

MUST News

Department of Environmental Quality

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EPA LUST Trust Fund Cleanup Activities in Indian Country

Ray Faliskie, EPA

The U.S. Environmental Protection Agency (EPA or Agency) is committed to strengthening its partnership with tribes and supporting tribal governments in protecting human health and the environment in Indian country. The United States has a unique legal relationship with federally-recognized Indian tribes based on the Constitution, treaties, statutes, executive orders, and court decisions. This government-to-government relationship includes recognition of the right of tribes as sovereign governments to self determination and an acknowledgement of the federal government's trust responsibility to tribes.

EPA directly implements the UST program in Indian country by providing financial and technical assistance and by working with tribes to build their capabilities to develop and manage UST programs. EPA also has primary responsibility for implementing the LUST program in Indian country and actively works with tribes to identify, assess, and clean up releases.

Since 2001, EPA has utilized a LUST cleanup contract for cleanup and remediation of LUST-eligible sites in Indian country. The contract is supported by part of the LUST Trust Fund appropriation. LUST Trust funds can pay for cleanup at sites where the owner or operator is unknown, unwilling, or unable to respond, or where prompt action is needed.

There are two active LUST cleanups in Indian country in Montana: Old Union in Polson (within the Flathead Indian Reservation) and Custer's Last Camp store in Busby (located on the Northern Cheyenne Indian Reservation).

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EPA LUST Trust Fund Cleanup Activities in Indian Country – *continued from page 1*

Old Union is on the southeast corner of the intersection of 4th Avenue East and Main Street. The property is owned by a member of the Confederated Salish & Kootenai Tribes. A LUST release was first identified in December 1989 during tank removal. Soil samples collected during the removal activities indicated a release had occurred. Contaminated soil was excavated from the tank basin and one monitoring well was installed. The site was transferred to EPA in 2009. In October 2009, the EPA's contractor advanced four soil borings to assess soil and groundwater conditions. Petroleum hydrocarbons in soil and groundwater exceeded Indian Lands Risk Based Screening Levels (RBSLs) for soil and Maximum Contaminant Levels (MCLs) for groundwater.

In March 2011, EPA installed six monitoring wells to delineate the extent of the soil and groundwater contamination. Analytical results showed elevated concentrations of petroleum hydrocarbons in the soil and groundwater. In-situ chemical oxidation (ISCO) injection events were conducted to reduce the soil and groundwater contamination on-site. Since then, quarterly groundwater monitoring results indicate that petroleum contamination has been reduced to below cleanup levels and EPA is preparing to close the site.

Custer's Last Camp was once a gas station and store located on the Northern Cheyenne Indian Reservation. In 1991, the domestic well located on the site was found to be contaminated with volatile organic compounds including benzene and 1, 2-dichloroethane (DCA). In 1993 and 1994 the Montana Department of Environmental Quality (DEQ) conducted site investigations using Leaking Underground Storage Tank (LUST) Trust funds. The LUST Trust Program installed monitoring wells and discovered gasoline free product in on-site wells. As a result,

455 cubic yards of petroleum-contaminated soil (PCS) were removed from the property and the adjacent highway right-of-way. However, additional sampling results indicated contamination was present from other upgradient sources. In 1998, the site was transferred to the EPA due to tribal ownership and the EPA continued remediation using Region 8 LUST Trust funding. The fuel dispenser, associated piping, three USTs and 3,481 cubic yards of PCS were removed from the site in 2003 and soil samples taken during the excavation activities indicated elevated concentrations of petroleum hydrocarbons in the soil. A new domestic drinking water well was installed in 2003. Two additional monitoring wells installed in 2004 continued to show high contaminant concentrations, while soil samples showed low levels of contaminants in the vicinity of the former USTs. An additional site assessment completed in 2008 included the installation of three additional monitoring wells and collection of groundwater samples. Results from the site assessment indicated that petroleum hydrocarbons present in the soil were limited to the vicinity of the former pump islands.

A soil vapor extraction (SVE) pilot test was completed in November 2009. An SVE system was in operation by March 2010 and an estimated 5,339 gallons of gasoline were recovered by the system. Petroleum hydrocarbon concentrations were reduced to below MCLs. Concentrations of 1, 2 DCA and ethylene dibromide (EDB) remained above MCLs. To reduce concentrations of 1, 2-DCA and EDB, the EPA contractor completed three enhanced anaerobic bioremediation injection events that included injecting lactate to reduce oxygen levels, resulting in an anaerobic environment. Concentrations of 1, 2-DCA and EDB were reduced and EPA continues to monitor the site and assess groundwater conditions for compliance with groundwater cleanup standards. ■

Tribal USTs and the Montana Petro Fund

Terry Wadsworth, DEQ

The state of Montana is committed to strong tribal relations that encourage cooperation and collaboration because both sovereigns engage in activities that directly impact each other. Intergovernmental cooperation serves the interests of all Montana citizens while ensuring respect for the sovereign authority of both state government and federally-recognized Indian tribes that fall within the boundaries of the

state of Montana. The Montana Legislature, mindful of its constitutional obligations, enacted laws to provide adequate remedies for the protection of the environment from degradation and to prevent unreasonable depletion and degradation of natural resources. Those laws included the establishment of a Petroleum Tank Release Cleanup Fund (Fund). The Fund was established to provide financial resources through which tank owners and

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Tribal USTs and the Montana Petro Fund – *continued from page 2*

operators may undertake and be reimbursed for corrective action and payment to third parties for damages caused by releases from petroleum storage tanks. LUST cleanups in Indian country can be eligible for reimbursement from the Fund for the applicable percentage of eligible costs caused by a release by doing the following: comply with the state of Montana requirements for design, permitting, testing, inspection, operation, maintenance, recordkeeping and reporting that have been adopted pursuant to the Montana Petroleum Storage Tank Cleanup and

