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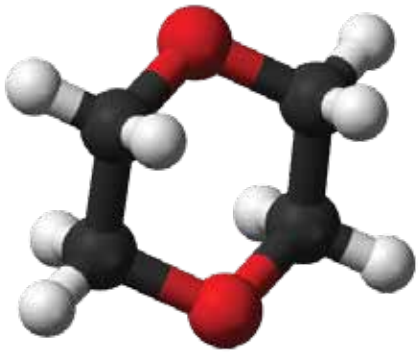
Ask The Expert: Volatile Vs. Semivolatile Organic Analysis For 1,4-Dioxane?

The primary use for 1,4-dioxane in the United States was, and still is, to stabilize chlorinated solvents (*e.g.,* 1,1,1-trichloroethane). This compound is considered an emerging contaminant; its possible presence has resulted in the recent reinvestigation of some remediated sites because 1,4-dioxane was not a compound that was evaluated during the initial site investigation. Steps are currently being taken to eliminate the use of 1,4-dioxane as a chlorinated solvent stabilizer; due to the prevalent use of 1,4-dioxane in the past, this compound has become a compound of potential concern at industrial sites where chlorinated solvents were previously used.



Ball and stick 3-D model of the 1,4-dioxane molecule. (Source: Wikipedia.)

The compound 1,4-dioxane can be analyzed as both a volatile organic compound and as a semivolatile organic compound by GC/MS. Typically, the GC/MS instruments are operated in selected ion monitoring (SIM) mode to increase instrument sensitivity and obtain lower detection limits. Low detection limits are desired for this compound because it is a suspected carcinogen and most site cleanup goals are in the single-digit part-per-billion range. For example, on October 19, 2011, the State of New Hampshire announced that the Drinking Water and Groundwater Bureau of the Water Division has requested all public water supplies to sample for 1,4-dioxane using a reporting limit of 0.25 µg/L; beginning in November 2011, the Waste Management Division will require all analyses for 1,4-dioxane to utilize an analytical method that achieves a reporting limit of 0.25 µg/L.

There are pros and cons associated with analyzing 1,4-dioxane as either a volatile organic compound or a semivolatile organic compound. One advantage of analyzing this compound as a volatile organic compound is the absence of a laboratory extraction step, which saves both time and money; one disadvantage is that carryover after analyzing samples and standards with concentrations of 1,4-dioxane at the calibration midpoint and above is sometimes observed. Several disadvantages exist when analyzing 1,4-dioxane as a semivolatile organic compound, including the high solubility

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Brownfield Redeveloped As A Recreational Destination In Lancaster County, Pennsylvania

The Kroger Company and its wholly owned company, the Turkey Hill Dairy, are deeply committed to preserving Lancaster County's farmland and open spaces. As such, rather than constructing a brand new building, the company chose to undertake an adaptive reuse project and rehabilitate a vacated building in Lancaster County's Borough of Columbia for the new Turkey Hill Experience.

The site is the former Ashley & Bailey Silk Mill, which had been vacant for more than 25 years. With the assistance of Lancaster County's US EPA Target Assessment Brownfield Grant monies administered by the Lancaster County Planning Commission, the property was methodically moved through the State's Voluntary Cleanup Program (Act 2).

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of the compound in water, potential loss during concentration, and the possibility that the compound may elute very close to the extraction solvent chosen to extract the sample on the chromatographic column - resulting in the 1,4-dioxane peak on the chromatogram potentially being obscured.

Environmental Standards has experience in dealing with both analytical techniques for 1,4-dioxane and has worked with laboratories to modify the analytical methods to eliminate or reduce the issues observed with each analytical technique. Please contact Principal Chemist David Blye or Technical Director of Chemistry/Principal Rock Vitale at 610-935-5577 with questions concerning 1,4-dioxane analysis. ■

United States House Of Representatives Passes Coal Ash Bill

On October 14, 2011, the United States House of Representatives passed the "Coal Residuals Reuses and Management Act" (HR 2273), which prohibits comprehensive federal oversight of coal completion residue (CCR). A critical element of the bill is that CCR does not receive a hazardous waste designation, and is, therefore, not subject to federal regulation.

