



THE STANDARD

All Appropriate Inquiry Regulations Finalized

As a leading provider of brownfield and environmentally distressed property redevelopment services, Environmental Standards has closely followed regulatory developments since the All Appropriate Inquiry (AAI) Rule was published in the *Federal Register* in August 2004 (see the Fall 2004 issue of *The Standard*). The new rule was finalized on November 11, 2005, and becomes effective at the end of this year (November 11, 2006). Principal Geoscientist

Gerry Kirkpatrick recently announced that Environmental Standards assessment experts are now conducting Phase I Environmental Site Assessments (ESAs) in compliance with the 2005 AAI regulation and added that "in most respects, we have been doing so for years."

Many consultants and industry stakeholders have been speculating on the effects the new regulation will have on the property transfer, Phase I, and Brownfield redevelopment businesses. While no one can be sure, the impacts will be far-reaching for those organizations that have provided low-cost, inadequate Phase I work in the past – many small organizations will be driven out of business because of their lack of resources and their inability to respond to

(Continued on page 2)

A synopsis of this regulatory development is provided in a special insert to this newsletter.

Acid Rain Key Component Of Complex Groundwater Project

Environmental Standards consulting chemists and hydrogeologists recently teamed to tackle a challenging project involving contaminant flow and the presence of lead in drinking water. A major petroleum client was facing allegations that lead from a former service station had migrated off site and contaminated local drinking water (*i.e.*, residential wells). Complicated hydrogeology had thwarted previous consultants' efforts to adequately depict the groundwater flow patterns at this unusual site where dissolved and total lead had been detected in the groundwater and a conceptual model for lead anomalies was unclear. Lead characteristically demonstrates low mobility in the natural environment, tends to reside in the soil fraction, and is not readily mobilized in groundwater. Using an interdisciplinary approach to groundwater geochemistry and hydrogeology, the Environmental Standards project team determined that a rarely occurring terrace gravel bedrock deposit, the Tertiary Bryn Mawr Formation, was the root of the problem and the catalyst was acid rain, characteristic of the region.

The site location on a surface water drainage divide coupled with evidence of both perched and semi-confining groundwater conditions presented a challenging hydrogeologic problem. Groundwater geochemistry was used to identify unique geochemical signatures and multiple groundwater-bearing zones. Clarification of aquifer relationships allowed wells to be grouped by characteristic water-bearing zones and more accurate hydrologic

flow patterns became apparent.

The limited and shallow Bryn Mawr aquifer contains very clean quartz sands that are so highly weathered that few complex minerals remain. Without a source of major cations and bicarbonate from the breakdown of feldspar and

clay minerals, this aquifer has little alkalinity or buffering capacity. Strongly susceptible to the influence of recharging waters, swings in the Bryn Mawr Formation pH and alkalinity are subject to the geochemical influences of infiltrating precipitation,

storm water influx, and mixing with the underlying Wissahickon Formation aquifer and/or overlying perched waters. Correspondingly, the fickle geochemical attributes of the Bryn Mawr Aquifer produce conflicting data where

(Continued on page 2)



FEATURED TOPICS

MDL Update	2
SVE Technology	3
Pore Water Removal.....	3
Logistics Auditing.....	4
Field Sampling	4
Risk Assessment.....	5
New Website.....	5
TCEQ And PCBs	6
One Cleanup Program	6
New Employees	7
Speaking Events ..	7

Method Detection Limit Federal Advisory Committee — Making Progress

Previous editions of *The Standard* have reported the controversy surrounding the US EPA's March 2003 proposed rule that revised the detection and quantitation procedures for analytical methods under the Clean Water Act (CWA). The rule was subsequently withdrawn in responses to divergent comments about the proposed revisions and potential impact on the regulated community. In January 2005, the Agency announced the establishment of the Federal Advisory Committee on Detection and Quantitation Approaches and Uses in CWA Programs (FACDQ). Since that time, three meetings of the FACDQ have taken place, and a Multi-Laboratory Subgroup, a Single-Laboratory Subgroup, and a Policy Work Group have been formed. Current tasks of these working groups are provided below.

Multi-Laboratory Subgroup

- Discuss and reach an understanding of the multi-laboratory and inter-laboratory study approaches and develop procedures for comparison and validation of the results.
- Develop a definition of a multi-laboratory study for the previously developed glossary of terms.

