detection systems. The time it takes for the interstitial space to transmit a release to a sensor can be greatly increased or never occur. Continuous slope back to the tanks is the most efficient and cost effective way to install product piping. Leak detectors will now operate efficiently and without the impediments no slope provides. Sensors will detect a release in the shortest amount of time, minimizing environmental contamination. Fewer sensors need to be used i.e. only in the tank top sumps when compared to all sumps with no slope. When compared to the environmental damage sloped lines minimize or prevent it is easy to see why sloping the product lines back to the tanks is the most efficient and cost effective option. The Department has consulted with Mr. Stephen Purpora, of Purpora Engineering, and has included his suggestion and opinions regarding maintaining slope to this response to comment document.**

For Existing Systems:

- **When replacement of piping is desired, the Department has allowed installing the product piping without the correct slope provided there are sensors in all sumps and all sensors are wired for positive shutdown. The additional sensors are needed since where a release will go is no longer predictable.**

The Department will consider using the most recent versions of PEI Recommended Practice documents with the understanding that Part A Section 3.2.1 states that if there is a conflict between a reference standard and a regulation, the more stringent of the two applies.

SMO Comment 6: Other:

Review of the DNREC use of industry reference standards incorporated into the regulations seem to be outdated. The use of these outdated reference standards seem to be used to justify DNREC's "stance" on a certain regulation or requirement. A good example of this is the use of PEI recommended practices referenced in the regulations that have dates of 2005, 2009, 2008, and 2014. These are not the most recent standards for all of these practices.

The Department will consider using the most recent versions of PEI Recommended Practice documents with the understanding that Part A Section 3.2.1 states that if there is a conflict between a reference standard and a regulation, the more stringent of the two applies.

Royal Farms Comments

Alex, I appreciate the opportunity to participate in the UST TAC. I feel that it was a very productive process. Please see my comments below:

Part A

Royal Farms Comment 1:

3.3.5 Petroleum Equipment Institute (PEI)

3.3.5.1 RP100, Recommended Practices for Installation of Underground Liquid Storage Systems, January 2005.

I did not have a chance to check all referenced standards, but this one jumped out at me as it relates to Part B Section 1.14.3 (Piping Slope). This is not the most recent edition of this industry standard. It is concerning that DNREC appears to be ignoring the latest developments in industry standards, which means that technological advances and other new information may be overlooked, which could potentially have a negative effect on human health and the environment. This is a direct quote from the PEI website” PEI’s Recommended Practices for Installation of Underground Liquid Storage Systems provides the most current information on sound engineering and construction practices with regard to the proper installation of underground liquid storage systems.”

Department Response:

The Department will consider using the most recent versions of PEI Recommended Practice documents with the understanding that Part A Section 3.2.1 states that if there is a conflict between a reference standard and a regulation, the more stringent of the two applies.

Royal Farms Comment 2:

4.1.7 No Person shall order or accept delivery of a Regulated Substance into an UST System unless the UST Facility has a valid Registration Certificate issued by the Department.

4.1.8 No Person shall deposit a Regulated Substance into an UST System unless the UST Facility has a valid Registration Certificate issued by the Department.

This requirement opens up owners to enforcement since fuel is required for testing/commissioning of the UST system; yet owners do not receive registration until after testing is submitted to the Department. An exception should be made for hold down loads utilized for the testing/commissioning of fuel system. A recommended revision would be to replace “valid registration certificate” with “valid financial responsibility”.

Department Response:

In the most recent draft of the regulations, Sections Part A, 4.1.7 and 4.1.8 have been deleted. The Section that governs this situation is” Part F 1.1.12 and it contains the language that “valid financial responsibility” must be in place prior to fuel being added to the UST system.

Part F 1.1.12 No UST Systems shall contain a Regulated Substance without a current and valid financial responsibility mechanism in accordance with the applicable requirements of these Regulations.

Royal Farms Comment 3:

Section 4.7 – The word “repair” should be removed from this section. By definition a repair does not require testing and therefore does not require notification or approval from the Department. It would be impractical to notify the department of all repairs, and impossible for the department to respond to all of them. Additionally, it would introduce an unnecessary delay in minor repairs that could be made easily and immediately. This section should be limited to retrofits and upgrades, which would require testing to place the UST system back into service.