Underground Storage Tank Act. We encourage owners of petroleum storage tanks to know the laws and rules that pertain to hazardous substance storage tanks so that they may be eligible for assistance from the Fund. Exhaustive information about Fund eligibility requirements and petroleum storage tank operation and maintenance requirements are available on the Petroleum Tank Release Compensation Board's web site at <http://deq.mt.gov/pet/default.mcp.x>. ■

AST Compliance

Terry Wadsworth, DEQ

The Montana Legislature established the Petroleum Tank Release Cleanup Fund (Fund) to assist certain tank owners and operators with cleanup of petroleum tank releases (see "Cleanup Fund Eligibility," *MUST News*, spring 2013). The Fund is administered by the Petroleum Tank Release Compensation Board (Board). Protection of the public and the environment is accomplished through proper tank management; diligent leak detection; and prompt response, adequate investigation, and timely cleanup of petroleum tank releases. To receive reimbursement from the Fund, owners and operators must be in compliance with the environmental protective rules that have been adopted by the Board.

Leakage and overfills can adversely affect the environment and can lead to costly cleanups for the owner and the state. To avoid expensive oil spills and to be eligible for the Fund, be sure your above ground storage tank (AST) is constructed and maintained in accordance with Fund eligibility requirements and that you perform routine maintenance on both old and new tank systems to keep them in compliance.

Montana's Fire Prevention and Investigation Section (FPIS) in the State Fire Marshal's office of the Department of Justice, authorized by Title 50, chapter 3 of the Montana Code Annotated, periodically updates its storage tank requirements. The Board requires ASTs to be in compliance with current FPIS requirements in order to be eligible for assistance from the cleanup Fund. This sometimes requires owners to improve and update their existing tanks.

To be eligible for assistance from the Fund, an AST system is required to be in compliance with the following:

Above Ground Storage Tanks at a Commercial Facility

- The system must have an audible alarm that will sound when the liquid level reaches 90 percent tank capacity, or a means must be provided to automatically stop the flow of liquid into the tank when the liquid level reaches 98 percent capacity, or to restrict flow of liquid into the tank to a maximum flow rate of 2.5 gallons per minute when the liquid in the tank reaches 95 percent capacity;
- The tank shape, size, and type must be consistent with sound engineering design;
- The foundation must be designed to minimize corrosion in any part of the tank resting on the ground or on the foundation;
- The tank is on a foundation made of concrete, masonry, piling or steel;
- The foundation must be designed to minimize the possibility of uneven settling of the tank.

Above Ground Piping at a Commercial Facility

- The pipes, joints, and valves must be liquid-tight;
- Any portion of the piping that is in contact with soil must be protected from corrosion in accordance with good engineering practice; and
- The piping system must be substantially supported and protected from physical damage and excessive stresses arising from settlement, vibration, expansion or contraction.

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AST Compliance – *continued from page 3*

Fuel dispensers

- The dispensers must be mounted on a concrete island;
- The dispensers must be protected against collision damage;
- A listed emergency breakaway device must be installed on each hose dispensing Class I liquids;
- Each fuel dispenser must have an emergency shut off device or electrical disconnection;
- The dispensing devices must be bolted securely in place.

An owner or operator seeking reimbursement for eligible costs must be in compliance with the applicable state and federal laws and rules that the Board has determined pertain to the prevention and mitigation of a petroleum release from a petroleum storage tank at the time that the release was discovered. These compliance requirements can be found in ARM 17.58.326 and include provisions of the International Fire Code (IFC 2009) applicable to above ground storage tanks, provisions of the National Fire Protection Association Uniform Fire Code, Code for Motor Fuel Dispensing Facilities and Repair Garages (NFPA 30A, 2008) applicable to above ground storage tanks, and provisions of the National Fire Protection Association Uniform Fire Code,

Standard for the Installation of Oil-burning Equipment (NFPA 31, 2006) applicable to above ground storage tanks attached to burners. A copy of the aforementioned Codes may be obtained by contacting the Board staff or by contacting the above-named associations directly at the addresses listed in ARM 17.58.326.

The specific rule language (ARM 17.58.326) can be found on the web at <http://www.deq.mt.gov/dir/legal/Chapters/CH58-03.pdf>. The Board is considering requiring that facilities be inspected for these requirements before eligibility to the Petroleum Tank Release Compensation Fund can be granted. If you want to be involved in that discussion we recommend you attend the Board meetings. Their locations and times are published on the Board’s website at <http://deq.mt.gov/pet/meetings.mcp>.

It is important to remember that on October 18, 2011, the Environmental Protection Agency issued both a direct final (76 FR 64245) and a proposed rule (76 FR 64296) to amend the date by which farms must prepare or amend and implement their Spill Prevention, Control, and Countermeasure (SPCC) Plans, to May 10, 2013. The Board has required the SPCC plan as a component of eligibility. For more information on the SPCC, visit EPA’s website at www.epa.gov/oilspill. ■

Fuel Volatility and Seasonal Fuel Blends

Jeff Kuhn, DEQ

Montanans are familiar with the increase in gasoline prices that seems to be timed with the Memorial Day weekend throughout the US. Many people believe this is due solely to the increased demand for gasoline that heralds the beginning of the summer tourism season. Montana, with some of the longest stretches of highway in the nation, would be a good candidate for a national study on the seasonal increase of gasoline consumption by state residents to monitor supply and demand and predict price spikes. In actuality, states with larger populations, such as California, have had considerable discussion on seasonal price spikes where population plays a more significant role in consumption than the number of miles driven by state residents. However, consumption plays a lesser role in the seasonal increase of gasoline prices in the summer and the decrease of gasoline prices in the fall.