Single-Laboratory Subgroup

- Define and document the differences among the American Council of Independent Laboratories (ACIL), LTMDL (long-term method detection limit), and Consensus Group procedures.
- Gather existing data for use in evaluating various options for definition of the critical level.
- Decide whether or not any modifications to proposed procedures should be made, particularly in light of the fact that L_d (detection limit) will not be determined.
- Define how to analyze and evaluate the data.
- Develop a definition of a single-laboratory study for the glossary.

Policy Work Group

- Data Quality Objectives and Measurement Quality Objectives (DQOs/MQOs) – what levels of false positive/false negative frequency and precision and accuracy should the procedures be targeting?

Additional meetings are currently being scheduled for 2006. The final product is anticipated to be a report of consensus recommendations on detection and quantitation approaches and uses in CWA programs. Environmental Standards chemists are participants in select weekly Technical Work Group conference calls, which are expected to continue throughout 2006.

Acid Rain Key To Project

(Continued from page 1)

ever groundwater mixing occurs.

A high influx of acid precipitation has been widely demonstrated to scavenge lead from a multitude of natural and anthropogenic sources, including natural geologic formations and soils, construction materials (asphalt shingles and paint), fugitive atmospheric-particulate lead, storm sewer water, and most importantly, water supply construction materials (primarily well casing, supply piping, fittings, pressure tanks, etc.). Lead mobility is highly dependent upon pH, and widely varying lead concentrations from the residential wells were attributed to changes in aquifer acidity, which fluctuates in response to the influence of acid precipitation infiltration and the degree of aquifer mixing with more buffered and less acidic groundwaters. The unfortunate outcome is variable dissolved and colloidal lead concentrations scavenged from otherwise immobile sources.

The resulting conceptual model explains the presence of a low-mobility metal in groundwater; the variance of dissolved lead concentrations over time; and the absence of a uniform plume configuration expected from a single-point source. While complex, the revised conceptual model indicates that the lead source is not the client's site, but rather the result of the complex interaction of many local and regional factors.

US EPA News Front

- The US EPA celebrated its **35th Anniversary** on December 2, 2005. On January 18, 2006, the Agency commemorated the occasion with an awards ceremony to honor 35-year employees and a roundtable discussion that featured current Administrator Stephen Johnson and all living former US EPA administrators.
- The US EPA Office of Enforcement and Compliance Assurance unveiled a new **Reporting Violations Page** in January. The "new look" features a badge button through which citizens can report possible environmental violations or crimes.
- The US EPA has determined that Sigma-Aldrich Product Number 650544 meets the specification for **n-hexane** ("85% minimum purity, 99.0% min. saturated C6 isomers, residue less than 1 mg/L") for use as an extraction solvent when conducting analysis by US EPA **Method 1664A**.
- The US EPA has proposed that certain **storm water discharges** from field activities, including construction associated with **oil and gas** exploration, production, processing, or treatment operations or transmission facilities be **exempt** from National Pollutant Discharge Elimination System (**NPDES**) **permit requirements**. The comment period ends on February 21, 2006.

All Appropriate Inquiry

(Continued from page 1)

Phase I ESA requests in a rapid and timely manner.

It is important for developers, financiers, and property sellers to understand how the new regulation might affect their projects. As a courtesy to our clients, a one-page summary of the main differences between the Final All Appropriate Inquiries Regulation and the ASTM E1527-00 Standard (the former primary industry standard and the interim standard until November 2006) is provided in this newsletter. If you need a copy of the regulations, pertinent fact sheets, or are curious about additional perspectives on the new regulations, feel free to contact Gerry Kirkpatrick at 610-935-5577.

Site Remediation Uses Soil Vapor Extraction Technology

Environmental Standards is working on an intriguing project that involves remediating tetrachloroethene (PCE) and trichloroethene (TCE) impacted soils and groundwater at an active Pennsylvania shopping center. A former dry cleaning operation that leased a portion of the property from 1967 until the early 1980s

(prior to ownership of the property by our client, a real estate developer) is the suspected source of soil impacts at the site and historical data indicate that a PCE source may still exist in the vadose zone. The

source PCE is likely contributing to elevated groundwater and indoor air chlorinated volatile organic compound (VOC) levels at the site. Environmental Standards proposed installation and operation of a soil vapor extraction (SVE) system to reduce PCE soil concentrations in the source area because control of the PCE source is critical to successfully improving both groundwater and indoor air quality at the site.

