

**Association of State and Territorial**  
***ASTSWMO***  
**Solid Waste Management Officials**

**ASTSWMO's mission is to enhance and promote effective State and Territorial waste management programs and affect national waste management policies.**



**FINAL SYMPOSIUM PROCEEDINGS**  
**Federal Facilities Managers Symposium**  
**Going Green: Balancing Sustainability Concepts with**  
**Remediation Goals**  
**March 12-13, 2008**  
**San Diego, CA**

**ASTSWMO FEDERAL FACILITIES MANAGERS SYMPOSIUM**  
**Going Green: Balancing Sustainability Concepts with Remediation Goals**

**Wednesday, March 12, 2008**

**WELCOME SESSION**

**Moderated by: Millie Garcia-Serrano**

This year's Symposium showcased the incorporation of innovation and sustainability in the selection of assessment and clean-up actions at federal facility sites across the nation. At the federal level, regulators and Department of Defense (DOD) have proceeded with the development of comprehensive "follow the carbon footprint" guidance aimed at tangible energy efficiency and renewable energy generation at federal facilities nationwide. At the State level, we have continued to explore ways to pilot "green cleanups" yielding greenhouse gas reductions and better energy efficiency returns without compromising the attainment of environmental goals and standards deemed protective of human health and the environment. This session kicked off ASTSWMO's 2008 Federal Facilities Managers Symposium with welcoming remarks from the State of California, ASTSWMO, U.S. Environmental Protection Agency (EPA) and DOD.

**ASTSWMO:** Peggy Harris (CA), ASTSWMO Vice-President

**State of California:** Leonard Robinson, Chief Deputy Director, CA DTSC

**EPA:** John Reeder, Director, EPA FFRRO

**DOD:** Rear Admiral Len Hering, U.S. Navy

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**PLENARY SESSION: THE SUSTAINABILITY PUSH – A CALL FOR ENVIRONMENTAL AWARENESS AT ALL LEVELS**

**Moderated by: Clarence Smith, IL**

*Federal and State agencies and the private sector are examining sustainable practices and green remediation technologies to encourage energy and resource efficient methods to protect human health and the environment. During this session, each of the speakers offered a sustainability perspective from their respective agencies/associations.*

**EPA Sustainability Update**

**Presenter: Shannon Davis, EPA Region 9**

An overview of EPA sustainability planning and activities.

**Focus on Sustainability**

**Presenter: Jennifer Kaduck, Georgia, ASTSWMO Sustainability Subcommittee Chair**

ASTSWMO identified environmental sustainability as a key focus area for the Association in its 2005 Strategic Plan. ASTSWMO established a sustainability action

plan, and as a result, workgroups were developed to focus on product design, product stewardship, recycling and land revitalization. The Sustainability Subcommittee and ASTSWMO's recent work in environmental sustainability will be presented.

**Balancing Sustainability with Remediation Goals – A Challenge**  
**Presenter: Jan Larkin, Office of Secretary of Defense (OSD)**

An overview of DOD sustainability planning and activities.

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**PLENARY SESSION: FEDERAL FACILITIES SUBCOMMITTEE**

*This session provided a summary of completed and ongoing projects conducted by the ASTSWMO Federal Facilities Subcommittee.*

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**LUNCHEON: NAVY REGIONAL RECYCLING PROCESSING FACILITY – INTEGRATED SOLID WASTE PROGRAM**  
**Speaker: Leslie McLaughlin, Navy Region Southwest (NRSW)**

The NRSW's Integrated Solid Waste Program manages construction and demolition (C&D) debris through a NRSW policy and mapping technology. They have a 85% waste-to-resource diversion rate. But even more exciting is that the technology tracks both costs to divert/recycling and costs to landfill. They can now prove that it is more cost effective to recycle than landfill, proving that economic and environmental sustainability go hand-in-hand.

