Message #32: October 1999

Since September 1, TechDirect gained 259 new subscribers for a total of 7265. If you're just joining us, welcome. We try to keep this as brief as possible, but provide information relevant to your needs. Your feedback is most welcome.

Mention of non-EPA documents 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.

This month, by happenstance, most of the documents highlighted deal with remediation and characterization of groundwater.

Documents

Groundwater Cleanup: Overview of Operating Experience at 28 Sites (EPA 542-R-99- 006). This report was published by the U.S. EPA Technology Innovation Office. It compiles information from 28 case studies of groundwater cleanup systems, including 26 pump-and-treat systems (P&T), 2 permeable reactive barriers, and 1 site where a reactive barrier replaced a P&T system. In situ bioremediation and air sparging are also used in conjunction with several of the P&T systems. [The full 28 case studies, as well as 112 other studies are available at http://www.frtr.gov under Cost and Performance.] This report is divided into sections dealing with site characteristics; system design and operation; performance; cost and factors affecting performance and cost [September 1999, 66 pages]. View or download from http://clu-in.org/techpubs.htm . For hard copies, contact (800) 490-9198 or (513) 489-8190 or fax your request to (513) 489-8695.

Reliability-based Uncertainty Analysis of Groundwater Contaminant Transport and Remediation (EPA 600-R-99-028). This report was published by the U.S. EPA Kerr Environmental Research Center. It presents a probabilistic modeling tool based on first- and second-order reliability methods to account for parameter uncertainty in ground water transport and remediation. The methodology is applied to analytical ground water models to provide a simple screening tool for the assessment of contamination and remediation [June 1999, 82 pages]. View or download at ftp://ftp.epa.gov/pub/ada/reports/reliability.pdf . Hard copies should be available in two weeks, contact Kay Cooper at cooper.kay@epa.gov or (580) 436-8651.

3DHYDROGEOCHEM: A 3-Dimensional Model of Density-Dependent Subsurface Flow and Thermal Multispecies-Multicomponent HYDROGEOCHEMical Transport (EPA/600/R-98/159) . This report was published by the U.S. EPA Kerr Environmental Research Center. It presents a three-dimensional finite-element numerical model designed to simulate chemical transport in subsurface systems with temperature taken into account. Four application examples, including: a 3-D subsurface flow; 3-D reactive chemical transport; 3-D heat transport; and a 3-D coupled flow-transport-transfer example to demonstrate the capability of the model [July 1999, 161 pages]. View or download at ftp://ftp.epa.gov/pub/ada/reports/hydrogeo3d.pdf . For hard copies, contact Kay Cooper at cooper.kay@epa.gov or (580) 436-8651.

RealVideo Presentation: In Situ Alcohol Flushing for Remediation of NAPL Source Zones. This 28 minute video describes the goals and results of tests using In Situ Alcohol Flushing as a cost effective means for extracting Non-Aqueous Phase Liquids (NAPLs) from three test sites. In order to view this video, you need to have the free RealPlayer G2 installed on your computer. Please note that this video is not viewable using earlier versions of RealPlayer. [If you do not have RealPlayer G2 installed, you may download the program for free from The RealNetworks web site at http://www.real.com/products/player/downloadrealplayer.html .] View the in situ solvent flushing video at http://clu-in.org/techpubs.htm.

In Situ Chemical Treatment (TE-99-01). This E-series report was published by the Ground Water Remediation Technologies Analysis Center (GWRTAC). The E-series reports provide a state-of-the-art review of a given class of technology. This report contains information on in situ chemical treatment technologies gathered primarily from peer-review papers and publications and personal communications with involved parties [July 1999, 82 pages]. View or download at http://www.gwrtac.org/pdf/inchem.pdf .

Dynamic Underground Stripping, Hydrous Pyrolysis/Oxidation (DOE report). This short report, produced by the U.S. DOE describes an early application of this technology to a four-acre site contaminated with spent creosote in Visalia, California. During the first six weeks of operation, the team removed or destroyed in-place, approximately 300,000 pounds of contaminants [February 1999, 6 pages]. View or download at http://apps.em.doe.gov/ost/ .

Applicability of Land Disposal Restrictions to RCRA and CERCLA Ground Water Treatment Reinjection Superfund Management Review: Recommendation No. 26(OSWER Directive #9234.1-06). There has been some question as to whether ground

water contaminated with restricted RCRA hazardous wastes, which is extracted during a RCRA corrective action or CERCLA response action, must meet the best demonstrated available technology (BDAT) identified for that waste under the RCRA land disposal restrictions (LDRs) prior to each reinjection, in a pump-and-treat reinjection remediation system. This memorandum explains EPA'S interpretation of whether the LDRs are applicable or (under CERCLA response actions only) relevant and appropriate to such reinjections or to the remediation as a whole [December 1989, 3 pages]. View or download from http://clu-in.org/techpubs.htm .

Free-product Recovery of Petroleum Hydrocarbon Liquids. This manual, produced by the American Petroleum Institute, is useful for evaluating remediation options at sites where free product is present at the water table of an unconfined aquifer or perched on a confining bed. The manual reviews the basic principles of lighter-than-water nonaqueous phase liquid flow in porous media. Physical/chemical parameters that are essential in the design and analysis of free-product recovery systems are discussed. An overview of remediation technologies associated with free-product recovery is provided. This includes basic design information and the relative merits of each method. The manual provides and explains equations and nomographs for determining recovery rates, total volumes recovered, and recovery times. In addition, two computer spreadsheets are available to implement the calculations described in this document. View or download at http://www.api.org/ehs/fpr/4682rh.htm . Hard copies are available for $55 from API's Publications Department (202) 682-8375. Please refer to source code IS31040297 when ordering.