Environmental Standards collected indoor and outdoor air quality samples in March and June 2005 to determine whether or not indoor air quality at the project site was being impacted by the presence of chlorinated VOCs beneath the shopping center structure. Laboratory analytical results from indoor samples collected during both events indicated concentrations of PCE that marginally exceeded PA DEP's non-residential indoor air medium specific concentrations (MSCs).

A comprehensive round of groundwater sampling was conducted from the 36 on-site monitoring wells and two municipal wells in April/May 2005 to assess the current groundwater conditions and to compare analytical results to historical data. Prior to the 2005 event, a comprehensive sampling event had not been conducted in over two years. Analytical results revealed concentrations of PCE, TCE, and *cis*-1,2-dichloroethene (*cis*-1,2-DCE) above the applicable PA DEP non-residential groundwater MSCs.

Based on historical data and Environmental Standards' investigation ac-

tivities, SVE was considered a possible remedial alternative for treating the PCE source. SVE is an air-driven remedial technology involving the extraction of VOCs from the vadose zone. VOC vapors are removed through a series of vertical or horizontal extraction wells and subsequently treated prior to



discharge to the atmosphere. Environmental Standards professionals have extensive experience with this technology. In order to evaluate the potential effectiveness of SVE technol-

ogy in addressing adsorbed phase chlorinated hydrocarbon contamination at the site, a pilot study was conducted in June 2005. The pilot test allowed subsurface reaction to the applied vacuums to be monitored which, in turn, allowed solvent extraction potential within the affected subsurface to be predicted. One SVE pilot test well and five associated monitoring points were installed at the site by a licensed Pennsylvania well driller.

Based on the results of the pilot test, Environmental Standards pro-

posed the design and installation of an SVE system at the site and coordinated with the PA DEP to obtain approval of the SVE system design. This coordination included the submission of an SVE system design package and an air permit exemption application. Following PA DEP review and acceptance of the submittals, system installation planning was initiated. Our project team was able to incorporate the extraction point and two monitoring points installed and used during pilot testing into the system design. It was also necessary to install additional extraction points and the associated piping inside a busy shopping center store, which presented a major logistics challenge. Coordination with store management and proper planning made timely installation possible without disruption of the store's daily operations.

The SVE system was installed primarily to remediate the chlorinated solvent plume present in the vadose zone beneath the store. It is anticipated that the SVE system, which has been operational since December 2005, will also improve indoor air quality. In January, Environmental Standards initiated a pilot scale groundwater remediation program at the site. Source control through operation of the SVE system, coupled with a site-wide groundwater remediation program after pilot scale testing, should effectively remediate chlorinated VOC contamination at the site.

Effective Pore Water Removal In Sediment Projects

The characteristics overlying water, pore water, and elutriate are important factors when performing toxicity identification evaluation (TIE) studies and should be carefully considered during work plan and quality assurance project plan design. During the last several years, Environmental Standards has provided QA oversight for a number of complex sediment projects that involve the collection and characterization of pore water. Specifically, pore water (as well as other sediment properties) is important in the context of understanding possible re-suspension and transport of the compounds of concern. Methods for the effective removal of pore water vary depending on the characteristics that are to be evaluated. Time-intensive techniques such as filtering, squeezing, and centrifuging are com-

monly used. Many compounds are not affected by some of these techniques, but special challenges prevail when redox-sensitive species are involved.

With regard to the extraction of pore water by filtration, nutrients (e.g., ammonia, phosphates, chlorides) and metals passing through a 0.45-um filter have traditionally been considered the dissolved fraction as an "operational definition." For nutrients and metals, cellulose or polycarbonate polymer filters are typically used for filtration. Glass-fiber depth filters that are rinsed with the extraction solvent, dried, and baked (to 450°C) have become popular for use for organic compound filtration. For some organic compounds (e.g., PCBs, PAHs), a 0.7-mm pore-size is used to operationally define dissolved and sediment particle phases.

Logistics Auditing Expands Services

Environmental Standards Logistics Auditing has expanded to include several new chemical product-handling modes. Our chemical and petrochemical company clients have typically requested our audit teams to assess Trucking, Marine Surveyor, Warehouse, and Product Testing Laboratory operations for health and safety, security, and environmental (HSSE) compliance. Environmental Standards' clients are more recently requesting assessments of a variety of "non-traditional" logistics contractor operations.