HR 2273 establishes national standards for coal ash disposal (an obvious reaction to the 2008 Tennessee Valley incident) and requires state-administered permit programs to create enforceable regulations; these regulations are applicable to groundwater monitoring and landfill linings and establish criteria for corrective actions and structures. A major goal of this bill is to protect coal ash recycling and to strengthen its beneficial reuse. CCRs are typically recycled into common construction items such as cement and roofing shingles.

Environmental Standards is closely monitoring this important pending legislation. For the most recent information, contact Technical Director of Chemistry/Principal Rock Vitale at 610-935-5577. ■

(Turkey Hill, Continued from Page 1)

With Environmental Standards' help, the property was evaluated and environmental conditions managed to demonstrate attainment of Act 2 remediation standards.

The Site is a former industrial property, which for nearly 100 years operated as a silk mill and a stove manufacturing facility - until 1989. Currently, the property is owned by Museum Partners, a limited partnership that managed the property redevelopment. On April 28, 2010, a Consent Order and Agreement (COA) was executed by and between the Commonwealth of Pennsylvania; Department of Environmental Protection; Borough of Columbia; Columbia Economic Development Corporation; and Museum Partners, L.P. for the Site. Congruent to the 2010 COA, as the "Seller," Columbia Borough was responsible for the demonstration of attainment of an Act 2 cleanup standard based on non-residential use assumptions. The Kroger Company, parent company of Turkey Hill, and the redevelopment group Museum Partners opened an agri-tourism museum, a convenience store, and a retail fuel dispensing station at the Site on June 10, 2011.

The Turkey Hill Experience includes 26,000 square feet of exhibits, dining areas, and retail space. The facility also features nine interactive exhibit areas that allow visitors to learn more about the dairy culture, the story of the Turkey Hill Dairy, and how the company's top-selling ice cream and iced tea flavors are selected and created.

Exhibits also feature Lancaster County cultural highlights, including some history of the lower Susquehanna River Valley and the rural farming area surrounding Turkey Hill Dairy. Visitors can truly experience what it is like to be a Turkey Hill Dairy ice cream maker for a day, including the opportunity to develop his or her own ice cream flavor. There is an entrance fee to visit the main interactive exhibit area, but a portion of the exhibits are open to the public at no charge. The first floor of the Turkey Hill Experience features a large creamery, which serves the general community.

Turkey Hill Dairy expects 250,000 visitors to Lancaster County's newest destination each year. The Turkey Hill Experience is designed by Boston Productions, the company that also designed The Hershey Story, Connecticut Science Center, and other top attractions throughout the United States.

The Turkey Hill Experience is located at 301 Linden St., Columbia, PA 17512, directly off Route 30 at the Columbia exit. ■

Before - the site is the former Ashley & Bailey Silk Mill, which was vacant for more than 25 years.

After - The Turkey Hill Experience includes 26,000 square feet of exhibits, dining areas, and retail space.

New Jersey Site Remediation Program Proposed Rules

The New Jersey Department of Environmental Protection (NJ DEP) recently published a proposal to amend the Administrative Requirements for the Remediation of Contaminated Sites (ARRCS rules), N.J.A.C. 7:26C; the Discharges of Petroleum and Other Hazardous Substances rules, N.J.A.C. 7:1E; the Underground Storage Tanks rules, N.J.A.C. 7:14B; and the Industrial Site Recovery Act rules, N.J.A.C. 7:26B and to repeal and replace the Technical Requirements for Site Remediation (Technical Requirements), N.J.A.C. 7:26E. The proposal was published in the New Jersey Register at 43 NJR 1935(a).

The intended purpose of the proposed amendments and repeals is to remove all provisions related to the phase-in period during which projects are currently allowed to transition from proceeding under direct NJ DEP oversight to proceeding under the supervision of a Licensed Site Remediation Professional (LSRP). The NJ DEP is also proposing to re-codify all administrative requirements from the ISRA Rules and the UST rules to the Administrative Requirements for the Remediation of Contaminated Sites (ARRCS) rules. The NJ DEP is also proposing to add to the ARRCS rules regulatory and mandatory timeframes by which the remedial investigation must be completed and the remedial action must be implemented. Finally, NJ DEP is proposing to repeal the existing Technical Requirements and to replace the requirements with new Technical Requirements that contain performance-based remediation goals.