The seasonal rise in gasoline prices in late May is timed with increased temperatures that affect fuel volatility. Different parts

of the country have different regulations that control the property of gasoline known as Reid Vapor Pressure (RVP), measured in pounds per square inch. Liquids with a RVP equal to or greater than atmospheric pressure (approx. 14.7 psi) would boil off in the atmosphere. This would clearly be bad for the environment. Increasing temperature increases volatile organic compound (VOC) emissions due to evaporation. And increased VOC emissions contribute to ground level ozone and atmospheric smog.

In order to reduce pollution, summer fuels use different types of oxygenates and additives to lower RVP. Depending on the part of the country, the EPA’s standards mandate an RVP below 9.0 PSI or 7.8 PSI for summer-grade fuel. Some local regulations have stricter standards. These compounds also allow gasoline engines to burn more cleanly – summer fuel is cleaner than winter fuel. Cleaner fuels also reduce overall gasoline consump-

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Fuel Volatility and Seasonal Fuel Blends – *continued from page 4*

tion and contribute to energy conservation measures. Refineries are typically shut down twice a year for a short period of time to accommodate the switch in fuel composition from winter to summer and back again.

Why is “summer fuel” more expensive than “winter fuel?” In general terms, the lower the RVP the more expensive the fuel is to produce. Winter grade fuels include a greater amount of an inexpensive compound, butane (butane has an RVP of 52 psi). A suite of more expensive compounds is blended into summer

fuels to create a lower RVP that meets summer RVP regulations in different parts of the country. There are approximately 20 different fuel standards across the country that result in the creation of “boutique fuels” (see “Boutique” Fuels, *MUST News*, spring 2013). Because butane is cheap and readily available for winter use, more gasoline can be produced in the fall at exactly the time when gasoline consumption decreases across the country. Thus, more gasoline is available in the fall at a less expensive price. ■

Owner/Operator Involvement: Why Bother?

Rebecca Ridenour, DEQ

In the DEQ Petroleum Tank Cleanup Section (PTCS), we often hear the following phrases from people: “Why hasn’t the state cleaned up my property?”, “Why is my release taking so long to clean up?”, or “You people were out here last year and dug up my property; why do you want me to do more work?”

These are great questions that actually lead to complex and detailed answers. Too many, petroleum cleanup seems daunting, overwhelming, expensive, and as if there is no end in sight. Petroleum releases are complex; there is no way to get away from that fact. But, when the property owner or operator (O/O) of the release is engaged in the process, understanding increases and fears are reduced. This article suggests how O/Os can become more engaged in the cleanup process and what benefits can result.

DEQ has seen a recent trend in PTRCB-reimbursable cleanup toward O/Os actually signing a designation form so that an environmental consultant can receive direct reimbursement. At first glance this could seem like a simple and attractive alternative. What this does, however, is take the O/O out of the communication loop.

When an O/O is involved in the cleanup process, they will know what work is being requested and why. DEQ is beginning to request that consultants include a closure plan in all submitted reports. An O/O who is questioning why cleanup is taking so long should now start to see an outlined plan of action for release closure. The O/O should actually be involved in the cleanup plan and timing. Work plans and on-the-ground efforts

need to be outcome-oriented; that is, *closure-oriented*. When the owner is involved, he/she can help drive all work plans toward that closure goal.

Just because a closure plan is included in a report does not mean that closure will occur in short order; nor does it mean that changes won’t be made to the plan. But, when an O/O is involved, they will understand why the time frame is proposed and why changes to a cleanup plan might be needed. In Montana, investigation and cleanup of a petroleum release are the responsibility of the O/O. What this means is that the O/O should be dictating when work will occur. In the situation where a costly cleanup effort is needed, the O/O is the one who will have to work that alternative into their business strategy.

DEQ PTCS management recently attended the National Tanks Conference in Denver, Colorado. Unambiguous presentation sessions repeatedly brought up the importance of having O/Os involved in the cleanup process. In many situations, the O/O is also the property owner – which begs the question: Why would any property owner not want to be directly involved in the betterment of their property? The fact that this national conference highlighted O/O involvement suggests that it is a national issue. In order for cleanups to be effective and efficient, all parties need to be involved and communicate. DEQ has seen many cleanup efforts stall because the necessary people were not involved in the cleanup process. Once everyone comes to the table, cleanup progresses more seamlessly and fairly painlessly. Keeping the momentum is ultimately what will bring a release to closure. ■

Photo Essay



Monitoring wells can accumulate water if the rubber gasket beneath the flush mount cover is deteriorated or missing and adequate drainage does not exist inside the collar. This can freeze above the PVC well cap in the winter, making sampling efforts extremely problematic.

A Note from the Remediation Division Management Team

Jenny Chambers, Remediation Division Administrator, DEQ

I usually leave the *MUST News* article writing to the experts in the tank programs; however, once in a while there are items to share that may directly or indirectly affect our stakeholders, the public or other entities. On behalf of the management team, I want to announce that the DEQ Remediation Division has some exciting news that will not only streamline our internal processes, but will also better help us do the best job we can of protecting human health and the environment.

The Remediation Division recently underwent a reorganization based on the evaluation and analysis of changes and goals within the division. The reorganization went into effect in November. The goal is to rally behind a division-wide strategy that supports the overall DEQ mission and strategic framework.

Over the past year there have been extensive cross program discussions to formulate the management team's vision and frame the new organization structure changes.