Tankwash service providers represent one such mode. Essentially, a tankwash is just what its name implies – a facility or operation where bulk product (specifically, liquid or powdered forms of chemicals) containers are physically and chemically cleaned of any residual products from previous loads. Tanks take multiple forms – railcars, tanker trailers, large ("Iso") plastic containers – but all forms are used for the same purpose of temporarily storing and/or moving bulk products. Unless tanks are maintained in dedicated service (*i.e.*, always loaded with the same product), all traces of previous products must be removed by the tankwash facility before tanks can be used to haul or store other products. Our comprehensive HSSE audits ensure that the tankwashes used by our clients are operated in accordance with all applicable environmental and safety regulations and meet client-specific contractual requirements.

Another new service is assisting our chemical and petrochemical clients in conducting HSSE audits of their own facilities – manufacturing plants, blending facilities, distribution centers. Such audits are intended to help clients ensure that their facilities meet and maintain regulatory compliance and that ef-

fective systems are in place to ensure the health and safety of their employees and adequate environmental protection and site security. Recently, a Global 5 client established a 12-member auditing team that included an Environmental Standards Logistics Auditor to conduct a week-long, intensive audit of one of its own facilities to evaluate compliance with applicable regulations.

Environmental Standards is currently "on-call" for a client that is expecting federal regulatory audits in the near future. Our auditors will represent the client's auditing division and will address the questions of the federal auditor about our client's own auditing program - who, what, where, when, how, how often, and why they audit their logistics service providers.

Logistics Auditing is contemplating expansion into other product-handling modes (short-line [local/regional] railroad and toll manufacturing [product blending]). An opportunity to manage a major client's full auditing database – managing the data and subsequent follow up (corrective actions, *etc.*) for not only the audits that Environmental Standards conducts but also the audits that the client performs "internally" – is also under consideration.

In addition, Logistics Auditing is launching a postcard campaign to provide "real-world" logistics service provider auditing information to existing clients and to reach out to new chemical and petrochemical industry clients. The postcard campaign will feature the "Top Ten" interesting and/or noteworthy audit findings identified during actual on-site assessments. Showcasing these findings is intended to make postcard recipients aware of specific issues that could be encountered at their subcontracted LSP facilities.

Postcards will be mailed monthly beginning in February, and each postcard will highlight one unique audit finding.

To find out more about Environmental Standards Logistics Auditing capabilities and services, or to be included in our postcard campaign, please contact Shaun Folkerts at 610-935-5577 or sfolkerts@envstd.com.



Suspect Field Sampling Practices

Members of the Environmental Standards Geosciences Department have conducted over 100 field audits in the past 11 years. During the course of these audits, our field auditors have witnessed field personnel fail to comply with basic field protocols that, had they gone unchecked, would have adversely impacted the reliability of data and/or created additional liabilities for the site owner. Below are just a few examples of our findings.

- A field team leader in charge of collecting soil samples for mercury analysis was observed walking in a small building where beads of elemental mercury were strewn across the floor. The field team leader proceeded to walk out of the building and immediately mark a surface soil sample location with the heel of his boot that had come in contact with the beads of mercury. A field technician was about to collect a soil sample at this location when the Environmental Standards field auditor interceded and made the field team aware that the circumstance leading up to sample collection could have a significant impact on the quality/representativeness of the sample.
- A senior field team member was observed discarding the remaining soil from a 4-foot sample core onto the ground surface following collection of a subsurface soil sample. When questioned by the Environmental Standards field auditor as to why this material was not being contained and treated as investigation-derived waste (IDW), the sampler indicated that the material was not used as part of the investigation so he did not consider it IDW. Had the field auditor not interceded and corrected this improper practice, it would have contributed to additional liabilities for the site owner.
- A field team leader with less than two years of experience was placed in charge of a large hexavalent chromium field investigation. During the course of a one-day field audit, the Environmental Standards field auditor observed almost 30 major deviations from the project control docu-

(Continued on page 6)

Laboratory News

Severn Trent Laboratories, Inc. (STL) has announced the acquisition of **Environmental Analytical Solutions, Inc.** (EASL) in New Orleans, Louisiana. STL indicated that Indoor Air Quality and mold testing capabilities will be added to the testing capabilities of the facility.

