



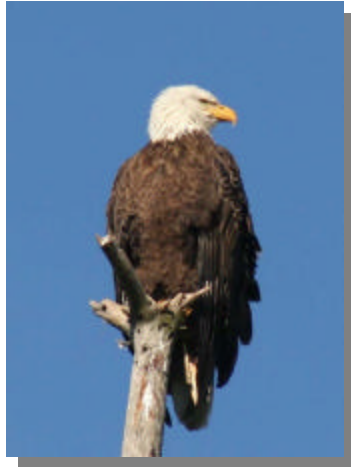
THE STANDARD

“Fly Eagles Fly” Means More Than A Fight Song At Valley Forge Office

Fly Eagles Fly” is the fight song for the National Football League Philadelphia Eagles – the team strongly supported by many Environmental Standards’ employees. These three familiar words seemed especially appropriate when, in October 2004, some of our birding enthusiasts discovered a pair of bald (“white headed”) eagles in the trees behind our Valley Forge headquarters, which borders the Pickering Creek Reservoir in Schuylkill Township, Pennsylvania. Frequent sightings of the mature eagles, which typically roosted in the early morning hours on a dead tree that was visible from one side of the building, inspired many conversations about bald eagles and their nesting habits. Employee interest grew with every sighting, binoculars and cameras were readied, and a “Bald Eagles Information Page” was initiated on the company Intranet so that eagle activity information could be shared.

The bald eagles began nesting activities in November as they were observed transporting sticks (some very large) in their talons or beaks to a large Eastern White Pine at the edge of the reservoir. Some employees reported having seen the eagles, known for their strength and six- to eight-foot wingspan, literally dive onto dead

tree limbs that snapped upon impact and were subsequently retrieved for the nest. Nests have been reported to be up to six feet in diameter and to weigh hundreds of pounds.



One of the Environmental Standards bald eagle family, as seen from our Valley Forge office.

Eagle activity became sporadic during December and January, although the eagles were occasionally seen taking small sticks to the nest area. In February, however, the eagles were more visible and their activities indicated that they were roosting near the nest during the night. The pair was observed “sharing duty” on the nest and taking grass to their forest “penthouse” during the second week of March, which lead to speculation that the first egg had been laid.

Bald eagles typically mate for life and lay two or three eggs in the spring. The eaglets probably hatched around mid-April based on the incubation period (35 days) and observations of the eagles taking food to the nest. Employee anticipation remains high as we look forward to observing these young symbols of our nation.

The use of pesticides, such as DDT, during the 1950s and 1960s caused thinning of eagle egg shells and eagle populations plummeted until passage of the Endangered Species Act in 1973 and subsequent banning of some pesticides. Although on the federal “threatened” species list, the bald eagle is considered an endangered species in the Commonwealth

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National Brownfield Association Forms Pennsylvania Chapter

Pennsylvania has always been a leader in the brownfield redevelopment industry. So, when the National Brownfield Association (NBA) started forming state chapters, it was just a matter of time before Pennsylvania jumped on board. That time has come as the NBA recently announced the formation of the Pennsylvania Chapter.



Leading the chapter will be a diverse and highly qualified group of individuals from the public sector, industry, consulting, legal, insurance, banking, and development arenas. The inaugural Executive Team, which includes Environmental Standards’ own Kathy Zvarick, Manager of Toxicology and Risk Assessment, was appointed by the Executive Director of the NBA. Ms. Zvarick will also serve as the Chair of the Communications Committee.

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Rising Regulatory Concern About 1,4-Dioxane

Environmental Standards' work associated with the investigation and remediation of solvent/chlorinated hydrocarbon plumes indicates that regulatory agencies are increasingly requesting that 1,4-dioxane be included as a constituent of concern. This manmade compound is primarily used with chlorinated solvents, particularly 1,1,1-trichloroethane (TCA), as a stabilizer to inhibit reactions that otherwise lead to the deterioration and breakdown of the solvent. The compound 1,4-dioxane is also used as a solvent in paints, varnishes, and lacquers and may contaminate cosmetics and other personal care products as an accidental byproduct.