Overall structure and direction is based on a unified project management approach with the ultimate goal to improve outcomes and help frame the budget planning process. Existing full-time employee positions have also been streamlined, resulting in an overall cost savings.

The customer service and focus on continual improvement that our stakeholders have seen over the years will not change. Some of the changes that will improve processes and create efficiencies include:

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A Note from the Remediation Division Management Team – continued from page 6

- Decentralizing the administrative support staff and integrating them into their specific sections. This will help focus customer service on program-specific roles;
- Aligning the Brownfields grant and federal facilities remediation planning and coordination under one section. This section will now be called the Federal Facilities and Brownfields Section (see the *DEQ Brownfields Update* article);
- Consolidating the leaking underground storage tank program under one section to develop systemic planning and overall long-term plans on release sites. This section will now be called the Petroleum Tank Cleanup Section (see the *Petroleum Tank Cleanup Section – Aligning Resources* article); and
- Realigning some reporting structures; this has created some new leadership positions that will serve to improve program efficiencies.

Over the next several months, we will be busy shaping our new direction. This will include determining goals and expectations, establishing a Division-wide strategic plan, preparing for the upcoming legislative session, and networking and getting feedback from our stakeholders to ensure that service and support goes both ways.

We look forward to continuing to serve our great state of Montana and all of you! ■

DEQ Brownfields Update

Jeff Kuhn, DEQ

The Remediation Division reorganization consolidated the Hazardous Substance Brownfields Program and the Petroleum Brownfields Program into one coordinated Brownfields Program.

Petroleum Brownfields Coordinator, Ed Kiely, indicated “this is like reverse ‘Continental Drift’ bringing the disparate pieces of the supercontinent ‘Pangaea’ back together.”

Members of the newly formed Federal Facilities and Brownfields Section (FEDBRO) are excited about their new mission and ready to take on the challenges of assessing and cleaning up Federal Facilities and Brownfields sites located throughout Montana. Federal Facilities include all sites owned

by the federal government that have documented releases of hazardous substances or petroleum to the environment. Such facilities include many of Montana’s current and former military bases and missile control sites. Jason Seyler will coordinate the overall activities of the Brownfields Program, with a strong focus on outreach to Montana’s communities. Jason can be reached at 406-841-5071 or jseyler@mt.gov. Ed Kiely will continue in his role as Petroleum Brownfields Coordinator and oversee active assessment work and coordination with Montana’s Economic Development Authority representatives, the DEQ Petroleum Tank Cleanup Section, and the Montana Petroleum Tank Release Compensation Board. Ed can be reached at 406-841-5057 or ekiely@mt.gov. ■

Petroleum Tank Cleanup Section – Aligning Resources

Rebecca Ridenour, DEQ

The Petroleum Technical Section, now called the Petroleum Tank Cleanup Section, has seen some changes as a result of the Remediation Division reorganization. Before the reorganization, the Section oversaw most petroleum tank cleanups in Montana. However, oversight of certain federally regulated cleanups was overseen by the former LUST-Brownfields Section, which is federally funded through a grant from the LUST

Trust Fund. Both groups oversaw cleanups that were dictated by the same Montana law and rules; the only difference was the source of funding. Rather than continue to have two work units do the same work, DEQ has combined the two programs. The Petroleum Tank Cleanup Section is still part of the Hazardous Waste Cleanup Bureau. Rebecca Ridenour is the supervisor of the newly named section and can be reached at [406-841-5059](tel:406-841-5059) or ridenour@mt.gov. ■

At-Risk Steel Underground Storage Tanks in Montana: The Best Ways to Protect Yourself as an Owner/Operator

Redge Meierhenry, DEQ

Background

Steel tanks in Montana comprise almost half of the storage tank population when compared to other construction materials. Notably, steel tanks in Montana make up 48 percent of the total active tank population.

Although the Montana database containing the inventory of steel tanks has not been analyzed, it is estimated that the bulk of the underground storage tanks (USTs) installed since the early 1990s in Montana are installed to Steel Tank Institute (STI) standards. STI has developed a national registration program such that when tank manufacturers fabricate steel tanks to STI standard, they are provided with a 30-year warranty against failure due to *external corrosion*. The warranty does not indemnify the owner from *internal corrosion*; that will be discussed later.

With the warranty comes a strong quality assurance inspection program that STI administers on behalf of licensed manufacturers. Inspectors arrive at a tank shop unannounced and at random to verify that the fabricator is meeting STI's requirements. There were a number of improvements in the sti-P3® design during the '70s and '80s, including the development of urethane coatings and enhanced methods of applying fiberglass reinforced plastic as an external corrosion barrier. Magnesium anodes, attached to the tank by wire, were virtually replaced during that time by an innovative weld-on zinc anode design. ¹

Underground Storage Tanks Last Forever, Right?

It is critical that tank owner/operators have the fundamental understanding that USTs, no matter the construction material, have a finite *useful life* ² and must be managed as a "wasting asset." STI warranties steel tanks constructed and installed to their standard for 30 years. A "wasting asset" is defined as an item that irreversibly declines in value as a function of time. Wasting assets include vehicles, machinery and other fixed assets. Accountants attempt to quantify the amount that assets decrease in value over time by assigning depreciation schedules to wasting assets, therefore, recognizing the decrease in value each year.

In the case of USTs, there is an inverse relationship between the value of the asset and the environmental risk that they produce for the tank owner over time. There are currently no mathemati-

cal models that examine this relationship, however one is able to distinguish that a correlation exists between these two factors.

Why Should I Care About Internal Corrosion?