In other news, **SGS Environmental Services** has acquired **Paradigm Analytical Laboratories, Inc.** in Wilmington, North Carolina.

What Is Risk Assessment?

The phrase "risk assessment" is used differently by a variety of industries. The phrase is most commonly seen in the financial investment and insurance markets where risk assessment is used to determine the probability of realizing a financial loss based on the variables associated with a particular investment or coverage. In the environmental arena, however, risk assessment is more typically associated with the protection of human health and the environment. In our industry, risk assessment is the estimation of risk of harm to human health or the environment posed by chemicals present in the environment.

Risk assessments can be developed for humans and a variety of ecological receptors. The US EPA, other federal agencies, and many states have developed guidance for conducting human health risk assessments. Ecological risk assessments are much less straightforward. In the interest of space, this article will focus on human health risk assessment.

The US EPA began publishing risk assessment guidance in the mid-1980s. Some of this earlier guidance is still viewed as the backbone of the human health risk assessment process; a wealth of data in support of risk assessment has been compiled, organized, tabulated, and published. Chemical toxicology, a science that has been around for hundreds of years, forms the foundation of risk assessment. Exposure pathways and routes describe how a chemical in the environment can enter the body and cause adverse health effects. A tremendous amount of time and energy has been spent on developing exposure parameter values. For example, exposure data that describe such arcane activities as washing dishes or sitting in traffic has been published. Other data describe how long windows are typically kept open in a house or how long an individual spends in his/her driveway. Despite the large body of data that can be called upon to describe how we function on a daily basis, the applicability of that data to a specific site is often a source of question in the risk assessment process.

An exposure pathway analysis or conceptual site model is used to deter-



mine the potential receptors that may be present at a site (currently or in the future), the chemicals that are present in the varying media, and how those chemicals may enter the body. This information is then applied in the risk assessment to determine if the chemicals in the environment can enter the bodies of the receptors in high enough concentrations to cause adverse health effects. This risk assessment process consists of five main components – Data Analysis, Exposure Assessment, Toxicity Assessment, Risk Characterization, and Uncertainty Analysis. Data Analysis consists of reviewing existing environmental data, determining which data should be applied in the risk assessment, selecting the constituents of

concern, and determining the exposure point concentration or the concentration of the chemical to which the receptor is likely to be exposed. The advan-

Website Opens New Window On Our World

"If we value the pursuit of knowledge, we must first be free to follow wherever that search may lead us."

Adlai Stevenson

When searching for knowledge regarding the latest in environmental consulting services, look no further than www.envstd.com, where Environmental Standards has launched its new website. Key enhancements have been added to provide site visitors with easy-to-access information about our company, our services, our latest industry activities, our employment opportunities, our contact information, and our customer-only portal for specific client projects.

Other new features of our website include the following:

- Introduction of a "Flash" treatment of our logo and company messaging.
- Easier navigation through simplified drop-down menus.
- Direct customer access to our Oracle Portal through a new Customer Login screen.
- Availability of forms for resume submission, contacting us, and newsletter requests.
- Introduction of a home page

"News" section that will be routinely updated to present topical issues.

- Increased representation of our Virginia office.
- Increased representation of our services including sediment and TMDL offerings.
- Increased representation of our company history and who we are.
- Improved directions to our main office and introduction of directions to our Virginia office.

"We see our website as a valuable source of information about our company and a valuable tool for our clients when it comes to easy access to their specific project data," said Environmental Standards CEO and Principal Rock J. Vitale. "With this electronic window on our world, we offer our clients and prospective clients valuable information to efficiently and cost-effectively address their environmental concerns."

The site is designed to be fluid, with the ability to grow with the company. Check back often to see the latest Environmental Standards developments and service offerings.

One of the major advantages of risk assessment is that the process does not have to assume that all receptors are exposed to the maximum concentration all the time. Instead, the receptors are assumed to contact different areas of the site randomly, thereby coming into contact with different contaminants at varying concentrations. To represent this more realistic exposure, a conservative estimate of the average concentration, called a 95% Upper Confidence Limit of the Mean Concentration (95% UCL), is used as the exposure-point concentration.

The Exposure Assessment determines which exposure parameter values should be applied at a site based on the potential receptors present and other site-specific factors such as institutional or engineering controls. This information, when combined with the exposure-point concentration, is used to determine a receptor's chemical intake.