Department Response:

DNREC’s rationale for requiring prior approval of certain types of repairs including those that will require system testing or a site assessment (sampling) is to ensure that the proper equipment is being installed, and to clarify for owners and contractors the type of testing, and sampling activities that will be associated with the work. Having the work pre-approved will prevent contractors from having to mobilize twice. With regards to emergency situations, the Department has amended Section 4.7.4 to include the phrase “unless otherwise directed by the Department.” which will allow our current practice of providing project direction via phone and email to address the emergency situation. Additionally Part B 2.29.1.1 and 2.29.1.2 discuss which repairs require prior approval by the Department. The Department may consider adding the phrase “These Repairs will not require prior approval by the Department.” to Part B 2.29.2 to make this point more clear.

Royal Farms Comment 4:

Part B

1.10.3 All exposed metallic components of hold down systems shall be Electrically Isolated and Cathodically Protected when the hold down system is required by the Department.

This requirement seems to be unnecessary. Has there ever been any instances where tanks have floated due to corrosion of hold down devices? We still use hold down devices since they do stabilize the tanks. However, since the straps are not included in the calculation, which is based on “worst case scenario”, not actual site conditions; we are forced to bury tanks in DE 2-3 feet deeper than in any other state. This makes our tank top containment sumps extremely deep, which is a safety concern for our contractors. Additionally, burying tanks deeper leads to increased cost due to additional excavation, shoring and backfill.

Department Response:

The requirement to electrically isolate and cathodically protect all exposed metallic components of hold down systems is intended to prevent USTs from becoming buoyant and floating out of the ground. The practice of isolating the hold down assemblies is consistent with the Steel Tank Institute’s document Recommended Practice for Hold Down Strap Isolation R891 2006 and other manufacturer’s tank installation instructions.

The Department considers stability calculations of paramount importance when installing new tanks. The Department’s mission is to prevent or minimize releases into the environment. These calculations dictate the correct depth tanks need to be installed for them to be stable and not move. A stable tank translates into a tank that won’t cause a release due to movement. Stability calculations are based on PEI Recommended Practice 100 and assume a worst case scenario i.e. empty tank, tank pit completely full of water and a depth resulting in a factor of safety of 1.2. Ideally the goal is to pass the calculations without having to include a hold-down system in the calculations since this will add to installation costs. The Department has always performed these calculations resulting in no tanks lifting out of the ground. As time has moved forward new tanks installed have gotten larger and correspondingly have to be installed deeper. This obviously adds to installation costs but installing larger tanks is the owner’s voluntary choice and does not involve the Department. This is the preferred method for installing tanks, however, another more expensive option is available when the situation calls for it (see paragraph below).

In instances where there are geological barriers, such as rock or ground water, the only way to install these tanks is to utilize an additional hold-down system, figured into the stability calculations, to determine the correct depth which will be shallower than when the tanks can be installed unimpeded. Since the hold-down system is the most important part of tank stability in this case, the metallic components of the hold-down system are to be cathodically protected to insure integrity of the hold-down system. The Department can provide cost effective designs/guidance upon request.

Royal Farms Comment 5:

Section 1.14.3 – the 1/8” slope requirement should be removed from product piping. Per PEI RP100 (2017 Edition), “As a general rule, carefully grade and compact bedding to ensure a minimum slope of 1/8 inch per foot toward the tank for vapor, vent gravity fill and suction supply lines. **In pressure systems, slope may not be necessary on supply lines. Rather, communication between the interstitial space of secondarily contained pressure supply lines and collection sumps should be maintained so that released product can enter a sump and be visually observed or detected by sensors.** For safe suction-piping configurations, the entire piping run must slope down to the tank, allowing product to drain safely if air should enter.” This requirement also leads to addition cost due tanks being buried deeper than they would be otherwise; and dispenser sump extensions. A pressurized piping system should not need to rely on gravity to transport product back to the STP sump. A failure in the primary piping would transfer that pressure into the secondary portion of the pipe.