Remember that the warranty on steel tanks does not protect against internal corrosion. Below are pictures of a steel tank removed from the ground in eastern Montana in 2010. An investigation was conducted by the DEQ for the cause of a large petroleum release that came from the tank. The first picture is the outside of the steel tank and the second picture is the inside of the steel tank. Visual examination of the interior section of the steel tank around the perforation revealed that the topography of the metal surface on the inside of the tank is indicative and normally associated with a phenomenon known as Microbial Induced Corrosion (MIC). For more information on Microbial Induced Corrosion, see the article, "Microbial Corrosion and Ethanol Blended Fuels," originally published in the 2012 Fall Issue of *MUST News*.

If you think that MIC is not an issue for owners of a steel tank, or that, "This can't happen to me," remember:

- Water in the fuel will phase separate from any mixture percentage or blend of ethanol in the base fuel stock when saturation point is reached;
- Water may be entrained into the fuel along the transportation route to the facility and this makes the fuel stock susceptible to microbial growth; and
- As steel tanks age, the probability that the depth of metal etching related to internal corrosion, if it is occurring, is increasing.



Outside view of a hole in a leaking steel UST

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At-Risk Steel Underground Storage Tanks in Montana: – continued from page 8



Inside view of the same hole in the same leaking UST

MIC and Internal Corrosion! What Should I Do If I Am a Steel Tank Owner?

At this point in the discussion, you should be thinking that if you have an older steel tank, you are at risk of developing deep pitting due to internal corrosion that could be linked to microbial growth. If careful maintenance practices are not followed, deep pits could eventually result in product leaks to the atmosphere.

While many tank owners utilize Automatic Tank Gauges (ATG) in Montana, history has proven that this equipment, though sophisticated, is not sufficient as a stand-alone method to alert owners of small leaks. This is because ATG leak alarms are often ignored by owners and a large amount of product is able to leak out of a tank even though the perforation of the material is relatively small.

We are aware that tank owners are sensitive to inventory losses and often react faster to **lost income** over an ATG failed leak test. Because of this, DEQ recommends that steel tank owners implement a backup method of leak detection for all USTs, but particularly steel tanks. This ensures that suspicious tank operations caught by your ATG failed leak tests are confirmed by a back-up method of tank detection. **The backup method of tank leak detection will be discussed shortly.**

The Automatic Tank Gauge: The Most Underutilized Equipment on Site

The ATG is a superb piece of modern electronic technology with enormous potential for enhancing business applications at retail fuel facilities. Properly installed and programmed, the ATG that UST owner/operators are familiar with provides

accurate, reliable measurements of product volume and temperature.

An ATG, used in conjunction with other leak detection methods, is an optimal strategy; however, little to none of this potential is being realized at the overwhelming majority of retail facilities. An ATG uses a probe located in each tank to measure fuel and water levels. The probe consists of a vertical hanging rod with two donut-shaped floats that slide along the rod. One float rests on the surface of the fuel and the other float, if the system is equipped, detects water that may be present in the bottom of the tank. The position of the floats tells the ATG console how much fuel and water are present in the tank. The probe rod also has thermistors to measure the fuel temperature. Leak tests are conducted by: the gauge sampling at periods of quiet time in the tank; determining whether the tank is losing (or gaining) product; and accounting for temperature effects on volume changes in the tank. Typical use of the ATG provides monthly leak tests at either a .2 gallon per hour leak test rate or .1 gallon per hour test leak rate depending on module programming.

The ATG typically employed by owner/operators is little more than a substitute for the venerable measuring stick, but with the added feature of regulatory compliance for required leak detection tests as mentioned above. When the ATG is used in conjunction with Statistical Inventory Reconciliation (SIR), another approved leak detection method, the ATG can supply essential input into a SIR method that cannot be performed in stand-alone mode. These additional benefits are:

- Meter calibration assessments;
- Dispenser delivery rates;
- Delivery audits;
- Optimal re-order policy generation;
- Blend percentage accuracy;
- ATG self-assessments; and
- Provision for a back-up method of leak detection.

Automatic Tank Gauges Report, But Do You Listen?

Regulations require leak detection systems on USTs in Montana, and most owner/operators use the ATG as their primary method of tank leak detection. While an ATG is a sophisticated piece of electronic equipment, catastrophic releases have a record in Montana of being unnoticed or unmanaged by tank operators for a variety of reasons. Commonly, tank owners and operators **ignore failed test reports or tank alarms alerting of a failed leak test as mentioned above.**

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At-Risk Steel Underground Storage Tanks in Montana: – *continued from page 9*

Proper response to failed ATG leak tests can be problematic for some operators, as evidenced by several recent catastrophic petroleum releases. In one large tank leak case (greater than 1000 gallons released to the environment), it became apparent to the owner, after noticing inventory losses over several months time, that perhaps there was a tank perforation. The leak was confirmed when inventory losses were significant enough that the tank operator decided to further investigate the integrity of the tank. By then, of course, it was too late to avoid a costly cleanup. Because of instances like these, DEQ recommends that a secondary form of tank leak detection, such as the SIR method be implemented. This will help tank operators react quickly, and with confidence, to failed ATG leak tests.

How Does the SIR Method Work?

By allowing an ATG to access sales information directly through the dispensing meter, SIR performs sophisticated statistical analysis on inventory data using the amount pumped, the amount delivered, and tank liquid volumes to establish whether the storage system is tight. It allows an operator to keep inventory records without the risk of human error. As

sales volumes are monitored on an on-going basis, SIR also detects evidence of continuous losses unrelated to sales volumes and therefore consistent with leakage. It also differentiates between losses occurring when lines are pressured or when they are idle.