The Toxicity Assessment identifies the appropriate toxicity values that should be applied based on whether or

(Continued on page 6)

Texas Establishes PCB Advisory Group

Soil and sediment investigations frequently include characterization and subsequent remediation of polychlorinated biphenyl compounds (PCBs) in the environment. Historically, environmental samples have been analyzed for PCB Aroclors using GC/ECD methodologies. PCBs released to the environment decades ago can degrade to varying degrees (depending on the environment); consequently, comparison of chromatographic patterns of samples to laboratory-generated PCB Aroclor standards has led to a variety of problematic (misleading) reporting issues. As a result of these characterization and reporting factors, analytical techniques to characterize and quantitate individual congeners are being developed.

During the fourth quarter of 2005, the Texas Commission on Environmental Quality (TCEQ) established a PCB Advisory Group to dis-

cuss a planned amendment to a rule in Title 30 Texas Administrative Code 350.76(d). The planned amendment requires that total PCB concentrations be determined using a congener-based method such as GC/ECD. The purpose of the advisory group is to discuss the rule amendment and the planned analytical approach for measuring PCBs and to gather input from environmental laboratories regarding market fluctuations to expect and analytical options to consider.

Initial meetings of the PCB Advisory Group were held in mid-December 2005 and mid-January 2006 in Austin, Texas. Environmental Standards Technical Director of Chemistry Rock J. Vitale was invited to peer review the questionnaire to be issued to the participating commercial laboratories and will sit on the Advisory Group. Updates on the Group's progress will be published in future issues of *The Standard*.

Risk Assessment

(Continued from page 5)

not carcinogens are present, the length of potential exposures (chronic vs. sub-chronic), and the route by which a contaminant can enter the body (dermal, oral, or inhalation).

The Risk Characterization compares the chemical intake calculated in the Exposure Assessment to the acceptable intake levels and toxicity data identified in the Toxicity Assessment. The resultant non-carcinogenic hazard levels and carcinogenic risk levels are then compared to the levels deemed acceptable by the regulatory agency.

The Uncertainty Analysis is a review of each phase of the risk assessment process and a determination of how applicable the decisions and assumptions made in each phase are to the site being evaluated. The Uncertainty Analysis should identify significant sources of uncertainty in the risk assessment and if the applied assumptions have potentially overestimated or underestimated the final hazard and risk values.

Clearly, the human health risk assessment process is a bit more involved than can be described herein; this article is intended to provide a little insight into the "black box" that risk assessment is often considered. If you would like more specific information or are interested in an "Introduction to Risk Assessment" presentation, please feel free to contact Kathy Zvarick at kzvarick@envstd.com.

Field Sampling

(Continued from page 4)

ments. Following an end-of-day debrief with the site owner, all field activities were halted until the field consultant addressed and corrected each deficiency.

It is too often assumed that the primary opportunity for data error occurs at the laboratory. Deficiencies in the field such as those described above indicate that environmental data quality improvement not only needs to focus on analytical laboratory performance but also on improving the performance of field consultants responsible for sample collection. Environmental liabilities can be created by field team practices and the impacts of these liabilities may go unnoticed long after field activities have been completed.

PA DEP Releases New One Cleanup Program Specs

In April 2004, the Pennsylvania Department of Environmental Protection (PA DEP) and the United States Environmental Protection Agency (US EPA) signed a groundbreaking Memorandum of Agreement (MOA) establishing Pennsylvania's One Cleanup Program, the first program of its

kind in the country. The MOA created a process by which a site can be characterized and remediated while satisfying the requirements of both the PA DEP and US EPA at the same time. The One Cleanup Program has helped in saving the time, effort, and frustration that were formerly associated with attempts to accommodate each regulatory agency independently.

In the fall of 2005, the PA DEP released new One Cleanup Program guidelines to further facilitate the cleanup of sites falling under both state and federal jurisdiction. The new guidelines establish three different tracks into which a site may fall – "Simple," "PA DEP Lead," and "US EPA Lead." In most instances, cleanups conducted under PA DEP's Statewide Health or



Site-Specific Standard will satisfy US EPA requirements and will only involve US EPA for the purposes of updates and final report review. Some sites remediated under the Site-Specific Standard will be led by the US EPA, particularly if the site has a long-standing history with the US EPA or is under a Consent Order or other agreement.