The high miscibility of 1,4-dioxane in water is evidenced by the fact that the compound can be found in groundwater plumes far in advance of other solvents that might have entered the subsurface simultaneously. It also migrates rapidly in soil. The compound does not respond to air stripping or granular activated carbon treatment. Once released, 1,4-dioxane remains pervasive in the subsurface because it biodegrades slowly. New treatment technologies are being researched for 1,4-dioxane; advanced oxidation processes involving hydrogen peroxide and ultraviolet light or ozone have been applied successfully, and phytoremediation shows promise for its

removal at depths accessible to plant roots.

Little scientific data on the long-term effects of 1,4-dioxane on human health are currently available, although the US EPA has listed the compound as a probable human carcinogen (based on the results of animal studies). The US EPA has not set a drinking water maximum contaminant level for 1,4-dioxane, but some state agencies have set safety levels that vary based on the applicable risk factors. The Pennsylvania Department of Environmental Protection has established groundwater

The severity of impacts from 1,4-dioxane is open to debate.

medium-specific concentrations (MSCs) of 0.56 (residential, used aquifer) and 2.4 (nonresidential, used aquifer) micrograms per liter (mg/L) for the compound. Based on our experience, groundwater samples with elevated levels of chlorinated hydrocarbons (such as 1,1,1 TCA) typically contain levels of 1,4-dioxane that exceed these MSCs.

The severity of impacts from 1,4-dioxane is open to debate due to uncertainties regarding its toxicological effects and to the lack of agreement on acceptable risk levels. Until such issues are resolved, 1,4-dioxane can certainly create problems for industrial property owners, remedial project managers, and water utility operators alike.

Perchlorate Update

US ACE Publishes New Field Screening Method

On the perchlorate analytical front, the United States Army Corps of Engineers (US ACE) Engineering Research and Development Center published a new field screening method for perchlorate in soil and water in May 2005. The new method is a colorimetric method and is capable of achieving a detection limit of 1 mg/L for aqueous samples and a detection limit of 0.3 mg/L for soil samples. US ACE tested the performance of this method by analyzing approximately 100 well water and bioreactor samples by both this field screening method and US EPA Method 314.0. The test was conducted over a linear range from 1 to 225 mg/L. Good precision was observed when the results between the two methods were compared. A few false positives using the field screening method were observed during the test at the lower end of the linear range (<5 mg/L). Two cleanup methods (included in the field screening method) were also developed by US ACE to reduce false positives. Environmental Standards chemists plan to test the performance of this method on several on-going projects in the near future.

“Fly Eagles Fly”

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of Pennsylvania. Environmental Standards contacted the Pennsylvania Game Commission in October and officials continue to monitor the nesting area. When Wildlife Conservation Officer Scott Frederick confirmed the presence of at least one eaglet in the nest on May 19, 2005, he stated that one of his duties is to ensure that the eagle family is not subjected to any outside interference. Officer Frederick also indicated that signs would be posted in the area and that trespassers would be arrested and face federal prosecution. Our employees have been instructed to immediately report any trespassers to the Game Commission. Environmental Standards' employees are excited that efforts to reduce the use of pesticides are showing positive impacts to the recovery of these mighty raptors – right in our own backyard!

National Brownfield Association Forms Pennsylvania Chapter

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The primary objective of the Pennsylvania Chapter is to promote the responsible redevelopment of brownfields by providing a forum for the brownfield community to meet, exchange ideas, disseminate information, and discuss redevelopment issues at the local level. The strength of the chapter will lie in its professional diversity; a strong effort will be made to balance public and private sector memberships and to develop a membership profile that represents the geographic diversity within the Commonwealth.

The NBA, based in Chicago, Illinois, was established in 1999 as a non-profit, educational organization dedicated to stimulating the responsible re-

development of brownfields. The NBA is the premier association for government, businesses, and individuals involved in the redevelopment of brownfields. Other existing US NBA Chapters include Connecticut, Illinois, Massachusetts, Michigan, New Jersey, New York, and Ohio. Canadian NBA Chapters include British Columbia, Ontario, and Quebec.