A notice of the proposal and the proposal itself may be viewed at www.nj.gov/dep/rules/notices.html.

Proposed new draft forms are available at www.nj.gov/dep/srp/srra/forms/proposed.htm. ■

Laboratory News

Pace Analytical Purchases Xenco Boca Raton Laboratory

Pace Analytical announced on July 25, 2011, that it purchased the assets of the Xenco Boca Raton, Florida, laboratory along with the Miami Lakes Service Center. The laboratories will operate as a part of a fully integrated laboratory network.

ALS Group Acquires Columbia Analytical Services

On November 1, 2011, ALS Group acquired Columbia Analytical Services, an environmental testing laboratory network headquartered in Kelso, Washington, with six locations in the United States. ■

Perchlorate And Other Emerging Contaminants Continue To Be A Focus

An emerging contaminant (EC) is a chemical or material characterized by a perceived, potential, or real threat to human health or the environment or by a lack of published health standards. A contaminant also may be "emerging" because of the discovery of a new source or a new pathway to humans. The Federal Facilities Restoration and Reuse Office recently published the following EC fact sheets:

- 1,2,3-Trichloropropane (TCP) - December 2010
- 1,4-Dioxane - December 2010
- 2,4,6-Trinitrotoluene (TNT) - February 2011
- Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) - February 2011
- Nanomaterials - December 2010
- N-Nitroso-dimethylamine (NDMA) - December 2010
- Perchlorate - December 2010
- Polybrominated Diphenyl Ethers (PBDEs) and Polybrominated Biphenyls (PBBs) - December 2010
- Tungsten - December 2010

Perchlorate is one (highly controversial) example of an EC. This compound has a wide range of applications, including the manufacture of military munitions (mortars, flares, and grenades), solid rocket fuel, pyrotechnics and fireworks, blasting agents, matches, air bags, and certain types of fertilizers. Perchlorate has reportedly been detected in the groundwater at 54 federal facilities and 29 private (Superfund or RCRA) sites in 26 states. US EPA and states are addressing the contamination at many of the sites through investigations and response actions (*e.g.*, blending, providing alternative water supplies, remediating groundwater contamination) or through enforcement actions against potentially responsible parties (PRPs).

Vapor intrusion also is being examined as an EC because of concerns about the vapor intrusion pathway. Volatile chemicals in contaminated soils and/or groundwater can emit vapors that may migrate through the subsurface soils and into indoor air spaces of overlying buildings.

For additional information about ECs, visit the following:

- Agency for Toxic Substances and Disease Registry (ATSDR)
- Contaminated Site Clean-Up Information (CLU-IN)
- Environmental Council of the States (ECOS)
- Federal Remediation Technologies Roundtable (FRTR)
- Interstate Technology & Regulatory Council (ITRC)
- Strategic Environmental Research and Development Program (SERDP) | Environmental Security Technology Certification Program (ESTCP)
- U.S. Department of Defense: Emerging Chemical and Material Risks
- US EPA: Safe Drinking Water Act (SDWA)
- US EPA: Vapor Intrusion ■

National Outlook On Shale Gas

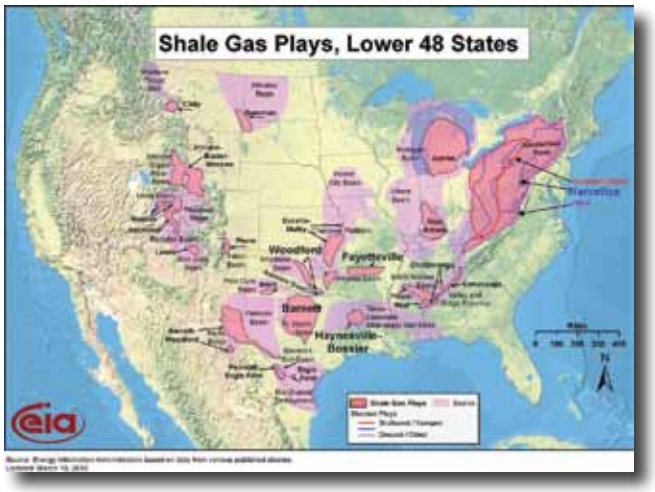
Shale gas represents one of the biggest opportunities for the United States to achieve energy independence. The very first documented commercial gas shale well was drilled in New York in the 1820s. While the word "shale" may be a relatively novel term to those in the northeastern portion of the United States, shale gas production is certainly not new.