List of Leak Detection Evaluations for Underground Storage Tank Systems - Sixth Edition (EPA 510-B-99-004). This publication was updated and reissued by EPA Office of Underground Storage Tanks. The list is based on reviews by the independent National Workgroup on Leak Detection Evaluations consisting of state and EPA UST program staff. Therefore, this list is not an EPA list. The publication contains information on underground storage tank and piping leak detection system evaluations that have met certain criteria [August 1999, 396 pages]. View or download at http://www.nwglde.org/downloads.html . No hard copies currently available. For questions regarding this document, contact David Wiley at wiley.david@epa.gov.

Innovative Technology Summary Report: Direct Sampling Ion Trap Mass Spectrometry (DSITMS) (DOE/EM-0421). This report was published by the U.S. Department of Energy and describes the

cost, performance, and other key characteristics of Direct Sampling Ion Trap Mass Spectrometry (DSITMS). This is a technology for determining the presence, absence, and concentration levels of volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) in soil, ground water, and remediation off-gas process streams at hazardous waste sites [December 1998, 50 pages]. View or download at http://apps.em.doe.gov/ost/ .

Innovative Technology Summary Report: Raman Probe (DOE/EM-0442). This report was published by the U.S. Department of Energy. It provides a summary of field tests using a Raman Spectroscopy probe mounted on a cone penetrometer truck. Tests were performed to evaluate the probe's ability to detect PCE and TCE in situ. Another set of tests evaluated the probe for tank waste analysis [July 1999, 25 pages]. View or download at http://apps.em.doe.gov/ost/ .

The Yellow Book: Guide to Environmental Enforcement and Compliance at Federal Facilities (EPA 315-B-98-011). This book was produced by the EPA Office of Enforcement and Compliance Assurance to meet the needs of a diverse audience. The Yellow Book's primary purpose is to provide individuals with Federal Facility environmental responsibilities with an informational tool to help comply with environmental requirements and to clearly explain the compliance and enforcement processes used by EPA and States at Federal Facilities [February 1999, 357 pages]. To view, see http://es.epa.gov/oeca/fedfac/yellowbk/yellowbk.pdf .

The Oil Spill Program Update (Vol. 3 No. 1). This publication is issued quarterly by the U.S. EPA Oil Spill Program. This issue highlights EPA Region X, Alaska Oil Spill program activities, an article on bioremediation in oil spill response, and an update on the Whatcom Creek spill and explosion [October 1999, 12 pages]. See http://www.epa.gov/oilspill/docs/epaupd7.pdf or for hard copies, contact Beatriz Oliveira at oliveira.beatriz@epa.gov.

Conferences and Symposia

Reminder! Innovative Clean-Up Approaches: Investments in Technology Development, Results & Outlook for the Future, Chicago area, November 2-4. This conference is being sponsored by the US EPA Office of Research and Development (ORD) and the Technology Innovation Office (TIO) and is the last major EPA remediation conference of the century. There are over 60 confirmed technical speakers. There will also be workshops and panel discussions covering topics such as: designing remedies for reuse, bioavailability and alternative endpoints, surfing the web for site

characterization and remediation information, presumptive remedies for site cleanup, and optimization of pump and treat systems. Participants can expect to get the most recent information about the status of these efforts, evaluate success of past efforts, and discuss future research and information needs. Immediately preceding the conference, EPA and the Hazardous Substance Research Centers will present a 1.5 day course on field based characterization technologies. Agenda, logistics and registration information for the conference are posted at http://www.epa.gov/ttbnrmrl .

In Situ Permeable Reactive Barriers: Application and Deployment, Dallas TX, November 15-16. EPA's National Risk Management Research Laboratory, and the Technology Innovation Office, in cooperation with the Remediation Technologies Development Forum and the Interstate Technology Regulatory Cooperation Work Group, are offering a 1 1/2-day training course on the use of permeable reactive barriers for remediating and managing contaminated groundwater. Training sessions will be held in the ten EPA regional cities throughout the country between June 1999 and September 2000. The next offering after Dallas is February 8-9, 2000 in Atlanta, GA. For course agenda and registration information, see http://www.trainex.org/prb .

1999 Petroleum Hydrocarbons Conference and Exposition, Houston, TX, November 17-19. This conference is sponsored by the American Petroleum Institute and the National Ground Water Association. This conference will provide a state of the art review of important scientific advances, innovative technologies, and trend setting policies related to subsurface hydrocarbon releases.

Brownfields '99 Conference, Dallas TX, December 6-8. This conference is sponsored by the U.S. EPA. This year panels at Brownfields '99 will be organized around four basic themes: Assessment and cleanup strategies that serve as foundations for your successful brownfields reuse; Financing mechanisms and tools to help fuel your brownfields redevelopment; New and emerging legal and policy issues; and Redevelopment experiences and lessons learned on the road to reuse. For additional conference, logistics and registration information, see http://www.epa.gov/swerosps/bf/bf99.htm .

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