

**deponie-stief**

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U.S. ENVIRONMENTAL PROTECTION AGENCY

## TechDirect, January 1, 2009

Happy Holidays and may you have a prosperous new year! Welcome to TechDirect. Since the December 1 message, TechDirect gained 173 new subscribers for a total of 32,398. If you feel the service is valuable, please share TechDirect with your colleagues.

Anyone interested in subscribing may do so on CLU-IN at <http://clu-in.org>. All previous issues of TechDirect are archived there. The TechDirect messages of the past can be searched by keyword or can be viewed as individual issues.

TechDirect's purpose is to identify new technical, policy and guidance resources related to the assessment and remediation of contaminated soil, sediments and ground water.

Mention of non-EPA documents or presentations does not constitute a U.S. EPA endorsement of their contents, only an acknowledgment that they exist and may be relevant to the TechDirect audience.

### TIP's News Corner:

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### > New Year, New CLU-IN!

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**The new year will bring about a few changes to the Clean Up Information Network.** EPA's Technology Innovation Program staff will highlight some of these new changes to the CLU-IN website and internet seminars during a free session on January 30th 2009. Participants will help beta-test the new interface for CLU-INs live internet seminars while learning about its expanded features. In addition, this seminar will provide a unique sneak peak to the new face to the CLU-IN website expected to go live in February 2009. Furthermore, throughout 2009, CLU-IN will highlight several important issues and technologies such as Green Remediation by promoting important documents, seminar series, and other online resources. We welcome your comments and suggestions on the updates to CLU-IN as well as our other services such as internet seminars.

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### > Upcoming Live Internet Seminars

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**IIRC Use of Risk Assessment in Management of Contaminated Sites - January 6, 2:00PM-4:15PM EST (19:00-21:15 GMT).** This training course identifies how various risk-based approaches and criteria are applied throughout the processes of

screening, characterization, and management of contaminated sites. The training course and associated overview document, Use of Risk Assessment in Management of Contaminated Sites (RISK-2, 2008), are intended for risk assessors and project managers involved with the characterization, remediation, and/or re-use of sites. The training and overview document provide a valuable tool for federal and state regulatory agencies to demonstrate how site data collection, risk assessment, and risk management may be better integrated. For more information and to register, see <http://www.itrcweb.org> or <http://clu-in.org/studio> .

**ITRC Quality Considerations for Munitions Response Projects - January 15, 11:00AM-1:15PM EST (16:00-18:15 GMT).** This training introduces state regulators, environmental consultants, site owners, and community stakeholders to Quality Considerations for Munitions Response Projects (UXO-5, 2008), created by the ITRC's Unexploded Ordnance Team. In this document, quality is defined as "conformance to requirements." To manage quality, the quality requirements of the project must first be understood. Requirements must be precisely stated and clearly understood by everyone involved. A plan is then put in place to meet those requirements. The UXO Team emphasizes taking a whole-system approach to designing, planning and managing a munitions response (MR) project to optimize quality. This training course is intended for an intermediate audience and assumes a basic understanding of specialized processes associated with MR projects. For more information and to register, see <http://www.itrcweb.org> or <http://clu-in.org/studio> .

**ESTCP Funding Opportunities - January 15, 2009, 2:00 PM - 4:00 PM, EST (19:00-21:00 GMT).** This seminar will provide a summary of the Environmental Security Technology Certification Program (ESTCP) funding opportunities for interested investigators to conduct innovative technology demonstrations/validations. This "how to play" briefing will offer essential information for those who wish to understand new funding opportunities within ESTCP. The FY09 ESTCP solicitation was released on January 10 and attendees may use this time to ask general questions about the solicitation. For more information and to register, see <http://www.itrcweb.org> or <http://clu-in.org/studio> .

**ITRC Perchlorate Remediation Technologies - January 22, 11:00AM-1:15PM EST (16:00-18:15 GMT).** This training introduces state regulators, environmental consultants, site owners, and community stakeholders to Remediation Technologies for Perchlorate Contamination in Water and Soil (PERC-2, 2008), created by ITRC's Perchlorate Team to assist reviewers in assessing the adequacy of perchlorate remediation projects. This course gives the student a background in the available remediation technologies to treat perchlorate contamination, discusses emerging technologies, and presents case studies of applications. For more information and to register, see <http://www.itrcweb.org> or <http://clu-in.org/studio> .