Shale gas refers to the natural gas confined within the shale formations and is found in the rock formations or reservoirs beneath the surface of the earth. Shale gas has been around for millions of years. There are numerous shale gas plays across the United States; many of these regions have produced gas for decades through directional vertical drilling – a difficult and uneconomical process.

With the advancement of new technologies to extract the reserves (*e.g.*, horizontal drilling and hydraulic fracturing), access to large volumes of gas is now within reach. The rush to tap this domestic natural resource is underway.

Domestic unconventional shale gas plays include:

- Antrim – northern Michigan Basin; has produced gas since the 1940s, but was not active until the late 1980s.
- Bakken – stretches from Canada into North Dakota and Montana; the drilling and completion of the first horizontal well occurred in the late 1980s.
- Barnett – Fort Worth Basin; the first successful shale production took place in 1981.
- Eagle Ford – South Texas; first well drilled and completed in 2008.
- Fayetteville – Arkansas.
- Haynesville – Louisiana.
- Marcellus – underlines much of Pennsylvania and portions of New York, Ohio, and West Virginia; the initial drilling in the Marcellus region began in 2004. The Marcellus is reported to be one of the largest natural gas reserves in the world.
- Woodford – Oklahoma.
- Utica – formation found below the Marcellus; deep-gas drilling.



Advocates of the natural gas industry tout this energy resource as clean, abundant, and domestic - a source that cuts dependence on foreign oil and creates an economic upswing in a troubling economy. Proponents are concerned that some of the technologies used to tap into this vast resource (*e.g.*, hydraulic fracturing) can be detrimental to the environment. What cannot be denied is the importance of shale gas - its presence, its economic impact, and its future to the United States and the world.

Refer to these websites for more information: geology.com/energy/shale-gas/ and marcellus.psu.edu. ■

Marcellus Shale Production Faces Pipeline Challenges

According to the Pennsylvania Department of Environmental Protection (PA DEP), over 3,591 Marcellus gas wells have been drilled in Pennsylvania from 2008 through August 2011. The wells drilled in the first three quarters of 2011 account for 34% of the total number of wells drilled in the Marcellus Shale. The PA DEP also reports that natural gas production has increased by 60% in the first half of 2011 compared to the last six months of 2010.

The increased production results in an increased need for natural gas pipelines. According to an article in the Pittsburgh Post-Gazette (August 15, 2011), more than half of the interstate natural gas pipeline projects proposed to federal energy regulators since the beginning of 2010 involve Pennsylvania. In addition to the interstate pipelines, there will be

thousands of miles of "gathering lines" that transport the gas from the wells to processing and distribution stations. The Federal Energy Regulatory Commission (FERC) has regulatory authority over interstate pipelines; the Public Utility Commission (PUC) has regulatory authority over pipelines categorized as public utilities (lines that deliver gas directly to a customer). According to the Governor's Marcellus Shale Advisory Commission Report (July 22, 2011), some of the "gathering lines" are not regulated by the PUC or FERC. There are discussions among Pennsylvania lawmakers on how to manage or regulate gas lines not covered by FERC or the PUC.

In addition to FERC and PUC requirements, many of the proposed pipelines may pass over streams or through wetlands or other ecologically sensitive areas. In these situations, the pipelines will be subject to federal and state environmental requirements, such as The Clean Streams Law, Conservation and Natural Resources Act, Wild Resource Conservation Act, and National Environmental Policy Act (just to name a few). Now that the gas is coming out of the ground, the infrastructure to move the gas is needed. ■

What Makes A Good EDD?