The Regional Recycling Processing Facility diverted 46,655 tons of material from the landfill, and recycled 8,074 tons of material valued at \$1,150,000. In addition, they showed their commitment by implementing reductions in electrical demand even during peak load times through a number of energy conservation measures. Such measures included adjusting work hours to allow the high electrical demand solid waste baler to be run during non-peak demand hours. This dedication led to a 28 percent reduction in energy usage throughout the six buildings controlled by the center.

Assisting is the web-based mapping technology that has recently received attention at the city, State, and federal level. Among other things it tracks compliance with the region's C&D Diversion Program, calculates and analyzes costs associated with recycling and landfilling debris

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## **SUSTAINABILITY & SITE ASSESSMENT BREAK-OUT SESSIONS**

### **Session A: Protecting the Environment through Sustainability**

**Moderated by: Jeff Deckler**

*This session presented both the overall context of sustainability in cleanups, and gave real examples of how it can be done.*

#### **Fort Lewis: A Practical Roadmap to Sustainability – Within and Outside the Fenceline**

**Presenter: Birgitte Dodd Tingley, Center for Sustainable Solutions**

An overview of the U.S. Army's planning and activities for addressing sustainability issues.

#### **Optimization of a Hydrologic Basin to Capture a Chlorinated Solvent Plume: A Sustainable Low Energy Alternative to High Energy Sparge Walls**

**Presenter: John Armstrong, FL**

A large chlorinated solvent plume exists in the center of the Cape Canaveral Air Force Station Industrial Area. The plume is the result of historical discharges of solvents used during the cleaning of space launch vehicles. The solvent discharge has resulted in a dissolved plume, portions of which are moving towards discharge to a highly protected, environmentally sensitive lagoon. The dissolved plume is currently being cut-off using an energy intensive quarter mile long air sparge wall. A previously planned regional storm water basin is being redesigned to capture the ground water plume and eliminate the need for the energy and labor intensive sparge system. The combined use of a storm water facility to also intercept a contaminant plume presented substantial permitting issues emphasizing the need for functional partnering and flexibility when considering green environmental designs.

#### **Massachusetts Military Reservation (MMR) Wind Turbine Project**

**Presenter: Hap (Kent) Gonser, Army Environmental Command**

Remediation activities have often been focused on cleanup of soil and groundwater with little consideration of sustainability concepts of protecting the environment, being socially responsible and ensuring economic growth. As the long-term impact of human activities becomes more clear and interest in sustainability grows, more thought is being put into balancing remediation actions with economic, ecological and environmental impacts. At the MMR, the cleanup stakeholders are looking for ways to minimize these impacts while successfully accomplishing cleanup. Many of these efforts are focused on reducing energy demand from traditional sources. To that end, an overview of actions being taken to balance sustainability with cleanup will be presented with a focus on the use of renewable energy, especially wind energy.

## **Session B: Innovations in Site Assessment Principles**

**Moderated by: Jim Cutler, VA**

*This session focused on innovations in site assessment techniques that lead to better, more efficient characterization while reducing the overall environmental impact and waste generation.*

### **Munitions and Explosives of Concern (MEC) Assessment via Use of Working Dogs**

**Presenter: Hap (Kent) Gonser, Army Environmental Command**

Remediation activities have often been focused on cleanup of soil and groundwater with little consideration of sustainability concepts of protecting the environment, being socially responsible and ensuring economic growth. As the long-term impact of human activities becomes more clear and interest in sustainability grows, more thought is being put into balancing remediation actions with economic, ecological and environmental impacts. At the MMR, the cleanup stakeholders are looking for ways to minimize these impacts while successfully accomplishing cleanup. Many of these efforts are focused on reducing ecological and financial impacts during munitions investigation and cleanup. To that end, an overview of actions being taken to balance sustainability with munitions/UXO cleanup will be presented with a focus on the use of working dogs and robotics for site assessment and response.