**EPA A New Year, A New CLU-IN! - January 30, 2009, 1:00 PM - 2:00 PM, EST (18:00-19:00 GMT).** Technology Innovation and Field Services Division (TIFSD) staff will highlight new changes to the CLU-IN website and internet seminar platform during this one hour event. Participants will help beta-test the new interface for CLU-INS free live, internet seminars while learning about its expanded features. In addition, this seminar will provide a unique sneak peak to the new CLU-IN website expected to go live in February 2009. TIFSD staff will also solicit comments and suggestions for future improvements to CLU-IN. For more information and to register, see <http://www.itrcweb.org> or <http://clu-in.org/studio> .

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## > New Documents and Web Resources

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**Green Remediation Web.** This CLU-IN platform serves as EPA's primary vehicle for sharing information about green remediation (GR) and inspiring novel ways to employ GR best management practices. Since its Earth Day 2008 introduction, GR Web has grown to accommodate a new user-friendly "toolbox" of best practice, contracting, decision-making, and partnership tools; 22 brief "profiles" of green remediation strategies already used at specific sites; nearly 80 key documents or related

organizational links; and a mechanism for requesting GR details or technical assistance. GR Web's technical information focuses on holistic sustainability of existing or anticipated remedies; guidance and policy issued by government agencies; integration of renewable energy resources; green strategies for design, construction, and operation of remedies; and treatment system optimization resulting in green cleanups. View and use at <http://clu-in.org/greenremediation/> .

**Green Remediation: Best Management Practices for Excavation and Surface Restoration (EPA 542-F-08-012).** This quick-reference fact sheet provides examples of planning and field strategies for increasing sustainability of contaminated soil or sediment excavation and subsequent land restoration under any regulatory framework. The document focuses on opportunities to reduce the negative impacts of excavation, such as high rates of fuel consumption, transport of air-borne contaminants, uncontrolled stormwater runoff, soil erosion, and ecosystem disturbance. Green remediation encourages decision-makers to weigh the environmental and economic tradeoffs of implementing remedies such as excavation and to closely coordinate remedy implementation with long-term site use (December 2008, 4 pages). View or download at <http://www.clu-in.org/techpubs.htm> .

**Environmental Technology Verification (ETV) Program Materials Management and Remediation Center.** The ETV Program is pleased to announce the addition of the new Materials Management and Remediation (MMR) Center. Battelle Memorial Institute has been awarded the cooperative agreement to operate the new MMR Center. This center will verify materials management technologies, including for recycling, beneficial use of waste materials, recovery of useful components of waste, and treatment to minimize disposal requirements (e.g., containment, volume, cost). The MMR Center will also verify technologies to remediate contaminated land and ground water, such as is found at Superfund sites and other properties where industrial or commercial activities have resulted in a legacy of hazardous constituents that limit future use of the property. For more information, visit <http://www.epa.gov/nrmrl/std/etv/center-mmr.html> .

**Technology News and Trends (EPA 542-N-08-006).** This issue highlights innovative strategies for integrating ecological restoration into intrusive cleanup remedies or applying ecologically based approaches to passively treat contaminated media (December 2008, 6 pages). View or download at <http://clu-in.org/techpubs.htm> .

**Frequently Asked Questions Regarding Management of Chlorinated Solvents in Soils and Groundwater.** This brief document addresses 25 key questions, providing a concise overview of current knowledge regarding the management of subsurface chlorinated solvent releases. Source zone areas are defined and discussed, with summaries of the benefits and limitations of various source characterization and remediation technologies. The document addresses current technical and practical limitations, as well as the changes that have occurred over time at many chlorinated solvent sites. Although the document is meant neither to foster nor discourage source zone treatment, it takes a hard look at the costs and performance of the most commonly used source zone treatment technologies and compares source treatment to alternative containment approaches (July 2008, 38 pages). View or download at <http://www.estcp.org/viewfile.cfm?Doc=ER-0530-FAQ.pdf> .