For more information about the NBA or to keep updated on the development of the Pennsylvania Chapter, please visit www.brownfieldassociation.org. If you would like more information on or are interested in becoming a member of the PA Chapter Communications Committee, please contact Kathy Zvarick at kzvarick@envstd.com.

Departments Join Forces To Support Major Sediment Project

The Environmental Standards Geosciences, Information Technologies, and Chemistry Departments have "joined forces" to ensure the success of a large, complex remedial investigation/design project. The project will likely involve removal, treatment, and disposal of contaminated sediments (multiple constituents of concern) from a major navigable waterway. Environmental Standards has provided our Fortune 50 client with a variety of services to better characterize and visualize the environmental contaminants, to assist in the volume and cost projections for remediation, and to assist in negotiations with the lead state agency.

Environmental Standards was initially requested to provide comprehensive quality assurance oversight during sampling and characterization. Subsequently, the Geosciences and Information Technologies Departments were tasked with compiling a comprehensive historical database of available project

data. Although investigations at the project site have been ongoing since the late 1980s, a comprehensive database had not been prepared. Environmental Standards undertook an extensive data gathering effort that involved research of a number of data sources, including project reports, individual data tables, and previous consultants' databases.

After the data gathering was completed, operations, such as geo-referencing, data verification, and unit conversions, were performed on the data. Results from our data validation efforts were incorporated and a database of the known environmental analytical data was made available to the project team.

Database management is an ongoing task as new data are generated (and validated by our chemists) from investigations and new data sources are identified.

Once detailed data analysis, compilation, and validation tasks had been completed, the focus of Environmental Standards' efforts shifted to presentation of results. A web-based Geographical Information System (GIS) is currently employed to convey visual information rapidly to the project team. Any number of project team members can simultaneously access the GIS to produce high-quality dynamic maps and to retrieve project analytical data via the Internet.

During the course of the project, various data sources (e.g., bathymetry, side-scan sonar imagery, building features, magnetometry data, and aerial photographs) were consolidated in a visual framework that allowed for a straightforward comparison of data sets. Query tools were also used to interactively view and download selected analytical data sets.

To aid in the assessment and evaluation of the analytical data in the comprehensive database, Environmental Standards developed three-dimensional contaminant plume models for a number of constituents. The models were developed using the latest version of the Environmental Visualization System (EVS) software package developed by Ctech, Inc. EVS is a high-tech software package that allows the modeling and display of environmental site data in a three-dimensional framework. EVS was used to integrate data from a wide variety of project data sources, including the database of analytical results, project boring log files, site Autocad maps, and GIS shapefile layers.

The modeling results for each constituent of concern were displayed graphically as three-dimensional sampling locations, three-dimensional plume volumes above a certain action level, and three-dimensional kriged geological surfaces. Remedial sediment volume and contaminant mass estimates were also developed for

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The project will likely involve removal, treatment, and disposal of contaminated sediments from a major navigable waterway.

Community Celebrates Park's Redevelopment



On May 7, 2005, US EPA officials from Region 3's Hazardous Site Cleanup Division joined state and county officials and community residents at a ceremony in Lancaster, Pennsylvania, to celebrate the redeveloped Roberto Clemente Park. This 3.5-acre park was one of the first major projects undertaken by the Lancaster County Planning Commission (LCPC) as part of its US EPA-funded Brownfields Assessment Demonstration Pilot.

As reported in the Autumn 2003 issue of *The Standard*, Environmental Standards was selected to provide support in developing a functional capacity to aid in the redevelopment of this and other brownfields properties in Lancaster County. For this project, Environmental Standards performed a Phase I Environmental Site Assessment and was then directed by the LCPC to perform a Baseline Remedial Investigation in accordance with Pennsylvania's

Act 2 requirements for a Special Industrial Area. Subsequently, the firm was asked to implement limited soil remediation activities and to address lead and arsenic contamination. Environmental Standards' risk assessment determined that contaminant levels were well within the acceptable limits. Work concluded with a Baseline Environmental Report, at which point construction began at the park. Today, the park features a walking path and a state-of-the-art baseball diamond.

Redevelopment of the park is part of a community revitalization effort being coordinated by the Inner City Group, a non-profit, community development organization. After discovering historical fill material in the soils during the redevelopment planning process, Inner City Group reached out to the LCPC for support in determining whether environmental issues existed at the site that might impede redevelopment.