### **Multi-Increment Soil Sampling – Application to Formerly Used Defense Sites (FUDS) Military Munitions Response Program (MMRP) Site Inspections (SIs)**

**Presenter: Hugh Rieck, U.S. Army Corps of Engineers (USACE)**

The application of multi-increment sampling (MIS) to evaluate contaminants of environmental concern in surface soil has grown quickly over the last five years. Additional impetus for rapid adoption of MIS resulted from publication of EPA Method 8330B, which includes an appendix based on studies of explosive compounds and propellant residues on active firing ranges conducted by researchers at the USACE Cold Regions Research and Engineering Laboratory (CRREL). MIS procedures provide a sample (and laboratory sub-sample for analysis) containing representative proportions of analytes in the study area (decision unit) from which the sample was collected. Unlike discrete sampling, the result from a single MIS sample approximates the mean concentration of the decision unit; the MIS approach requires relatively few samples to demonstrate reproducibility and precision of the estimated mean.

Successful adaptation and implementation of MIS is critically dependent on the selection of appropriate decision units. It requires not only an understanding of the mechanics of the methodology, but more importantly, an explicit articulation of the project sampling objectives is necessary to craft data quality objectives that can be met in terms of mean concentrations from the decision units. It is especially important that end users of the data (e.g. risk assessors) be consulted from the beginning of the planning process to delineate the decision units (e.g. size, location, and configuration). Some State regulatory agencies and EPA Regions have requested implementation of MIS at FUDS MMRP Site SI investigations. Thoughtful adaptation of MIS to these sites can provide a cost-

effective means of improving data quality and providing defensible and reproducible data. Whether or not the improved data quality leads to improved environmental and regulatory decisions depends on the design of the decision units, and the decision rules developed during the data quality objectives (DQO) process.

### **Advantages of Passive Sampling Methods for Groundwater Sampling at Hazardous Waste Remediation Sites**

**Presenter: Raymond Franson, MO**

Several passive sampling methods have been developed that offer multiple advantages over classical groundwater sampling methodologies, yet despite studies proving their efficacy, there is resistance to using them at many sites. The advantages and limitations of five passive sampling methods will be discussed (passive diffusion bags, Hydrasleeves, Snap Samplers, Gore Sorbers and Rigid Porous Polyethylene Samplers) in reference to low-flow sampling. All five passive methods are cheaper than purge or low flow methods and all five generate less hazardous waste and less waste in general. The cost of sampling is a critical consideration for both site characterization and long-term monitoring. But, the direct cost of sampling is only one component of the overall cost of sampling. The comparison of methodologies will focus not only on cost of a sample, but on data quality obtained. One size does not fit all in groundwater sampling and passive sampling methods add to the tools available for obtaining the least expensive, highest quality, groundwater sample.

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## **POLICY & PROGRAMMATIC UPDATES BREAK-OUT SESSIONS**

### **Session A: Federal Facilities Policy Updates**

**Moderated by: Monica Sheets, CO**

*As the universe of contaminants evolve, States and the Federal Agencies continue to move forward on implementing approaches to clean up these sites. The presenters focused on different approaches, all the while continuing to protect human health and the environment.*

### **Asbestos in Soil – Update on State Approaches**

**Presenter: Monica Sheets, CO**

Asbestos-contaminated soil has presented challenges at a number of redevelopment sites in Colorado, including federal facilities. In an effort to address such sites, Colorado developed amendments to its State Solid Waste Regulations, which establish protocols for the identification, management, and disposal of asbestos-contaminated soil. An overview of these regulations and the companion guidance will be presented, including specific analysis of their application in Colorado, and evaluation of similar programs in other States.