Although SIR is able to function with a wooden stick, the increased accuracy and consistency of ATG data is able to improve the accuracy and reliability of SIR results. The use of SIR does not require that an UST be out of service and, most importantly, SIR’s test encompasses the product pipe all the way to the dispenser nozzle. Data collected by the tank owner or operator is sent to a SIR vendor, who analyzes the data to determine whether there is a loss trend in the UST system. Based on the statistical analysis of the data supplied by the UST operator, the SIR vendor supplies the client (the tank owner/operator) with a report that indicates whether the UST system is leaking.

Below is an example of a SIR report from an approved vendor that meets department requirements for performance.

CITLDS Continual Reconciliation Report

Tank Owner _____
Facility Name _____
Facility Location _____

TANK MONITORING REPORT					
Tank ID – Product	Tank Capacity	Period Covered	System Status Pass Fail Inconclusive	Test Date	
1 MidGrade	11500	06/01/2011–06/30/2011	Pass	06/30/2011	
2 Unlead	23000 (2M)	06/01/2011–06/30/2011	Pass	06/30/2011	
3 Premium	11500	06/01/2011–06/30/2011	Pass	06/30/2011	
4 #2 Diesel	11500	06/01/2011–06/30/2011	Pass	06/30/2011	
4D1 #1 Diesel	5000	06/01/2011–06/30/2011	Pass	06/30/2011	
5 RedDye	10000	06/01/2011–06/30/2011	Pass	06/30/2011	

LINE MONITORING REPORT					
Associated Tank ID – Product	Tank System Capacity	Period Covered	System Status Pass Fail Inconclusive	Test Date	
1 MidGrade	11500	06/01/2011–06/30/2011	Pass	06/30/2011	
2 Unlead	23000 (2M)	06/01/2011–06/30/2011	Pass	06/30/2011	
3 Premium	11500	06/01/2011–06/30/2011	Pass	06/30/2011	
4 #2 Diesel	11500	06/01/2011–06/30/2011	Pass	06/30/2011	
4D1 #1 Diesel	5000	06/01/2011–06/30/2011	Pass	06/30/2011	
5 RedDye	10000	06/01/2011–06/30/2011	Pass	06/30/2011	

At-Risk Steel Underground Storage Tanks in Montana: – continued from page 10

MONTHLY MONITORING DATA QUALITY REPORT					
Associated Tank ID – Product	Tank System Capacity	Period Covered	Minimum Detectable Leak (gph)	Threshold (gph)	
1 MidGrade	11500	06/01/2011–06/30/2011	0.030	0.015	
2 Unlead	23000 (2M)	06/01/2011–06/30/2011	0.030	0.015	
3 Premium	11500	06/01/2011–06/30/2011	0.030	0.015	
4 #2 Diesel	11500	06/01/2011–06/30/2011	0.030	0.015	
4D1 #1 Diesel	5000	06/01/2011–06/30/2011	0.030	0.015	
5 RedDye	10000	06/01/2011–06/30/2011	0.030	0.015	

This report provides the results of continual reconciliation testing for tanks and associated lines for monthly monitoring.

Is a SIR Report Right For You?

Tank owner/operators practicing due diligence routinely employ multiple methods of leak detection for their tanks and piping. This built-in redundancy assures the tank operator that suspect events will be noticed early so that appropriate action can be taken to ameliorate the effects of a catastrophic petroleum release to the environment. This also eliminates needless financial impacts to the owner. Department rules allow that the hybridization of ATGs and the SIR method is an acceptable form of tank and pipe leak detection.

That Sounds Great, But What Will It Cost Me?

The cost may vary slightly depending on which vendor you use. According to one vendor, “In general, pricing for SIR data submitted electronically is \$7.50 to \$12.50 per tank per month.”³ Most SIR providers have provisions for electronic data entry and submittal via web portals, or they can accept data in spreadsheet formats. The bottom line is that the \$90-150 per tank per year far outweighs the consequences and costs of a catastrophic leak. It will also give you the peace-of-mind that leaks will be detected quickly.

Conclusion

As a tank owner/operator, there are plenty of things you have to worry about. Why let leak detection be one of them? By employing effective leak detection methods and properly responding to leak alerts, the potential costs and headaches associated with cleanups can be reduced. Selecting a SIR vendor and using it in conjunction with ATGs is a good course of action for a tank owner/operator, regardless of how old the

tanks are or the type of tanks in inventory. This is particularly important if you own and operate a steel tank that is nearing the end of its useful life. ■

¹ UST History, Excerpted from the Handbook of Storage Tank Systems, Wayne Geyer, Executive Vice President, Steel Tank Institute

² Useful life is defined as an estimate of how long one can expect to use an income-producing item in a trade or business setting. Useful life usually refers to the duration for which the item will be useful (to the business), and not how long the property will actually last. Many factors affect a property’s useful life, including the frequency of use, the age when acquired and the repair policy and environmental conditions of the business. The useful life for identical types of property will differ from user to user depending on the above factors, as well as additional factors such as foreseeable technological improvements, economic changes and changes in laws

³ Warren Rogers Associates



Remediation Division Building Relocation

The DEQ Remediation Division has recently been relocated to the Cogswell building at 1401 Lockey Avenue in Helena. The Petroleum Release Compensation Board has been relocated to 1400 8th Avenue.

While these moves are only temporary due to some issues with the old building, we continue to move forward in getting our

work done for the public and our regulated community. All phone numbers and email addresses remain the same and the mailing address is still P.O. Box 200901, Helena, Montana, 59620. If you have any questions, please contact us at 406-841-5000. ■

Department of Revenue Notifies Business Owners of Equipment Tax Exemption

Ted Brewer, DOR

Beginning on January 1, 2014, a new state law takes effect exempting tens of thousands of Montana businesses from paying tax on and reporting business equipment. Some 53,000 Montana businesses will receive letters from the Department of Revenue the first week of December reminding them of the change.