The late Roberto Clemente, born in Puerto Rico, was the first Latino admitted to the National Baseball Hall of Fame. The "Great One" played all of his 18-year baseball career in Pittsburgh. He was killed in 1972 in a plane crash while delivering supplies to earthquake victims in Nicaragua. He was known for his humanitarian efforts as well as his exceptional skills at the plate and in the field.

Environmental Standards Shares 10-Year History With Pennsylvania's Land Recycling And Remediation Act

Environmental Standards' history with Pennsylvania's Land Recycling and Environmental Remediation Standards Act (Act 2) dates back to Act 2's inception in the early 1990s and its enactment in 1995. Some of our senior executives played major roles in crafting the Act 2 language through their participation in advisory groups to the Pennsylvania Department of Environmental Protection (PA DEP) and legislators. Even today, this participation provides our staff meaningful insight into the original intent of Act 2 and the Chapter 250 regulations.

Environmental Standards has provided consulting and technical expertise on almost 50 Pennsylvania Act 2 brownfield sites. Services associated with these sites have included Phase I assessments, Phase II site investigations, fate and transport modeling, technical consulting, remediation, remediation oversight, human health risk assessments, ecological evaluations, and ecological risk assessments. We have successfully obtained releases of liability on 26 sites, and the remaining projects either opted out of the Act 2 program or are ongoing. Among our more interesting and complex projects were



the award-winning redevelopment of a former railcar manufacturing facility in Northeast Philadelphia and the investigation and remediation of a No. 2 fuel oil release at an elementary school (see *The Standard*, Vol. X, Issue III, Summer 2004 for details on this project). Other

projects have included battery disposal properties, chemical manufacturers, former manufactured gas plants, and large industrial facilities. Environmental Standards' Act 2 project experience has in-

cluded sites contaminated with volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polycyclic aromatic hydrocarbons (PAHs), inorganics, gasoline and fuel oil constituents, lead, pesticides, polychlorinated biphenyls (PCBs), and chlorinated solvents. We have assessed human health exposures to soil, sediment, groundwater, and surface water in addition to the vapor intrusion pathway for soil and groundwater contaminant

sources. Ecological evaluations have ranged from simple surveys and pathway elimination statements to full ecological risk assessments.

Currently, Environmental Standards has a representative on the PA DEP Cleanup Standards Science Advisory Board Risk Assessment Subcommittee (a committee of environmental professionals who consult with the PA DEP on emerging risk assessment issues and how these issues affect Act 2 and the Chapter 250 regulations). Members of our senior staff also actively participate in local brownfield roundtable programs and were closely involved in the development of the Pennsylvania Chapter of the National Brownfield Association (see related article on page 1). Environmental Standards is also a major sponsor of and participant in national brownfield conferences (see related article on page 7).

For more information about Environmental Standards' brownfield redevelopment experience, please contact Kevin Renninger, Director of Business Development, at 610-935-5577 or krenninger@envstd.com.

Act 2 Liability Protection Not Applicable to Farmland

Pennsylvania Department of Environmental Protection (PA DEP) Secretary Kathleen McGinty issued a press release in March 2005 to clarify PA DEP's position on Act 2 liability protection for non-commercial/industrial sites. Specifically, Secretary McGinty announced that PA DEP would no longer accept Act 2 remediation reports for agricultural land and orchards. This "clarification" was somewhat unexpected and has created considerable confusion among property owners, redevelopers, and attorneys, who have speculated about the possible economic and political motivation of the policy change.

Ms. McGinty stressed in the release that the intent of Act 2 was to address the voluntary cleanup and redevelopment of commercial and industrial land. "Expediting and encouraging the development of farmland would be in conflict with the clearly stated purpose of the legislature," explained the PA DEP Secretary.

PA DEP subsequently (April 4, 2005) issued "Addressing Pesticide Contamination on Agricultural Land Proposed for Development" to provide guidance for sampling, analysis, and management of pesticide-impacted soil on agricultural land (now excluded from



Act 2 liability protection). This document added to the confusion by its reference to "lands that have been farmed in the

normal course of farming practices."