**Advances in Vapor Intrusion Modeling**  
**Presenter: Justin Deming, NY**

As our collective understanding of the soil vapor intrusion pathway has evolved over recent years, New York State has made the evaluation of soil vapor a priority at sites enrolled in the state's environmental remediation programs. This includes sites that are currently enrolled, sites that enroll in the future, as well as sites where remedial decisions have already been made. Toward this end, the State developed a guidance document and strategy for evaluating soil vapor intrusion at remedial sites in New York. Since the inception of this policy the soil vapor intrusion pathway has been evaluated and actions have been taken at hundreds of sites. An overview of New York's process for evaluating soil vapor intrusion, including sampling, modeling, data interpretation, and decision - making, will be presented. Emphasis will be placed on the need to examine multiple lines of evidence when evaluating the soil vapor intrusion pathway given the variable nature of soil vapor.

**Triggers for Sampling and Analysis of Emerging Contaminants at Federal Facilities**  
**Presenter: Paul Yaroschak, OSD**

Emerging contaminants (ECs) are chemicals and materials that do not have peer-reviewed human health standards, or the science and standards are evolving.

The DOD, the EPA and the Environmental Council of States (ECOS) formed a work group to tackle EC issues. Based on a national stakeholder workshop in November 2005, the work group identified four priority issues to resolve. One of the issues focuses on the authorities and considerations used to determine when to initiate action on a contaminant that may not have an EPA IRIS value or equivalent State standard. This presentation will provide a quick overview of DoD's EC program and discuss the key points/issues in the draft EC action triggers paper.

**Session B: Federal Facilities Program Updates**  
**Moderated by: Jennifer Roberts, AK**

*This session focused on the hurdles faced by all parties involved in the cleanup of munitions and the implementation of the PA/SI process. Presenters highlighted program policies and site-specific issues relative to munitions, PA/SIs and the reuse of sites.*

**FUDS – MMRP Mandate**  
**Presenter: Bradford McCowan, USACE**

An overview of the USACE FUDS MMRP SI activities and program, and plans for the future.

## **EPA PA/SI Outreach Efforts**

**Presenter: Doug Maddox, EPA FFRRO**

An overview of the U.S. EPA's work related to the MMRP.

## **Reuse and Redevelopment of Base Realignment and Closure (BRAC) Sites**

**Presenter: Julie Carver, Matrix Environmental Services**

What drives redevelopment at federal BRAC Sites? Environmental cleanup. What drives environmental cleanup at BRAC Sites? Sustainable, realistic reuse plans. The conversion of BRAC Sites to new civilian uses has offered one of the more demanding regional economic challenges facing a broad range of communities across the nation during the past four decades. This session will present several case studies of BRAC Sites across the nation which combined environmental cleanup with sustainable, realistic reuse plans to provide a stimulus to local economic growth.

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**Thursday, March 13, 2008**

## **SUSTAINABILITY & REMEDIATION BREAKOUT SESSIONS**

### **Session A: Protection the Environment through Sustainability**

**Moderated by: Rick Moss, CA**

*The session focused on sustainable practices at military bases that address soil contamination and employ green remediation technologies. Speakers discussed military training ranges where the projectiles are captured with little or no release of lead or other toxic substances; solar panels that provide power to remediation systems; and a matrix to evaluate and compare green remediation technologies.*

### **Military Training & Environmental Compatibility – Successful Bullet Collection at MMR**

**Presenter: Mark Begley, MA**

Above and beyond regulations, the use of pollution prevention techniques to increase sustainability is becoming routine across a wide variety of activities. The use of Best Management Practices (BMPs) as part of small arms range operations has been growing over the last decade at federal facilities (military ranges) and at recreational and public safety ranges. The environmental compatibility of tungsten nylon bullets, formerly used at the MMR, was first questioned as part of an evaluation of BMPs at the MMR ranges. A more sustainable option that includes capturing bullets in a collection system, rather than allowing projectiles to disperse into the environment, was pursued. A bullet collection system that includes recycled granulated rubber within a water tight containment system is proving its ability to capture, and allow for the recovery and recycling of, spent lead projectiles with little or no release to the environment.

**Latest Renewable Energy Efforts at Navy Region Southwest**  
**Presenter: Bernie Lindsey, U.S. Navy**

An overview of renewable energy activities being conducted by the Navy Region Southwest.