Department Response:

On New Installations:

- **Allowing product lines to be installed without the appropriate slope tends to create humps or dips in the piping that will cause leak detection problems. For example leaks on the far side of a hump, if small enough, will not be detected by the leak detector. The hump maintains enough pressure that the leak detector cannot detect a leak in this situation and can also trap air which can interfere with leak detector operation. Dips are traps for air to accumulate in lines again interfering with leak detector operation. The Department does not subscribe with the school of thought that line pressure will push product in the interstitial space to a sump. This is also a concern regarding the OPW Loop system. Further the OPW Loop system has not been certified by a third party that it doesn’t interfere with the functionality of leak detection systems. The time it takes for the interstitial space to transmit a release to a sensor can be greatly increased or never occur. Continuous slope back to the tanks is the most efficient and cost effective way to install product piping. Leak detectors will now operate efficiently and without the impediments no slope provides. Sensors will detect a release in the shortest amount of time, minimizing environmental contamination. Fewer sensors need to be used i.e. only in the tank top sumps when compared to all sumps with no slope. When compared to the environmental damage sloped lines minimize or prevent it is easy to see why sloping the product lines back to the tanks is the most efficient and cost effective option. The Department has consulted with Mr. Stephen Purpora, of Purpora Engineering, and has included his suggestion and opinions regarding maintaining slope to this response to comment document.**

For Existing Systems:

- **When replacement of piping is desired, the Department has allowed installing the product piping without the correct slope provided there are sensors in all sumps and all sensors are wired for positive shutdown. The additional sensors are needed since where a release will go is no longer predictable.**

The Department will consider using the most recent versions of PEI Recommended Practice documents with the understanding that Part A Section 3.2.1 states that if there is a conflict between a reference standard and a regulation, the more stringent of the two applies.

Mark Bakers Comments

7. Part A, Section 4, What happens with installations and retrofits that are not approved within specified time frames?

The 6-16-17 version is an improvement over previous versions since it does allow some repair, retrofit, or upgrade projects to proceed if DNREC is not timely in its review and approval. However, this limited accountability provision does not resolve the industry's concerns regarding permit approvals. There have been considerable delays in the permitting process in the past and it is very important for DNREC to be held accountable to its review timelines. The Department response is written as a defense of the site owner, but the fact is the owner is responsible for everything that ever happens on the site anyway. If they are willing to risk modification of their work, they should be permitted to do so. After all, DNREC will always stick to the schedule, so this conflict will never actually occur. This language should be expanded to protect permitting delays on new installation as well.

Department Response: The Department is not comfortable with allowing owners to construct new UST systems or perform Repair, Retrofit, and Upgrades that involve excavations or the removal of containment sumps without Department approval because DNREC does not want to put the owner in a position where the owner has to re-do underground work that is inconsistent with the approved design. As this type of work is underground, modifying it if needed, would be costly and not practical.

The Department can be more flexible with repairs, retrofits and upgrades that are aboveground or where the work will take place within a containment sump. The Department added language to Part A Section 4.7.3 that allows an owner to conduct this type of work in the event that the Department does not approve or deny the proposed work within 14 days. In these types of situations, the owner would be required to inform the Department two days before the work will occur and assume the risk performing additional work to meet applicable regulations. The Department will continue to accommodate emergency situations via phone and email in an expeditious manner, and has not modified the regulations to address emergency situations. The Department extended the time given to approve repairs, retrofits, and upgrades from ten days to fourteen days because the Department is proposing to define a day as a calendar day, and believes two weeks is a reasonable timeframe to review and approve the work.

8. Part A, General Requirements, Special dispensation for placing product in newly installed tanks for testing prior to acquiring financial responsibility

Tank owners spend a considerable amount of money trying to keep water from ever entering their tanks. Tank owners do not feel it is appropriate to fill them with water before use. Apparently other states make provisions for this procedure in their regulations. Why does Delaware have to be more difficult to operate in than other states? I'm willing to guess this practice has occurred in Delaware many times since the regulations have been in effect with no adverse consequences. Has DNREC made any effort to check with other states or the insurance industry to establish a responsible procedure that does not involve filling the tanks with water? If so, is there any feedback from those conversations?