The economic and political ramifications of PA DEP's new interpretation of Act 2 liability protection remain to be seen, and Environmental Standards' brownfields experts will be closely monitoring the situation. For information about how this policy change may affect your project, contact Gerry Kirkpatrick at 610-935-5577.

Departments Join Forces

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each constituent modeled. Estimates were produced for a number of diverse potential remediation scenarios. Animations of the modeling output were also created to show site conditions from different 3-D perspectives to provide another visualization aid.

Environmental Standards continues to support our client on this high-profile and very interesting project. The combined efforts of our Geosciences, Information Technologies, and Chemistry Departments have been instrumental in the success of the project to date. This project demonstrates how Environmental Standards can provide multifaceted support to clients with demanding projects.

The Cost of Environmental Compliance

To maintain environmental compliance in today's complex regulatory environment, industrial parties must expend significant resources both in terms of financial costs and administrative effort. New chief executive accountability requirements promulgated under the Sarbanes-Oxley Act of 2002 (SOX) increased pressure on companies to ensure that accurate and comprehensive information about potential liabilities and costs is gathered by management and communicated to executives to allow timely decisions regarding disclosure.

To meet these accountability requirements, many companies have been leaning more heavily on existing (or newly created) environmental management systems (EMSs), such as ISO 14001, to ensure that environmental compliance issues are accurately identified and reported. Unfortunately, it is often the case that even when a company closely follows its EMS, a

wide variety of field-based procedural and operational gaps remain undiscovered and frequently under-

reported. In fact, disclosure studies conducted during the past 10 years have verified that the majority of companies, including those in the oil and chemical industries, have historically not provided adequate disclosure relative to their environmental issues.

Issues that include complex environmental reporting requirements, detailed quality assurance and quality control checks, obligations to meet new regulatory requirements, potential remediation liabilities, and even international obligations such as greenhouse gases and carbon credits must be adequately addressed in existing operating procedures. Programs with these types of gaps can often produce immediate financial burdens (e.g., costly regulatory fines and emergency expenditures) as well as future liabilities (e.g., diminished public perception and poor management forecasting), to name but a few. Worse yet, should the gaps be interpreted as willful omissions of environmental financial liabilities under SOX,



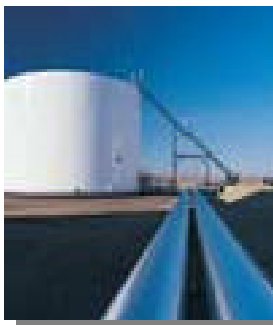
corporate management can incur even additional cost burdens and/or be subjected to criminal proceedings.

Nearly every aspect of an industrial facility's operations impacts or has the potential to impact the environment. With an increasing emphasis on environmental protection by state, federal, and international agencies as well as demanding corporate expectations, environmental regulations and requirements justifiably continue to increase in number, scope, and complexity. In recent years, the heightened commercial significance of environmental compliance and related liabilities has been clearly recognized by financial stakeholders through the introduction of new reporting requirements of the US Securities and Exchange Commission.

While industry executives and management hold the ultimate responsibility for good environmental stewardship, the management system charged with routinely executing compliance-related activities is – like the regulations themselves – also complex and dynamic. On a daily basis, compliance assurance activities are shared by employees, contractors, subcontractors, and a wide range of individuals in the supply chain and distribution network. With so much at stake and so many involved, it only makes good business sense to routinely perform third-party independent reviews of the many facets of your compliance activities.

Environmental Standards is an experienced auditing services provider that has benchmarked performance across a number of Fortune companies (representing diverse industry segments). Our services are designed to ensure regulatory compliance but also have the potential to immediately and substantially improve your bottom line.

For more information on the topic of environmental compliance, including case studies, an article entitled "Practical Environmental Audit Programs" is posted on our website — www.envstd.com.



US EPA Publishes New Guidelines For Carcinogen Risk Assessment

In March 2005, the US EPA approved its final *Guidelines for Carcinogen Risk Assessment*. The document, which had been in draft or "interim" form since 1999, is intended to provide the public with information on the US EPA's cancer risk assessment methodology, particularly with respect to the derivation of US EPA's published toxicity values. The US EPA contends that these guidelines represent an up-to-date approach to cancer risk assessment and an enhanced application of the best risk assessment science currently available.