**California's Green Remediation Efforts**  
**John Scandura, CA**

The California Department of Toxic Substances Control (DTSC) oversees the remediation of sites at federal properties, regulated facilities, and abandoned sites. Many remediation projects are large and require long-term management for decades. Concerns have arisen over human activities that increase greenhouse gases and accelerate the depletion of energy and resources. These concerns are primarily related to energy intensive activities such as transportation, manufacturing, and construction but are pertinent to virtually every human activity. DTSC sponsored a Green Remediation Initiative to identify and encourage more energy and resource efficient remediation technologies and strategies to protect the environment.

The Green Remediation Initiative is focused on creating qualitative screening tools for identifying technologies and strategies that will have a lower impact than others. While not ruling out the utility of quantitative methods such as life cycle analysis, developing qualitative screening matrices is the initial step in this effort. Such matrices have been created and are planned for testing with actual remediation projects and technologies. This is consistent with the Green Remediation Initiative's initial goal of identifying those technologies and strategies that are "greener" than others with a possible future goal of conducting more detailed and quantitative analyses.

DTSC's Green Remediation Initiative is working with other efforts such as the Sustainable Remediation Forum (SURF) to examine greener cleanup technologies. By sharing information and work products and participating in reviews and analyses of technologies and projects, DTSC provides a regulatory agency perspective to endeavors such as SURF. By being active in the growing international community of experts grappling with sustainability issues associated with remediation, the Green Remediation Initiative aims to provide a regulatory perspective that will make adopting sustainability concepts and practices by regulatory programs a more certain and easily achieved outcome.

**Session B: Innovations in Site Remediation Principles**  
**Moderated by: Stephanie Andrews**

*This session was a continuation of Monday's Session B. Before going from site assessment to remediation, another type of assessment is needed. This assessment is for natural resource damages (NRDs). This session provided an overview of the NRD process before focusing on both conventional and innovative approaches to remediation.*

## **Natural Resource Damages – A Way Forward**

**Presenter: Jeff Edson, Edson Ecosystems**

CERCLA and the Oil Pollution Act define natural resource damage as “damages for injury to, destruction of, or loss of natural resources, including the reasonable costs of assessing such injury, destruction, or loss resulting from such a release.” These regulations define natural resources as “land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources,” and must belong to, be managed by, held in trust by, appertain to, or otherwise be controlled by the United States, any State, an Indian Tribe, a local government, or a foreign government. The measure of damages is the cost of restoring injured resources to their baseline condition, compensation for the interim loss of injured resources pending recovery, and the reasonable cost of a damage assessment. This presentation will provide the basics to the NRDs process, including the goals of NRDs, who are Natural Resource Trustees, and how to develop NRDs Assessments.

## **The MNA Trend: Does it Yield Protective Cleanups?**

**Presenter: Stephen Cobb, AL**

This presentation takes a look from the regulator’s perspective at the growing trend for environmental remedies to include or rely upon Monitored Natural Attenuation (MNA) as a significant part of the remedy. In the presentation, MNA selection factors, remediation timeframe factors, monitoring requirements, and budget factors are discussed, as are various advantages and disadvantages of selecting MNA remedies. Overall, the presentation concludes that MNA is often best utilized as simply one component of an overall remediation system which is designed, constructed, operated and monitored to address the specific circumstances of a specific site.