**Comparison of Pumped and Diffusion Sampling Methods to Monitor Concentrations of Perchlorate and Explosive Compounds in Ground Water, Camp Edwards, Cape Cod, Massachusetts, 2004-05.** Laboratory and field tests were conducted at Camp Edwards on the Massachusetts Military Reservation on Cape Cod to examine the utility of passive diffusion sampling for long-term monitoring of concentrations of perchlorate and explosive compounds in ground water. The results of laboratory tests in which diffusion samplers were submerged in containers filled with ground water containing perchlorate, RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine), and HMX (octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine) indicate that concentrations inside the diffusion samplers equilibrated with concentrations in the containers within the 19-day-long test period. The results of the field tests indicate generally good agreement between the pumped and diffusion samples for concentrations of perchlorate, RDX, and HMX. The concentration differences indicate

no systematic bias related to contaminant type or concentration levels (December 2008, 26 pages). View or download at <http://pubs.usgs.gov/sir/2008/5109/> .

**An Overview of Land Use Control Management Systems (ITRC BRNFLD-3).** This document presents an overview of various systems and state programs that track, monitor, and/or educate people on Land use controls (LUCs). Moreover, it describes each of these systems and programs and explains what and how information is provided by each system. Information about the various technologies and their associated costs for development and implementation is provided, advantages and limitations are discussed, potential users are identified, contact information for the user is provided, and case studies offer insight into implementation efforts. It is important to note that, due to the ongoing and sometimes contentious debate about the appropriateness of LUCs in comparison to permanent, active, or complete remedies, this document does not evaluate the policy issues related to LUCs or their role as part of an appropriate solution to any specific environmental condition (December 2008, 134 pages). View or download at <http://www.itrcweb.org/Documents/BRNFLD-3.pdf> .

**Quality Considerations for Munitions Response Projects (ITRC UXO-5).** In this document the ITRC Unexploded Ordnance (UXO) Team provides guidance to environmental regulators on how to define quality, how to systematically plan for and achieve quality results, and how to apply these concepts to processes common to a munitions response (MR) project. The document also provides real-world examples to illustrate how the proper or improper application of the quality concepts presented in this document affect the quality of MR projects. In this document, quality is defined as conformance to requirements. To manage quality, the quality requirements of the project must first be understood. Requirements must be precisely stated and clearly understood by everyone involved. A plan is then put in place to meet those requirements. The UXO Team emphasizes taking a whole-system approach to designing and managing an MR project to optimize quality (October 2008, 83 pages). View or download at <http://www.itrcweb.org/Documents/UXO-5.pdf> .

**December 2008 State Coalition for Remediation of Drycleaners Newsletter.** The State Coalition for Remediation of Drycleaners (SCRD) produces a newsletter to announce recent events and undertakings. The December 2008 issue discusses recent additions to the SCRDR web site, the 2008 SCRDR meeting, state and national updates, presentations by SCRDR members at national conferences, state progress on remediation of drycleaning sites, remedial technologies employed at SCRDR drycleaning sites, and upcoming events (December 2008, 7 pages). View or download at <http://www.drycleancoalition.org/download/news1208.pdf> .

**Enhanced Filtration and Contaminant Degradation Opportunities Offered by Natural Drainage Systems.** This document was prepared by Julia Kane Africa during an internship with the U.S. Environmental Protection Agency, sponsored by the Environmental Careers Organization. This paper focuses on the treatment of high molecular weight (HMW) polycyclic aromatic hydrocarbons (PAH), and the potential for bioswales and rain gardens to mitigate contamination in urban settings is discussed. This paper is designed to serve as a point of reference for planners, public officials, and ecologists interested in exploring what contribution biofiltration and phytoremediation can make to polycyclic aromatic hydrocarbon mitigation of urban run-off (August 2008, 20 pages). View or download at <http://www.clu-in.org/techpubs.htm> .

**In-Situ Chemical Oxidation: A Study of the Current State of the Technology.** This document was prepared by Matthew West during an internship with the U.S. Environmental Protection Agency, sponsored by a Cooperative Agreement with the University of Arizona. Chemical oxidation is one of the many different methods of site remediation that has emerged lately as an alternative method to traditional techniques. Chemical oxidation is based upon the theory that by introducing certain reactive chemicals into the contaminated aquifer, the contaminant in question can be converted into less harmful compounds in a relatively automated process. After the reactive chemicals (reagents) are introduced into the aquifer, they work by themselves and are driven by the internal chemical energy. Furthermore, chemical oxidation has been shown to be effective at the destruction of the dissolved phase of

non-aqueous phase liquids (NAPL), which are known to be difficult to remediate through other tactics. Therefore, if administered correctly, in-situ chemical oxidation (ISCO) has the potential to be a low-cost, fast, effective, and relatively low maintenance remediation technology (August 2008, 9 pages). View or download at <http://www.clu-in.org/techpubs.htm> .