One of the main improvements in the One Cleanup Program is the assignment of PA DEP and US EPA project managers to each site. It is the responsibility of the project managers to ensure that a site cleanup adheres to the requirements of the One Cleanup Program and that the project is completed successfully.

For sites led by the PA DEP, US EPA's Environmental Indicator forms can be drafted by the remediator, but US EPA will finalize these documents. Regardless of which track a site might be entered into, the PA DEP's Act 2 program will serve as the basis for the site characterization and remediation processes.

To enter the One Cleanup Program, the remediator can simply check the optional box on the electronic Notice of Intent to Remediate form available at <http://www.depweb.state.pa.us/landrecwaste/cwp/view.asp?a=1243&q=462059>.

Newcomers Continue To Join The Ranks

The Environmental Standards Geosciences and Chemistry Departments added to their rosters this winter, bringing two new staff members on board. In addition, our Virginia office welcomed a new member to its growing staff.

Mark Haslett joined our Geosciences Department as a project manager for key assignments within the group. Mr. Haslett has extensive experience with field and office activities pertaining to the geosciences and laboratory analyses. He has managed analytical service projects for industrial and regulatory agency clients, acted as the primary client contact person on key projects, and implemented soil and groundwater sampling programs. Mr. Haslett earned a B.A. degree in Geo-Environmental Studies from Shippensburg University of Pennsylvania.

The Chemistry Department welcomed **Randall Howell**, a development chemist who came to Environmental Standards from Tennessee, where he worked as a product manager of central laboratory services for the Tennessee Valley Authority. Overall, Mr. Howell has more than 15 years of experience in the area of method development, using both his analytical and management skills to improve project operations. Mr. Howell attended Middle Tennessee State University, where he earned both his M.S. and B.S. degrees in Chemistry.

Our Virginia office recently welcomed Office Administrator

Laura O'Grady. Ms. O'Grady will be responsible for data management, word processing, filing, and reception activities, as well as the coordination of the office's ever-growing project list. A Massachusetts native, she earned a B.S. degree in Neuroscience from Tulane University.

In addition, the Virginia office is currently in search of a Project Geologist with less than three years of experience to help handle the increasing client workload. If interested, please send information to jobs-va@envstd.com or contact Office Manager Phil McKalips at pmckalips@envstd.com with any questions regarding the position.

Overall, 2005 saw a significant increase in the number of new employees at Environmental Standards, with a total of 11 professionals joining our consulting firm. This not only reflects the fulfillment of increased staffing needs at our Valley Forge headquarters, but the addition of our Charlottesville, Virginia, office.

"We have experienced tremendous growth during the past few years, as we continue to serve the needs of Fortune 500 companies worldwide," said Environmental Standards COO Gerry Kirkpatrick. "Just as our client base covers the globe, so too does the pool from which environmental professionals come to join our ranks, bringing with them significant experience and valuable knowledge of the latest developments in environmental consulting."

Environmental Standards Personnel Speaking Events

Members of our Geosciences Department recently attended and presented at the **2006 North American Environmental Field Conference and Exposition: Advances in Environmental Site Characterization and Monitoring Technology** in Tampa, Florida.

The paper entitled "Developing a Conceptual Site Model of Petroleum and Chlorinated Hydrocarbons by Pairing Membrane Interface Probe Results With Environmental Visualization Software Modeling" presented the results of an investigation that combined state of the science real-time monitoring with high-tech environmental modeling software to produce three dimensional conceptual site models.

To receive a copy of this presentation or for more information about the project, please contact Director of Geosciences Dan Claycomb at 610-935-5577 or dclaycomb@envstd.com.

The Pennsylvania Chamber of Business and Industry has invited Environmental Standards to present on Indoor Air Quality and Mold at its **2006 Annual Environmental Laws and Regulations Conference and Trade Show** on April 18 and 19 in Harrisburg, Pennsylvania. Environmental Standards' presentation will cover areas such as what companies need to know concerning indoor air quality and mold issues, how to determine if a problem exists, routine maintenance to prevent indoor air quality problems, and best practices and planning tactics companies should use to avoid such problems.

For more information regarding the 2006 Annual Environmental Laws and Regulations Conference and Trade Show, please check out the Chamber's website at www.pachamber.org.