## **Applying Rapid Site Characterization Techniques and Used of Recycled Materials to Expedite Remediation and Enhance Mission Sustainability**

**Presenter: Steven Edlavitch, Defense Supply Center Richmond (DSCR)**

The Defense Supply Center Richmond (DSCR), a Defense Logistics Agency installation and primary field level activity, is performing a large-scale treatability study for two groundwater cleanup sites (OU6 and OU7) to evaluate the feasibility of innovative bioremediation technologies for cost effective treatment of contaminants. Both sites primarily consist of groundwater impacted by chlorinated solvents, including TCE and its daughter products. DSCR evaluated Biowall technology for OU-7, a former fire training area and Edible Oil Injection for OU-6, a former landfill. The reducing conditions of the groundwater suggest that the sites are both good candidates for anaerobic bioremediation. Furthermore, the groundwater at DSCR exhibit evidence of natural attenuation. The addition of an organic substrate to the groundwater stimulates microbiological growth, which will further enhance anaerobic conditions. The fermentation of the organic substrate will produce hydrogen which is used as an electron donor in the reduction of chlorinated solvents.

The TRIAD approach was used to expedite site characterization at the two sites. Pre-design sampling for both sites began in early February 2007. Electromagnetic borehole flow meter testing, direct-push in-situ groundwater sampling, on-site mobile lab, and the installation of Continuous Multi-Channel Tubing (CMT) Wells and pre-packed well screens, were all utilized in the rapid site characterization effort. The four biowalls, consisting of 378 yd<sup>3</sup> of locally derived decomposing vegetation were installed in July and the edible oil injections were completed in August 2007.

The long-term capital expenditures for these remediation techniques are minimal because operation and maintenance (O&M) requirements are minor. Remediation of the contaminants is performed in-situ with minimal above ground impact, minimal waste generation, and a small footprint at a given site. This provides increased mission capability and sustainability. These technologies have relatively low capital costs compared to other ex-situ remedial options, such as pump-and-treat, because the primary capital expenditure is related to the biowall installation, injection well installation or direct-push points.

DSCR is a member of the U.S. EPA National Environmental Performance Track. By utilizing these two technologies, DSCR is able to treat contaminated groundwater, with minimal above-ground disturbance, but also create habitat by enhancing the surrounding areas through the planting of native species trees, grasses and shrubs. Being good stewards of the environment and a member of the Wildlife Habitat Council, DSCR includes ecological enhancements in all of its remedial designs and believes the addition of habitat is crucial in the continuous restoration efforts being conducted.

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## **NEW TRENDS IN RISK ASSESSMENT & INSTITUTIONAL CONTROLS/LONG TERM STEWARDSHIP AT FEDERAL FACILITIES BREAKOUT SESSIONS**

### **Session A: New Trends in Risk Assessments for Federal Facilities**

**Moderated by: Ligia Mora-Applegate**

*This session provided examples of new tools and approaches being applied at Federal Facilities to support risk-based decision-making. Techniques for risk assessment are constantly evolving. Therefore, sound decisions to support sustainability that require reliable assessment of the human health and ecological risks associated with different courses of action are needed.*

### **Adaptive Risk Assessment Modeling System (ARAMS)**

**Presented by: Scott Hill, U.S. Army Environmental Command**

The Army requires the capability to accurately assess risk to human health and the environment resulting from the use of numerous military specific chemicals and materials. Army relevant contaminants are often unique from other industrial sources

resulting in a decreased level of knowledge about the toxicological and physiological aspects of these compounds.

Federal, State and Local laws and regulations require the use of toxicological data for predicting the potential for risk to human and ecological receptors. Use of limited, improper or poorly developed toxicological or physiological impact data significantly increases the uncertainty in risk assessment, which often leads to costly and conservative remedial actions. Similarly, although some toxicological assessments are made during the life-cycle assessment aspect of product development, full physiological and toxicological profiles require significant research that may not be feasible or predictable until development is complete. Risk assessment models and data assessment tools are also a part of this requirement as very few integrated systems are available that are relevant to Army needs.

The models that are available require maintenance and upkeep to remain valuable tools as new information and equations are being developed to better assess impacts and risk. To respond to this technology need the Army has undertaken a research, development test and evaluation program. One of the tools that has resulted from the Army's efforts is the Adaptive Risk Assessment Modeling System (ARAMS). An overview of the risk assessment technology program will be presented, including a more detailed discussion of the ARAMS tool.