An Electronic Data Deliverable (EDD) is a useful tool because it provides clients an electronic version of the hard-copy data that can be easily imported into a database. By managing analytical data in a database, users can easily access and query a desired data set. The analytical data in the EDD can then be used to generate reports, graphs, and even historical or future mapping models.

Before an EDD can be used, the EDD must first be produced by the laboratory and then validated by a second party, such as Environmental Standards. Taking a deeper look into how each party prepares and evaluates an EDD can provide a better understanding of the overall process. Experience in creating EDDs in an analytical laboratory and in validating EDDs can provide new insights into both processes.

Producing an EDD is not always a quick and easy task. One of the first hurdles to overcome is populating the EDD with the correct data from the laboratory's laboratory information management system (LIMS). Having the proper analytical methods reported with their requested analytes is one of the most crucial steps into producing an EDD; other important factors include reporting results in proper units, using the valid values given by the client, having the correct chemical abstract services (CAS) number for the reported analytes, and, most importantly, producing and delivering the type of EDD requested by the client. These are just some of the factors that are considered and addressed when laboratories create an EDD.

An EDD must be both correct and complete. For an EDD to be correct, the EDD must be created according to the client's specifications. For example, analytes should be reported in proper units and required reporting criteria should be displayed. For an EDD to be complete, all required fields such as field sample identification (ID), analytical method, and CAS number should be populated. Sometimes laboratories will not populate some required fields, will report too many or too few analytes, or will use incorrect valid values. Understanding the laboratory process can provide a better idea as to why these mistakes occur and how to address them.

Understanding how laboratories produce an EDD and how another party provides a second level of support helps to develop a better understanding as to what makes a good EDD. ■

The Importance Of Pre-Drilling Baseline Assessments

The increased price of oil, our desire to reduce overseas energy dependence, and the recent viability of unconventional natural gas resources have led to a rise in domestic oil and gas exploration and production. Along with increased exploration and production have come an increased interest in potential environmental impacts and an increase in those seeking compensation for presumed "damages" from oil and gas drilling. Movies such as "Gasland" and major media coverage have combined to create an increasing hostile environment for oil and gas producers. In reality, the same geological settings that produce oil, natural gas, and coal can also be the source of impacts to groundwater and surface water resources as well as to indoor air quality, in the absence of any oil and gas exploration or production.

Several states now require or are in the process of establishing requirements for pre-drilling baseline assessments. Many companies in states without current or pending regulations are, however, being proactive by using pre-drilling baseline assessments to protect their assets and reputations.

Organizations such as the Marcellus Shale Coalition have established useful guidelines for pre-drilling assessments designed to protect oil and gas producers from unwarranted damage claims. The guidelines include recommended approaches, sampling methodologies, and lists of analytes, such as metals and dissolved gases, as well as laboratory methods. Typical pre-drilling baseline assessments usually consist of documenting nearby water-supply wells and springs, developing a sampling approach, contacting local residents to request access for sampling, and then sampling, analyzing, and reporting.

Images such as ignited gases from kitchen sink faucets are powerful tools to sway the emotional responses of judges and juries in damage claims. Naturally occurring methane and other flammable gasses can, however, often be present in groundwater prior to drilling. The only way to successfully refute the emotional arguments is with hard data. It is absolutely critical that oil and gas producers document the conditions of groundwater and surface water resources prior to the start of drilling. Equally important is that the data collected must be bulletproof to survive the rigors of litigation. Proper planning, execution, and documentation of the sampling and analysis are critical to defensible and useful data in the face

of a damage claim. A solid quality assurance program can make certain that the data can stand up in court because in the end, all you have is data.

For more information about pre-drilling baseline assessments in Tennessee, contact Bryan Smith, P.G. at 865-376-7590. In Pennsylvania, contact Stephen Brower, P.G. at 610-935-5577. ■

Recent Awards

Inc. 5000

For the 5th consecutive year, Environmental Standards has been named to the Inc. 5000 List of America's Fastest Growing Private Companies. We are ranked #2,737 for 2011, a significant increase from our 2010 ranking at #4,162.

Zweig Letter Hot Firm

Environmental Standards ranked 52nd in the 2011 Zweig Letter Hot Firm list (out of 175 companies). Every October since 2000, ZweigWhite has recognized the fastest-growing architecture, engineering, planning, and environmental consulting firms with The Zweig Letter Hot Firm List.