Environmental Standards Sponsors SWEPA Awards

Environmental Standards representatives recently joined more than 100 leaders in the environmental community in celebrating the Society of Women Environmental Professionals (SWEPA) annual Touchstone Awards and the Greater Philadelphia SWEPA Chapter's 10th anniversary. PA DEP Secretary Kathleen A. McGinty provided the keynote address, congratulating attendees on their accomplishments and challenging the SWEPA membership to continue finding economic opportunities hidden in today's environmental challenges.

Environmental Standards provided the evening's refreshments — wines and other beverages company personnel have "discovered" while conducting audits, field work, or other business-related activities throughout the world. Wine selections included domestic vintages from California, Oregon, Virginia, and Pennsylvania and international vintages from Australia, New Zealand, and Argentina. In addition, one excellent Kentucky bourbon made its way to the table.

For more information about the organization, check out the SWEPA website at www.swepaweb.com.



Environmental Standards continued its tradition of serving as a collection point this holiday season for the US Marine Corps Toys for Tots Program. Overall, the Marines distributed approximately 18.3 million new toys nationwide, and we were proud to contribute locally to this annual campaign.



1140 Valley Forge Road
P.O. Box 810
Valley Forge, PA 19482-0810

Phone: 610-935-5577

Fax: 610-935-5583

www.envstd.com

E-mail: solutions@envstd.com

*Setting the Standards for
Innovative
Environmental Solutions*



THE STANDARD

Don't forget to visit us on the web!

www.envstd.com

Did you know?

- From 1996-2005, the United States reduced pollution during a period when there was a 10% increase in the size of the US population and a 30% increase in the nation's gross domestic product.
- According to a 2004 report, an estimated 20,000 dry cleaning facilities across the country are contaminated.
- If the "Superfund for Hurricane Accountability and Recovery Act of 2005" is enacted, industry taxes to fund the Superfund Program will be reinstated (expired in 1995).

Main Differences Between the Final All Appropriate Inquiries Regulation and the ASTM E1527-00 Standard¹

Main Differences	Final AAI Standard	ASTM E1527-00
Definition of Environmental Professional	Specific certification/license, education, and experience requirements. Applies only to individuals who supervise all appropriate inquiries.	No specific certification, licensing, education, or experience requirements. Applies to all individuals involved in conducting all appropriate inquiries.
Interview With Current Owner and Occupants of the Subject Property	Mandatory.	A reasonable attempt must be made to interview key site manager and reasonable number of occupants.
Interview With Past Owner and Occupants	Interviews with past owners and occupants must be conducted as necessary to achieve the objectives and performance factors in §§ 312.20(e)-(f).	Not required, but must inquire about past uses of the subject property when interviewing current owner and occupants.
Interview With Neighboring or Nearby Property Owners or Occupants	Mandatory at abandoned properties.	Discretionary.
Review of Historical Sources: Period to be Covered	From the present back to when the property first contained structures or was used for residential, agricultural, commercial, industrial, or governmental purposes.	All obvious uses from the present back to the property's first obvious developed use or 1940, whichever is earlier.
Records of Activity and Use Limitations (e.g., Engineering and Institutional Controls) and Environmental Cleanup Liens	No requirement as to who is responsible for the search. Scope of environmental cleanup lien search includes those liens filed or recorded under federal, state, tribal, or local law.	User's responsibility. The search results must be reported to the environmental professional. Scope of environmental cleanup lien search is limited to reasonably ascertainable land title records.

Government Records Review	Federal, state, tribal, and local records.	Federal and state records. Local records/sources at the discretion of the environmental professional.
Site Inspection	Visual inspection of subject property and adjoining properties required. Limited exemption with specific requirements if the subject property cannot be visually inspected.	Visual inspection of subject property required. No exemption. No specific requirement to inspect adjoining properties – only to report anything actually observed.
Contaminants of Concern	<u>Parties seeking CERCLA defense</u> : CERCLA hazardous substances. <u>US EPA Brownfields Grant recipients</u> : CERCLA hazardous substances, pollutants or contaminants, petroleum/petroleum products, and controlled substances.	CERCLA hazardous substances and petroleum products.
Data Gaps	Requires identification of sources consulted to address data gaps and comments on significance of data gaps with regard to the ability of the environmental professional to identify conditions indicative of releases and threatened releases.	Generally discretionary. Sources that revealed no findings must be documented.
Shelf Life of the Written Report	One year, with some updates required after 180 days.	Updates of specific activities recommended after 180 days.

(1) Reference -- http://www.epa.gov/brownfields/aai/compare_astm.htm