**Alaska Case Study on EcoRisk**  
**Presented by: Colin Craven, AK**

The Alaska Department of Environmental Conservation initiates evaluation of a contaminated site's ecological impact by a prioritization ranking system titled the Exposure Tracking Model (ETM). If the ETM ranking indicates that the site contamination may present a significant threat to ecological receptors, a site evaluation following the DEC's ecological scoping guidance is warranted. The ecoscoping guidance provides a simple, systematic scoping process to evaluate whether a more complete ecological risk assessment is necessary. Many "off ramps" exist in the scoping process to help screen out sites that do not merit further evaluation. Completing the ecoscoping process results in a summary report that documents evidence of any acute toxicity, summarizes the complete exposure pathways and the receptors present, describes the habitat quality and quantity, and summarizes the contaminants of concern with associated screening levels. Ecological risk assessment in Alaska remains relatively rare, but some recent examples illustrate the interesting and unique nature of contaminated sites in Alaska. Presented are common examples encountered in Alaska, such as fuel releases into wetland or tundra environments that end at the ecological scoping phase, to a more exotic example involving duck mortality caused by munitions constituents at the Eagle River Flats near Anchorage, Alaska.

## **Trichloroethylene (TCE) Toxicity Values for Risk Assessment and the Vapor Intrusion Pathway Presented by: Mary Cooke, EPA FFRRO**

EPA's Office of Solid Waste and Emergency Response (OSWER) has developed guidance addressing TCE toxicity values for risk assessment and the vapor intrusion pathway. Its purpose is (1) to recommend interim toxicity values for TCE for use in evaluating potential site-specific risks from inhalation or oral exposures and (2) to recommend a multiple lines of evidence approach for assessing human health risk in the vapor intrusion (VI) pathway for Superfund (CERCLA) and hazardous waste (RCRA) sites. These recommended interim toxicity values are intended to be used until IRIS completes its TCE re-assessment following the NAS report, or until further scientific analysis indicates a more appropriate value is available. By following this draft guidance, OSWER expects to see greater national consistency in how vapor intrusion sites (with potential TCE contamination) are addressed by EPA regions.

### **Session B: Institutional Controls (ICs) and Long-Term Stewardship (LTS) at Federal Facilities**

**Moderated by: Ruben Zamarripa**

*This session focused on the challenges and successes with the long-term maintenance of remedies with ICs at federal facilities. Approaches, EPA perspective, and roles and responsibilities with regard to the enforcement of ICs were discussed during this session.*

### **Institutional Controls White Paper**

**Presenter: Jim Cutler, VA**

After researching the topic for over a year, the Policy & Technology Focus Group (Federal Facilities Research Center-ASTSWMO) completed the above-titled issues paper. It is posted on the ASTSWMO website ([http://www.astswmo.org/publications\\_federalfacilities.htm](http://www.astswmo.org/publications_federalfacilities.htm)). The paper focuses on the issues and challenges unique to federal facilities in relation to the documentation, implementation and enforcement of IC/LUCs. It draws important distinctions between active and transferred facilities and the particular regulatory authority governing the cleanup (CERCLA, RCRA, etc.) of these sites.

IC/LUCs are memorialized in many documents ranging from RODs to LUCIPs to legal deed restrictions. It is important to identify which documents are recognized as decision documents (subject to regulatory approval and enforcement) and ensure that adequate IC/LUC descriptions are present since this varies with the particular agency and regulatory program.

The implementation section examines mechanisms for ensuring that IC/LUCs work like they were intended. At active facilities the specific chain-of-command and operational procedures already in place provide a good framework to implement the required IC/LUCs. It is important that responsibilities for IC/LUC oversight and communication with regulators are clearly delineated. Implementation of ICs/LUCs at transferring

federal facilities requires the willingness and ability of future owners to comply with IC/LUC provisions. The federal agency, however, remains ultimately liable for proper IC/LUC implementation (e.g. CERCLA 120 (h) transfer process) but may require the future landowner to assume responsibility for maintaining and monitoring the IC/LUC.