Department Response:

In the most recent draft of the regulations, Sections Part A, 4.1.7 and 4.1.8 have been deleted. The Section that governs this situation is" Part F 1.1.12 and it contains the language that "valid financial responsibility" must be in place prior to fuel being added to the UST system.

Part F 1.1.12 No UST Systems shall contain a Regulated Substance without a current and valid financial responsibility mechanism in accordance with the applicable requirements of these Regulations.

17. Part B, section 1.9.4.3 – Using Third Party Reports in place of ATG printouts?

This needs to be considered further to permit third party reports to be the sole means for reporting release detection monitoring results. A UST site is one of the worst places to generate and keep records. This is 2017 and remote monitoring and reporting are where everything is going in the industry. The refusal to recognize that in these regulations will burden tank owners with needless paperwork requirements for years to come. A comment from an EPA representative at a NWGLDE meeting is not enough of a reason to give up working on language for this provision. Of course the information comes from the ATG that is what the 3rd parties are connected to. These reports are generated by reputable 3rd parties that are not interested in faking results for tank owners, they should be accepted.

Department Response:

The Department intends to continue to accept third party reports and has amended Part B, Section 1.9.4.3 to state that the Department may periodically require the owner to provide original information to validate the third party reports. This would only occur if the Department believes that the third party records may be fraudulent or contain errors. If this is the case the Department would request several months of future release detection records including those printed monthly by the ATG as well as those produced by the third party to ensure the third party report is valid. The Department has confirmed that the third party reports can be made to contain the same information that the ATG is programmed to generate. Once the third party reports are verified as being identical to the ATG Programming, the need for the owner/operator to print out the monthly slips would no longer be needed.

20. Part B, section 1.14.3 – Can the slope requirement be removed for underground piping?

The reasoning given by DNREC in its response is not convincing. Delaware is one of only a few states (others could provide an exact number) with this provision. This has the feel of a “because we want it this way” requirement. The EPA does not require this provision in their regulations. This provision is extremely costly to tank owners on both new and existing systems, requiring unnecessarily deep tank burials or costly installations of excessive monitoring equipment to meet the “alternative approval” requirements. This provision should be removed from the regulations. There is just not enough evidence of potential environmental problems in modern UST systems for this provision to be required. I seriously doubt that DNREC will be able to justify the cost of this regulatory requirement.

An example of the harm this regulation does is the prohibition of OPW’s Loop system. This system is approved throughout the US but cannot be used in Delaware. It is an extremely safe system that greatly decreases the cost of installation. We are constantly told by DNREC that manufactures recommendations must be followed, as if the manufactures know how to use their own products. As everyone knows, OPW produces a large number of the UST components that are used in DE. Yet in this case DNREC does not trust OPW to guide the use of its own products. How does this make any sense?

In addition, DNREC states that it will address existing systems by the alternate approval process. Forcing all existing sites that cannot meet slope requirements into an alternate approval process that can force any type of requirement onto the tank owners is not the proper way for the regulations to function. DNREC has been granting waivers from this provision for years, with ever increasing requirements. If DNREC knows that it will approve sites through this process, the conditions need to be outlined and detailed in the regulations to provide predictability and consistency to the regulated community. I feel that DNREC’s resistance to put their requirements in the regulations (as expressed at the last meeting) shows that this item is being used by DNREC as a way to extract ever tighter compliance measures from tank owners that are trapped by the configuration of their sites.