The newly promulgated document emphasizes that the starting point for evaluation of carcinogenicity should be a critical analysis of available information instead of default assumptions. Also, the document stresses that an understanding of the mode of action of a compound can be key in identifying processes that may cause chemical exposures to manifest differently in certain populations or stages of life and in identifying those susceptible sub-populations and life stages. In particular, the new guidelines consider childhood a sequence of life stage as opposed to assessing children as a subpopulation. This approach allows the entire population to be considered, as well as exposures during early life that may contribute to carcinogenic effects that manifest later in life.

Changing the carcinogenicity weight-of-evidence classification system from the former A-B-C system to hazard descriptors that may be applicable to multiple weights-of-evidence represents a significant modification to US EPA policy. In some instances, a compound may fall under more than one of the following hazard descriptors: "carcinogenic to humans," "likely to be carcinogenic to humans," "suggestive evidence of carcinogenic potential," "inadequate information to assess carcinogenic potential," and "not likely to be carcinogenic to humans."

The 2005 guidelines allow for a dose-response assessment of different tumor types using an assessment of

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Environmental Laboratories Prepare For Final Accreditation Regulations

The Environmental Laboratory Accreditation Act (ELAA), signed into law on April 2, 2002, by former Governor Mark Schweiker, requires registration and accreditation of all laboratories performing environmental sample analyses associated with Pennsylvania Department of Environmental Protection (PA DEP) statutes or regulations. The purpose of the ELAA is to ensure the quality of the data by ensuring compliance with published methods and good laboratory practices. Accurate laboratory results are essential to the achievement of the goals of environmental laws and regulations.



The ELAA provides guidance regarding the aspects of laboratory analysis examined during the accreditation process. General standards are stipulated for laboratory supervision, laboratory personnel, physical facilities, laboratory equipment, supplies, reference materials, and analytical methodology. In addition, detailed quality assurance (QA) and quality control (QC) requirements are included for chemistry, toxic-

ity, microbiology, and radiochemistry analyses. The final proposed regulations and QA/QC requirements are available at the PA DEP website (www.dep.state.pa.us). The PA DEP expects to submit its final draft to the state's Environmental Quality Board for review by September, with a final version of the ELAA published in the *PA Bulletin* by the end of October.

Prior to the ELAA, only environmental laboratories performing drinking water analyses, oil and gas analyses, and radon analyses were accredited by PA DEP. The ELAA requires registration with eventual accreditation for all laboratories performing analytical testing associated with environmental law compliance. Small-flow treatment systems (*i.e.*, treating less than 2,000 gallons per day) that perform pH and residual chlorine monitoring only are exempt from the ELAA requirements.

A survey conducted by Environmental Training Partnership (ETP), a coalition of three state government environmental and economic development agencies, indicates that drinking water and wastewater system laboratories may have difficulty meeting ELAA standards. Forty-four percent of all small wastewater systems are considered

marginally proficient in laboratory analysis. Small drinking water systems demonstrate slightly better laboratory proficiency with 27% considered marginally proficient in laboratory analysis. Laboratory performance was rated as marginal for 36% of wastewater systems and 29% of drinking water systems. Laboratory QA/QC was rated as mediocre (*i.e.*, received a score of less than 6 out of 10) for 70% of wastewater facilities and 82% of drinking water facilities. ETP survey participants also estimated that the ELAA will have the most significant impact on wastewater systems with flows between 100,000 and 1 million gallons per day and approximately one-half of the wastewater systems with flows between 1 and 5 million gallons per day.

The Environmental Standards Chemistry Quality Assurance Department has the capacity, established protocol, and experienced chemists to evaluate and improve laboratory environ-



mental testing operations in order to meet ELAA requirements. Our services include "desktop auditing" (*e.g.*, review of the laboratory QA Plan and associated QC systems, review of laboratory Standard Operating Procedures [SOPs] for method compliance, review of technician training files/requirements), coordination of performance testing (PT) studies to evaluate analytical performance and to identify areas of weakness; performance of on-site laboratory audits to improve laboratory quality systems and analytical skill; and assistance in preparation for a formal laboratory accreditation audit. For more information about Environmental Standards' pre-certification services, please contact Kevin Renninger, Director of Business Development, at 610-935-5577.