With only a few exceptions, no national requirements exist for notification regarding ICs/LUCs, although some States and local governments have developed registry programs that are useful for monitoring and tracking ICs/LUCs. Some States also have statutory programs to implement and enforce ICs/LUCs that would affect transferred property. Examples from Colorado, Missouri and Florida were highlighted.

The purpose of this paper is to provide a framework for States to assess their role in ensuring that ICs/LUCs remain an effective and protective remedy now, and in the future.

### **Missouri's Air Force Long-Term Stewardship Agreement**

**Presenter: Ruben Zamarripa, MO**

Across the nation, more and more remedies are having an institutional control component to them with residual contamination left to be managed for years into the future. The remedies can raise uncertainty in the future if they are not being monitored, enforced, or if the information is mismanaged. Missouri continues to focus on figuring out ways to implement systems and processes to prevent residual contamination at cleanup sites from posing future risks to people and the environment. This presentation will showcase Missouri's Long-Term Stewardship Agreement with the Air Force and the EPA-Region VII for the long-term maintenance of institutional controls at 150 former missile silos and 15 launch control facilities no longer owned by the Air Force. Key topics in this presentation will be discussing the unique challenges with the enforcement of institutional controls as well as with the identification of roles and responsibilities among the agencies.

### **Long-Term Stewardship Lessons**

**Presenter: Mary Sanderson, EPA Region 1**

With the continued progress of hazardous waste cleanup programs at federal facilities, we now have more experience with long-term stewardship obligations and regulatory agency oversight responsibilities at these facilities. Experience and "lessons learned" from the cleanup of federal facilities throughout New England will be presented. Topics that will be covered include long-term performance monitoring and remedy performance optimization, remedy modifications, institutional controls, property conveyance, and "smart growth" integration with the redevelopment of BRAC bases. A recent enforcement case on long-term monitoring requirements will be discussed, as well as approaches at both open bases and the redevelopment of closed bases utilizing sustainability principles.

**PLENARY SESSION: MUNITIONS SESSION**  
**Moderated by Clarence Smith, IL**

*This session focused on the current universe of munitions policy from EPA, ITRC, and ASTSWMO. The presenters offered ways forward to address the numerous munitions sites across the country as well as offered an opportunity to discuss other important munitions issues.*

**Quality Control (QC)**

**Presenter: Jim Pastorick, ITRC**

The ITRC UXO Team is completing development of a technical and regulatory document on QC on Munitions Response Projects. There is currently little consistency in the way QC is performed on MR projects. The ITRC QC document will describe appropriate QC tools and procedures that can be applied to MR projects to demonstrate adequate detection and removal of MEC. Development and approval of this document by the members of ITRC, including state regulators, the EPA, the DoD and the component armed services, and MR contractors is intended to increase standardization of MR QC nationally and result in more consistently high quality MR projects. During this presentation, Jim Pastorick, a member of the UXO Team, will introduce the new QC document and describe the QC approach it recommends.

**ASTSWMO/State Updates**

**Presenter: Clarence Smith, IL**

**Munitions and Explosives of Concerns Hazardous Assessment (MEC HA)**

**Presenter: Doug Maddox, EPA FFRRO**

Information on the MEC HA is provided at:

[http://www.epa.gov/fedfac/documents/hazard\\_assess\\_wrkgrp.htm](http://www.epa.gov/fedfac/documents/hazard_assess_wrkgrp.htm)

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**PLENARY SESSION: “HOT BUTTON” QUESTION AND ANSWERS FORUM**  
**Moderated by: Millie Garcia-Serrano**

*This session offered attendees the opportunity for candid, closed-door discussions on State and Federal program funding, the changing nature of Federal Facility cleanups, long-term operation and maintenance costs and strategies, and other topics submitted by attendees.*