**EUGRIS Corner.** New Documents on EUGRIS, the platform for European contaminated soil and water information. More than 25 resources, events projects and news items were added to EUGRIS 1 - 24 December, 2008. These can be viewed at <http://www.eugris.info/whatsnew.asp> . Then select the appropriate month and year for the updates in which you are interested. The following reports were featured on EUGRIS:

**Report of the NICOLE Workshop: Environmental Decision Support Systems 9-10 October 2008 Madrid, Spain.** (2008). Decision support tools (DSTs) integrate environmental data and simulation or conceptual models into a framework for supporting decision-making for site characterisation, monitoring, or remediation. DSTs are tools that facilitate the use of data, derivations and models and/or structure the processes in decision making. This workshop presented a range of decision support tool/system functions with some examples and case studies. Its discussion related to the capabilities and limitations of such tools and systems and their degree of acceptance in daily decision making processes. View or download at [http://www.nicole.org/documents/stream.aspx?o=2&fn=NICOLE\\_Docs\\_222.pdf](http://www.nicole.org/documents/stream.aspx?o=2&fn=NICOLE_Docs_222.pdf) .

#### **RTD RESULTS: USE, EXPLOITATION AND COMMUNICATION**

**EXPERIENCES ECODIS project.** ECODIS is an FP6 specific target research project on dynamic sensing of chemical pollution disasters and predictive modelling of their spread and ecological impact. The project is close to completion and the final integrating activities have included an international conference on 'Chemodynamics of Ecosystems' at the Centro Stefano Franscini, Monte Verita, Switzerland (abstracts are available at [www.eawag.ch/chemdyn](http://www.eawag.ch/chemdyn)). The outcomes of ECODIS were disseminated to potential end users at a workshop on 28 November at the JRC-IHCP in Ispra, IT. The dynamic approach to risk assessment developed by the project involves measurement and modelling of spatial and temporal distributions of pollutants and their biological impacts, coupled with macro-scale flows in a water body. A technical guidance document on pollution disaster monitoring and ecological impact prediction will be available in early 2009. View or download at <http://www.fenk.wau.nl/ecodis> .

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### **> Conferences and Symposia**

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**National Forum on Vapor Intrusion: Science, Technology and Policy, Philadelphia, PA, January 12-13, 2009.** This forum will be structured on dual tracks with common sessions. Technical presentations on sampling, assessment, risk, and engineering are being planned, and case studies illustrating a cross section of vapor intrusion issues from the perspective of community stakeholders, Brownfields, EPA, and states will be presented. There will be two breakout sessions: one on community issues and one on government programs. For more information and to register, see <http://www.epa.gov/osp/stlworkshops.htm> .

**Global Perspectives on Green Remediation Making Clean Green, Sacramento, CA February 4, 2009.** The California Department of Toxic Substances Control (DTSC), and co-sponsors U.S. EPA Region IX and the Groundwater Resources Association, is hosting a free, one-day symposium open to the public, the target audiences are community members impacted by contaminated sites, interested Brownfield developers, cleanup consultants, and government employees of DTSC, the Water Boards, Certified Unified Program Agencies (CUPAs), and federal agencies. The symposium will offer opportunities to share assessment tools, techniques and perspectives on incorporating sustainability concepts and practices into state and

federal environmental clean-up programs, and bring attention to upcoming regulatory changes regarding Greenhouse Gas reductions. For more information and to register, see <http://www.dtsc.ca.gov/OMF/GlobalPerspectives.cfm>.

**NOTE: For TechDirect, we prefer to concentrate mainly on new documents and the Internet live events.** However, we do support an area on CLU-IN where announcement of conferences and courses can be regularly posted. Currently there are 137 conferences and courses featured. We invite sponsors to input information on their events at <http://clu-in.org/courses> . Likewise, readers may visit this area for news of upcoming events that might be of interest. It allows users to search events by location, topic, time period, etc.

If you have any questions regarding TechDirect, contact Jeff Heimerman at (703) 603-7191 or [heimerman.jeff@epa.gov](mailto:heimerman.jeff@epa.gov). Remember, you may subscribe, unsubscribe or change your subscription address at <http://clu-in.org/techdrct> at any time night or day.

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