Fraud Continues To Plague Environmental Community

Two more cases of environmental fraud were reported in the first quarter of 2005 and both offenders will likely serve prison time for their crimes. The defendant in one case, the owner and president of a former Pennsylvania laboratory, received a sentence of 16 months in prison for his participation in a scheme (mail fraud) involving false reporting of water and wastewater test results. In addition, he was ordered to pay approximately \$7,000 in restitution to his victims and a special assessment of \$3,400, to serve 36 months under court supervision, and to provide 80 hours of community service following his release from prison. Fraudulent results submitted by some clients were associated with their National Pollutant Discharge Elimination System permits.

The other case involved a repeat offender – a Pennsylvania man who received a one-year prison sentence for his environmental fraud conviction in 1997. In March 2005, the same individual, who was certified by the state and

federal governments to conduct underground storage tank (UST) removal, was indicted on charges associated with falsifying UST closure reports. The UST removal services allegedly included post-removal testing for environmental contamination; the testing was never performed yet results were provided to clients and submitted to the US EPA. The defendant, if convicted, could be sentenced to return to prison for up to 30 years in addition to substantial fines.

Guidelines For Carcinogen Risk Assessment

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observed data to establish a point of departure followed by an extrapolation, using either linear or nonlinear approaches, to lower exposure levels, if necessary. In addition, emphasis is placed on the characterization narrative of the hazard assessment, dose-response analysis, and exposure assessment when conducting toxicity

studies. Characterizations are critical for identifying/describing weight-of-evidence conclusions, areas of interpretation and rationale, strengths and weaknesses of an analysis, and alternative conclusions and uncertainties that should be considered. This information provides the basis for toxicity assessments, risk characterization, and uncertainty analysis of the risk assessment process.

Environmental Standards Personnel To Participate In Key Chemistry And Brownfields Events

In the coming months, Environmental Standards will be seen prominently at two industry-leading conferences with nationwide audiences.

In July, a number of Environmental Standards professionals will be active participants at the **21st Annual National Environmental Monitoring Conference (NEMC)** in Washington, D.C.

Rock J. Vitale, CEAC, CPC, Technical Director of Chemistry/Principal, will co-present a paper entitled "Chromium(III) Oxidation in Chromite Ore Processing Residue-Enriched Soils: Theoretical Predictions and Experimental Observations." In addition, Mr. Vitale co-authored three other papers scheduled to be presented during the conference.

One paper was written by Environmental Standards Senior Quality Assurance Chemist Stephen T. Zeiner, CEAC, CPC, and Senior Quality Assurance Chemist Eric T. Lahr — "Perchlorate Utilization of Ion Chromatography and Liquid Chromatography on Characterization Project." The second paper, co-authored by Environmental Standards Senior Quality Assurance Chemist Kyle R. Clay is entitled "An Evaluation of Analyte Isolation and Analytical Finish Methods for Cr(VI) in Solids."

The title of the third paper is "Method Detection Limits: A Data User's Perspective"; Quality Assurance Specialist/Principal David R. Blye, CEAC; Quality Assurance Specialist/Principal Ruth L. Forman, CEAC; and Senior Quality Assurance Chemist Donald J. Lancaster, M.S. are co-authors.

Another paper scheduled for pres-

entation, entitled "Application of Electronic Data Verification With Data Validation To Site Characterization Projects to Maximize Efforts," was authored by Mr. Zeiner, Ms. Forman, and Mr. Blye.

In addition to these presentations, Environmental Standards is a platinum sponsor of the conference, as noted on the NEMC website, www.nemc.us.

NEMC, organized by the US EPA, the Independent Laboratory Institute, and the American Council of Independent Laboratories, provides a forum for addressing policy and technical issues that affect monitoring in all media and across all environmental programs. The focus of this year's conference includes homeland security issues as they apply to environmental monitoring for terrorism agents, as well as innovative approaches for analyzing for conventional pollutants in soil, air, and water.