Department Response:**On New Installations:**

- **Allowing product lines to be installed without the appropriate slope tends to create humps or dips in the piping that will cause leak detection problems. For example leaks on the far side of a hump, if small enough, will not be detected by the leak detector. The hump maintains enough pressure that the leak detector cannot detect a leak in this situation and can also trap air which can interfere with leak detector operation. Dips are traps for air to accumulate in lines again interfering with leak detector operation. The Department does not subscribe with the school of thought that line pressure will push product in the interstitial space to a sump. This is also a concern regarding the OPW Loop system. Further the OPW Loop system has not been certified by a third party that it doesn't interfere with the functionality of leak detection systems. The time it takes for the interstitial space to transmit a release to a sensor can be greatly increased or never occur. Continuous slope back to the tanks is the most efficient and cost effective way to install product piping. Leak detectors will now operate efficiently and without the impediments no slope provides. Sensors will detect a release in the shortest amount of time, minimizing environmental contamination. Fewer sensors need to be used i.e. only in the tank top sumps when compared to all sumps with no slope. When compared to the environmental damage sloped lines minimize or prevent it is easy to see why sloping the product lines back to the tanks is the most efficient and cost effective option. The Department has consulted with Mr. Stephen Purpora, of Purpora Engineering, and has included his suggestion and opinions regarding maintaining slope to this response to comment document.**

For Existing Systems:

- **When replacement of piping is desired, the Department has allowed installing the product piping without the correct slope provided there are sensors in all sumps and all sensors are wired for positive shutdown. The additional sensors are needed since where a release will go is no longer predictable.**

The Department will consider using the most recent versions of PEI Recommended Practice documents with the understanding that Part A Section 3.2.1 states that if there is a conflict between a reference standard and a regulation, the more stringent of the two applies.

23. Part B, Section 1.22.3 – Phase out Requirements of ball floats. Can ball floats remain in place when overfill valves in the drop tube are installed?

DNREC's explanation conflicts with the installation instructions of the drop tubes (at least for the ones I found from OPW). The installation instructions simply state the shut off point of the drop tube must be reached before the ball float reduces flow to ensure proper overfill valve operation. This should be the standard.

Department Response: The Department has modified Part B, Section 1.22.3 to address the concern that the shut off point of the drop tube must be reached before the ball float reduces flow to ensure proper overfill valve operation.

Other items to be discussed moving forward:

- 1) It is much more important to get these regulations correct than to do them quickly. According to a recent update from the PMAA, the 38 states with UST program authority (of which Delaware is one) have two compliance deadline options for the EPA. One is the October 13, 2018 deadline and the other

is a pushed back October 13, 2021 deadline. It appears there is no rush from the EPA to finalize the update to the regulations.

Department Response: The Department also believes it is critical to work with industry and get these regulations right. EPA has clarified that they expect Delaware to submit an updated program approval document by October 13, 2018 and Delaware is continuing to work towards that objective.

- 2) The EPA has recognized a low level liquid alternative integrity test method for sumps used as secondary containment and interstitial monitoring for UST system piping as “equally protective of the environment”. This means that this testing method can be incorporated into the revised regulations. This should strongly be considered as the full sump testing method greatly increases the cost of compliance. The higher cost of the required testing method in DNREC’s regulations will need to be justified since the EPA has deemed other methods “equally protective of the environment”

Department Response: The Department cannot support the use of the low level testing procedure, because our staff have observed problems with rubber penetration boots cracking resulting in the sump no longer being liquid tight. The sump testing requirements can be found in Part B Section 1.25 and Part B Section 2.26.

Years ago the Department conducted sump testing experiments at several new installations. The sumps were initially filled slightly above the highest penetration fitting and the sump didn’t leak. The contractor was instructed to completely fill all the sumps and there was a 100% failure rate and all penetration fittings leaked. The fittings were tightened and all the sumps passed the completely full test. This was repeated at several installations with the same result and supports the requirement to completely fill the sump during hydrostatic testing.

- 3) Can DNREC explain the dates of the reference standards incorporated in the regulations? For example, the 5 PEI standards that are included have dates of 2005, 2009, 2008, 2014, and 2017. These are not the most recent standards for all of these items. Why would DNREC not utilize the most recent standards? There must be specific reasons an older version would be used. This should be explained to the USTAC.

Department Response:

The Department will consider using the most recent versions of PEI Recommended Practice documents with the understanding that Part A Section 3.2.1 states that if there is a conflict between a reference standard and a regulation, the more stringent of the two applies.