Philadelphia 100®

Environmental Standards has been ranked in the 2011 Philadelphia 100 list of the fastest growing, privately held companies in Greater Philadelphia. The Philadelphia 100® is an annual project conducted by the Entrepreneurs Forum of Greater Philadelphia, Philadelphia Business Journal, and Wharton Small Business Development Center.

Brownfield Renewal Award

The Philadelphia Wholesale Produce Market (PWPM) was awarded a Brownfield Renewal Award in the Economic Impact Category. Situated on a 48.6-acre brownfield site that was formerly used as an auto salvage yard, tire disposal facility, scrap yard, and historical waste dump, this state-of-the-art 700,000 square foot facility now provides high-quality, fresh produce to customers within a 500-mile radius. Environmental Standards provided Geosciences consulting services for this project. ■

Pennsylvania Revises Drinking Water Medium Specific Compounds

Pennsylvania, Section 250.304(c) of the Land Recycling Regulations provides that new or revised federal Maximum Contaminant Levels (MCLs) or Health Advisory Levels (HALs) promulgated either by the PA DEP or by the US EPA become effective immediately for purposes of demonstrating attainment of a standard under Pennsylvania's Act 2. Revisions to these US EPA standards affect both the groundwater Medium Specific Concentration (MSC) for a substance as well as the soil-to-groundwater numeric value, which is based on the groundwater MSC and is used to calculate the Statewide health MSC for soils. The January 2011 edition of the US EPA document *2011 Edition of the Drinking Water Standards and Health Advisories* (EPA Publication 820-R-11-022) contains revised MCLs or HALs for two regulated substances. Accordingly, the attached excerpts from Tables 1 and 3b from Appendix A to the Chapter 250 regulations implementing Act 2 show revised MSCs and numeric values for 1,4-dioxane and monochloroacetic acid.

The HALs for two other regulated substances, methyl chloride and 1,2,3-trichloropropane, have been deleted in the same US EPA document. These substances now have neither an MCL nor a HAL; therefore, Section 250.304(c) specifies that the Statewide health standards for groundwater are calculated according to the equations in Sections 250. 306 and 307; however, Act 2 requires that standards developed using these equations be promulgated by the Department before the standards can be used.

Therefore, the Statewide health standards for these substances are withdrawn until new standards are promulgated by amendment of the regulations. In order to obtain the liability relief afforded by Act 2 for these substances, a remediator must demonstrate attainment of either the background or site-specific standard.

Regulated Substances In PA With MCL/HAL Changes Since January 8, 2011

1,4-dioxane	New HAL (200 µg/L for residential use, less than 2,500 mg/L TDS)
Methyl chloride	HAL deleted
Monochloroacetic acid	New MCL (60 µg/L for residential use, less than 2,500 mg/L TDS)
1,2,3-trichloropropane	HAL deleted

Additional information can be found at the following websites:

- http://files.dep.state.pa.us/LocalGovt/OCRLGS/LocalGovtPortalFiles/SWH%20Tables%202011/Table%201Update%20091211.pdf
- http://water.epa.gov/action/advisories/drinking/upload/dwstandards2011.pdf ■

Dioxin 2011

Brussels, Belgium

Principal Chemist David R. Blye, CEAC; Senior Technical Chemist David I. Thal; and Technical Director of Chemistry Rock J. Vitale, CEAC, CPC, visited Brussels, Belgium, during August for the Dioxin 2011 conference. Mr. Thal presented "Guidance for GC/MS Analysis in Support of Oil Spill Forensics."

Earthquake On The East Coast

Until August 2011, Mineral, Virginia, (population 484) was known locally for its Friday night football games where the Louisa County Lions dominate the region as a real lion prowls the sidelines.

Today, Mineral, Virginia, is known as the epicenter of the 5.8 earthquake that hit that little town at 1:51 PM on August 23, 2011. In the Charlottesville, Virginia, office of Environmental Standards, about 30 miles from the epicenter, Tim Cory, a senior geologist originally from California, knew immediately what was happening.