Plans are still underway for Environmental Standards' participation in **Brownfields 2005, "Reaching New Heights In Redevelopment,"** which is scheduled for November 2-4 in Denver, Colorado. Brownfields 2005 is the official US EPA and International City/County Management Association-co-sponsored forum on brownfields cleanup, redevelopment, and reuse.

As was the case last year, Environmental Standards is a sponsor of the conference, with a link on the Brownfields 2005 website and our logo prominently displayed on the exhibit hall floor plan. Two panel discussions involving industry leaders in the redevelopment effort are in the development stage. Watch the pages of upcoming editions of *The Standard* for more details.

Contact Information Available for Virginia Office

The doors have opened at the Environmental Standards Central Virginia office, located in downtown Charlottesville (recently identified as the nation's "most livable city"). As first announced in the Winter 2005 issue of *The Standard*, long-time Environmental Standards employee Phil McKalips manages the office; geoscientists Brad White and Maverick Raber complete the office team.

This new office currently serves one major account, but duties are expected to expand well beyond this single project.

Messrs. McKalips, White, and Raber can be contacted at :

Environmental Standards, Inc.
1218 East Market St.
Suite 100
Charlottesville, VA 22902
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Fax: 434-293-2715

For more information about services provided from our Virginia office, please contact Mr. McKalips at pmckalips@envstd.com.

Papers And Presentations

In addition to the papers listed in a related article on this page, Environmental Standards personnel authored the following works.

Vitale, Rock J. "Approaches to Designing a Low-Level Method." Texas Commission on Environmental Quality Environmental Trade Fair & Conference, Austin, TX, May 2, 2005.

Arthur, James R., Daniel P. Claycomb, P.G. "Reductive Dechlorination of Chlorinated Solvents Using *In-Situ* Biostimulation." *In-Situ* and On-Site Bioremediation Symposium, June 2005.

Play Ball!



Characteristic of the onset of spring, amenities such as warmer temperatures, budding vegetation, and extended daylight are welcomed by many, but maybe by none with as much enthusiasm as the Environmental Standards Co-ed Softball Team. May marked the beginning of play in the annual Phoenixville Area YMCA Softball League, in which Environmental Standards has participated for many years. This year, the team welcomes a new captain, as well as several new (and young) faces, who are determined to improve upon last year's post-season finish. As in previous years, the team is comprised of players from the Accounting, Chemistry, Geosciences, Information Technologies, and Marketing Departments. Through its sponsorship of the softball team, Environmental Standards provides an opportunity for employees to exhibit the commitment, excellence, and teamwork for which they are known professionally on the playing field while having FUN. Good luck to our team!



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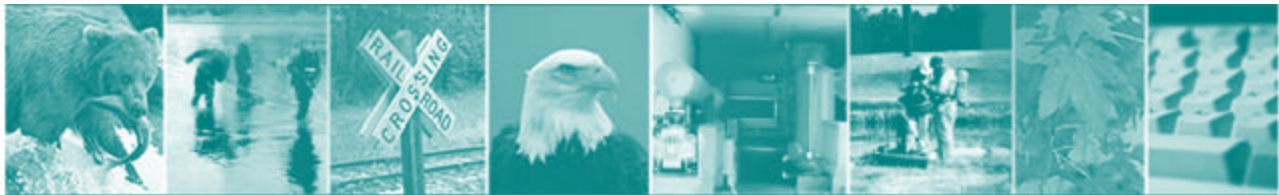
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*Setting the Standards for
Innovative
Environmental Solutions*



THE STANDARD

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Did you know?

- Americans generate 1.6 million tons of household hazardous waste per year, including paints, cleaners, stains, car batteries, motor oil, and pesticides.
- Recent studies estimate the annual global mercury pool (atmospheric) is as high as 5,000 tons, while the total mercury content in the ocean is estimated at 10,800 tons.
- Recycling 1 ton of paper saves 17 trees, 2 barrels of oil, 4,100 kilowatts of energy, 3.2 cubic yards of landfill space, and 60 pounds of air pollution.