Under Senate Bill 96, passed during the 2013 Legislative Session, businesses that own less than \$100,000 worth of equipment will now be exempt from paying taxes on and reporting it. Businesses that own equipment with a total statewide aggregate market value of more than \$100,000 will be exempt from paying taxes on the first \$100,000 in equipment value. Those businesses are still required to report their equipment.

Under the current law that ends on December 31, businesses that owned less than \$20,000 in equipment were exempt from the tax. Businesses that owned more than that were not exempt,

having to pay taxes on all of their equipment. All businesses had to report their equipment, no matter the value.

“Enacting this law is an important milestone for Main Street, Montana,” said Department of Revenue Director Mike Kadas. “To exempt tax on the necessary tools that small business owners in Montana need to successfully run their businesses is a huge step towards improving their lives and the lives of their employees, families and communities. It makes Montana an even better place to live, work and play.”

Senate Bill 96 also lowered the tax rate for businesses with between \$100,000 and \$6 million in equipment. Those businesses will now pay a rate of 1.5 percent. Businesses with more than \$6 million in equipment will continue paying 3 percent.

People with questions are encouraged to call toll free at (866) 859-2254, or in Helena at 444-6900, or visit the Department of Revenue’s website at <http://revenue.mt.gov>. ■

jUST Jargon – Bollard

Originally, bollard was the name given to the short, thick, iron post mounted on a wharf to which a ship tied up when it docked. The British began using the same term to describe a post, connected by rope to other similar posts, to divert automobile traffic.

At a gas station, bollard is the term applied to the heavy protective posts set at the ends of pump islands to prevent vehicles from coming in contact with the dispensers or other pump-island fixtures. Bollards are also used to protect above ground storage tanks.

Petroleum Tank Release Compensation Board Blotter

At its September 23, 2013, meeting, the Petroleum Tank Release Compensation Board (Board) welcomed Mr. Tom Downey, who was appointed by the Governor to take the place of Karl Hertel as a representative of the insurance industry. Mr. Downey will serve a three year term. Jerry Breen, a representative of the independent petroleum marketers and chain retailers, and Roger Noble, a representative of the petroleum release remediation consultants industry, were reappointed for an additional 3 year term.

The Board considered two applications for eligibility. One release was determined eligible for reimbursement from the Petroleum Tank Release Cleanup Fund (Fund), while the second release was determined ineligible for the Fund because the release was discovered before April 13, 1989. The Board ratified payment of 184 claims, totaling \$901,647.33, which had been reimbursed between July 17, 2013 and September 4, 2013. Two claims were denied; one because the release had reached its statutory reimbursement cap, and the other because the claimant withdrew the claim from PTRCB review. Two claims for amounts greater than \$25,000 were reviewed by the Board and approved for payment. The estimated reimbursement for the two claims was nearly \$56,000.00.

The Petroleum Technical Section of the Remediation Division presented a summary of a work plan that has an estimated cost greater than \$100,000. The plan reviewed was for work to be conducted at a site in Cut Bank. The Department also provided an update on a system to be installed at a site on Front Street in Butte.

The Board granted an extension to the owners of a site in Billings to complete a MAPA hearing on eligibility, allowing more time for the owner to gather additional information to confirm whether the release was a result of activities on their site.

The revenues received by the Fund have continued to be above projections for the year.

At its November 18, 2013, meeting, the Board considered four applications for eligibility. All four releases were determined eligible for reimbursement from the Fund. The Board ratified payments of 169 claims, totaling \$1,173,877.87, which had been reimbursed between September 11, 2013 and October 23, 2013. Three claims for amounts greater than \$25,000 were considered and approved for payment. The estimated reimbursement for the three claims exceeded \$148,000.00.

Elections were held for the positions of Presiding Officer and Vice-Presiding Officer. Roger Noble was re-elected to the position of Presiding Officer, while Roy Morris was re-elected to the position of Vice-Presiding Officer.

The Petroleum Tank Cleanup Section of the Remediation Division presented a summary for three work plans that each has an estimated total cost greater than \$100,000. Two of the plans reviewed were for work to be conducted at sites in Billings, and one for a site in Miles City. The Department also provided additional information on a system to be installed at a site on Front Street in Butte.

The Board set the schedule of its five meeting dates for the 2014 calendar year, as follows: January 27, April 14, June 16, August 11, and October 20. All meetings are currently scheduled to be held in Room 111 at the Metcalf Building, 1520 East 6th Avenue, Helena, MT, and are scheduled to begin at 10:00 a.m. Agenda and packet information for the Board meetings is available on the Board's meetings webpage at <http://deq.mt.gov/pet/BoardMeetings.mcp>. Minutes from the Board's meetings can also be found on the meetings webpage. ■

Petro Factoid. . . Archimedes Principle

A law of physics that says a body immersed in liquid is buoyed up by a force equal to the weight of the fluid displaced by the body.

When underground tanks are installed in regions where the groundwater level is high, calculations have to be made to determine how much weight will be required to keep a tank from floating out of the ground. Downward force greater than this must be designed into the system to keep a tank from floating.

DEQ List Services

Janet Sanderson, DEQ

An electronic mailing list, or email list, is a type of email that allows for widespread distribution of information to many users. It is similar to a traditional mailing list that might be kept by an organization for sending publications to its members or customers.