Previously, the largest recorded earthquake in Virginia occurred in Giles County in 1875. Because it was prior to seismographs, the prevailing thought is that it had a magnitude around 4.8. Like the most recent event, the earthquake destroyed chimneys and windows and overturned household items. A magnitude 4.5 earthquake on December 9, 2003, also resulted in minor damage.

The earthquake, which was felt from Georgia to Canada, left moderate to severe damage in its wake. Tammy Noel, administrative assistant at Environmental Standards' Charlottesville office, and her family experienced firsthand the earthquake's destruction. Search YouTube to see some of the destruction of Louisa County High School, which has since been condemned; Tammy's son Cory will complete his high school career taking classes in trailers. Cassie Noel, a middle school student, is attending classes on Saturdays because an elementary school was also condemned.

Damages resulting from the 2011 earthquake have been assessed at over $80 million. Federal Emergency Management Agency (FEMA) originally denied Virginia's Governor McDonnell's September 20th request for assistance to help affected property owners. The Governor appealed and on November 4th, FEMA's decision was reversed.

"I thank FEMA and President Obama for their decision to grant federal disaster assistance for the people of Louisa County. I also want to thank Senator Mark Warner, Senator Jim Webb, Congressman Eric Cantor and Virginia's entire congressional delegation for their strong support of our appeal. Many of our fellow Virginians who call Louisa home are hurting, and this is critically needed aid during a very trying time. The once-in-one hundred year earthquake that struck Virginia in August caused significant damage that was not covered by homeowner's insurance. According to Governor McDonnell, "This assistance is a key resource for families and business owners who have been trying to recover for more than two months."

A large crack is seen in the Louisa County High School building, after being damaged by an earthquake in Mineral, Virginia.

Neighbors and friends in surrounding counties have held bake sales and other fundraisers. Lowe's donated 1,000 combination smoke/carbon monoxide detectors worth nearly $38,000. The Charlottesville Area Community Foundation presented two checks, each for $50,000, from the Dave Matthews Band Bama Works Fund and the Louisa County Community Fund. Those monies will be used toward helping affected residents rebuild and repair their uninsured or underinsured homes.

The William A. Cooke Foundation has created the Louisa County Earthquake Recovery Program Challenge Grant. The Foundation is matching individual donations up to the first $100,000 made to the Fluvanna/Louisa Housing Foundation. To donate, please mail a check, payable to Fluvanna/Louisa Housing Foundation Earthquake Recovery Program, P.O. Box 160, Louisa, VA 23093.

Louisa County natives are hopeful that Mother Nature takes a much needed rest and that the next time their world "shakes" is when Alan Jackson comes to town in the Spring of 2012. Against all odds and competing against much larger and more urban cities, Mineral beat out Kansas City to take top honors and won a free concert. ■

Fall/Winter 2011 Conferences

Railroad Environmental Conference, October 25-26, 2011, Champaign, Illinois. Rock J. Vitale, CEAC, CPC, presented "Measuring Total Petroleum Hydrocarbons – TPH Chemistry 101" and Ruth L. Forman, CEAC, presented a poster titled "Generating Meaningful Environmental Information In The Midst Of An Emergency Response."

Energy, Technology and Environmental Business Association (ETEBA) 12th Annual Business Opportunities Conference, November 1-3, 2011, Knoxville, Tennessee. Environmental Standards exhibited.

SETAC North America 32nd Annual Meeting, November 13-17, 2011, Boston, Massachusetts. Environmental Standards attended.

Clean Gulf Conference, November 30 - December 1, 2011, San Antonio, Texas. Ruth L. Forman, CEAC, will present a poster titled "Using Performance Evaluation Samples to Assess Laboratory Data Quality for Deepwater Discharge Applications."

Northwest Environmental Conference & Tradeshow, December 7-8, 2011, Portland, Oregon. Dennis P. Callaghan will present "Generating Meaningful Environmental Information During The Chaos Of An Emergency Response."

Virginia Industry Leadership Forum & 89th VMA Annual Meeting, December 8-9, 2011, Charlottesville, Virginia. Environmental Standards will attend.

If you would like a copy of a presentation or poster, please e-mail your request to akoss@envstd.com. ■

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