DEQ’s mailing list services are open to anyone who wants to join them. Joining a list service is called “subscribing” and leaving a list is called “unsubscribing.” DEQ’s list servers allow people to subscribe or unsubscribe through a web-based interface.

You might know this if you are already receiving this newsletter through the *MUST News* list service. If you are not, and are interested in signing up, just enter your name and email address at the following site: <http://svc.mt.gov/deq/ListServe/MustNewsStep1.asp>. If you choose this option and no longer wish to receive a hard copy, please contact Dalynn Townsend at 406-444-3840 or at dtownsend@mt.gov.

DEQ has many other lists that you can subscribe to, including:

- Environmental Consultants (Petroleum Tank Cleanup Section);
- Petroleum Tank Release Compensation Board Interested Parties;
- Discussion mail list for EPA Brownfields information.

For a complete listing of available list service topics, please visit this page: <http://svc.mt.gov/deq/ListServe/AllListsStep1.asp>.

Please be sure to update your email address if it changes; to do so, you must unsubscribe and then sign up again with your new contact information. To unsubscribe from a list, enter your name and email, uncheck any lists you no longer wish to be on and click “submit query.” ■

Fund and Release Status Report

Petroleum Fund Financial Status — Through November 30, 2013, Fiscal Year 2014

(July 1, 2013 – November 30, 2013)

Total Revenue:	\$2,660,867.00
Current and Prior Year Claims Expenditures:	\$2,260,868.00
Outstanding Work Waiting to be Obligated:	\$210,074.56

Petroleum Releases – Through November 30, 2013, Fiscal Year 2014

(July 1, 2013 – November 30, 2013)

New Releases:	12
Releases Resolved (Closed):	53

Summary of Total Petroleum Release Activity

Total Confirmed Releases:	4,590
Total Active Releases:	1,298*
Total Releases Resolved (Closed):	3,311

*Please note that this number includes 53 sites with the status “Transferred to Another Program or Agency” and are not necessarily resolved. The other agency or program could be the EPA or another state-lead program (e.g. the DEQ State Superfund Program).

CALENDAR

PTRCB Business Meeting Dates for 2014

All meetings start at 10:00 a.m.

Montana Department of Environmental Quality

Metcalf Building • Room 111 • 1520 E Sixth Avenue • Helena, MT 59601

January 27, 2014 • April 14, 2014 • June 16, 2014 • August 11, 2014 • October 20, 2014

UST Licensee Refresher Training

Thursday • February 27, 2014

Red Lion Colonial Hotel • 2301 Colonial Dr • Helena, MT 59601

Online registration link is available at:

<http://www.deq.mt.gov/ust>, or

Contact: Dalynn Townsend • (406) 444-3840 • dtownsend@mt.gov

UST Compliance Inspector Initial Training

May 14-15, 2014

Montana Department of Environmental Quality

Metcalf Building • Room 45 • 1520 E Sixth Avenue • Helena, MT 59601

More information and the course registration form can be found at:

<http://www.deq.mt.gov/UST/ustTraining.mcp>, or

Contact: Dalynn Townsend • (406) 444-3840 • dtownsend@mt.gov

Spring Consultants Seminar

March 27, 2014 • 8:30 a.m. – 4:30 p.m.

DEQ Petroleum Tank Cleanup Section & Petroleum Tank Release Compensation Board

Sanders Auditorium • Sanders Building (DPHHS) • 111 Sanders • Helena MT 59601

Contact Rebecca Ridenour • (406) 841-5059 • rridenour@mt.gov

UST Compliance Inspector Initial Training Class

DEQ is offering initial training that will qualify individuals to become department-licensed underground storage tank compliance inspectors. Training will be conducted by Ben Thomas and department staff personnel on May 14-15, 2014. Ben has been working with tank operators, regulators, inspectors and service providers since 1986. He was first a regulator and now is an independent consultant and senior trainer with UST Training. Training will be held at the DEQ

Metcalf building in Helena, located at 1520 E. 6th Ave. Following classroom training, attendees will have the opportunity to take the compliance inspector written test and must also pass a field practical examination to become licensed as an underground storage tank compliance inspector.

For more information, contact Dalynn Townsend at 406-444-3840 or dtownsend@mt.gov. ■

MUST News is a quarterly newsletter produced by the Montana Department of Environmental Quality to inform and update petroleum storage tank owners and operators, environmental consultants, and others interested in developments about underground storage tank operation, rules, release prevention, remediation, and reimbursement. The information in this newsletter is provided to assist readers in understanding the issues discussed, but does not alter any applicable legal requirements or replace any applicable laws, regulations, policies, or procedures.



Underground Storage Tank Act Enforcement Cases Resolved During the 4th Quarter of 2013

The DEQ Enforcement Division closed the following enforcement cases during the 4th quarter of 2013:

Paper Dollar Bar, Inc., resolved violations at Mars Gas and Grocery in Sweet Grass. The violations were for the failure to have trained Class A, B, and C operators, and failure to have the vent standpipes extended to the required height. Paper Dollar returned to compliance by paying a penalty, training Class A, B, and C operators, and extending the vent standpipes.

Cabin Creek Landing, LLC, in Marion, resolved the violations of failure to conduct release detection monitoring, failure to obtain

a compliance inspection 90 days prior to the operating permit expiration date, and failure to retrain its operator after a significant violation in the area of leak detection. Cabin Creek Landing returned to compliance by paying a penalty, maintaining and submitting monthly tank and line leak detection monitoring records, and obtaining a re-inspection of the facility's UST system within the required timeframe.

For more information, contact the Enforcement Division's Shasta Steinweden at (406) 444-3109. ■

MUST News Acknowledgements

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