



**December 2007**

### **New on the SCR D Website**

The State Coalition for Remediation of Drycleaners (SCR D) recently posted a document by Bill Linn (FL) called *A Chronology of Historical Developments in Drycleaning*. The document contains historical information on drycleaning solvents, equipment and regulations and can be found on the Reference Section of the SCR D website at <http://www.drycleancoalition.org/reference.cfm>.

The SCR D has also just released its updated version of the document *State Drycleaner Remediation Programs*, which contains information on the current drycleaner remediation programs across the United States. This document can be found on the SCR D's website at <http://www.drycleancoalition.org/pubs.cfm>.

In August, the SCR D posted the paper *Comparisons of Remedial Systems Employed at Drycleaner Sites* by Eric Cathcart (SC), Bob Jurgens (KS), and Bill Linn (FL). For this paper, the SCR D Technical Subgroup analyzed data from over one hundred site profiles collected from drycleaning site remediation projects across the United States. The comparative analysis evaluates the various remedial technologies and assessment techniques used at chlorinated and petroleum solvent sites. The paper can also be found on the website at <http://www.drycleancoalition.org/pubs.cfm>.

In July, a paper by the SCR D's Program Development/Administrative Subgroup called *State Approaches for Drycleaner Remediation Programs* was posted on the Publications Section (<http://www.drycleancoalition.org/pubs.cfm>) of the website. This paper identifies and discusses five primary components of state drycleaner cleanup programs: funding mechanisms, eligibility, prioritization, implementation, and benefits.

### **SCR D Holds 2007 Meeting**

The State Coalition for Remediation of Drycleaners held its 2007 meeting September 27-28 in Portland, Maine following the National Groundwater Association's (NGWA) and U.S. Environmental Protection Agency's (U.S. EPA) Fractured Rock Conference. State representatives from member states Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin attended the meeting. Representatives from Virginia and New Jersey also participated in the meeting.

Steve Goins (TN), the Chair of the SCRCD, opened up this year's meeting with the introduction of Kelly Madalinski, who is the EPA's new liaison with the SCRCD. Following the introductions each member state gave their annual update on their dry cleaning program. The state update includes information on revenues collected, expenditures from the state funds, the number and status of sites in the state programs and other pertinent information.

A portion of this year's meeting focussed on the issue of regulatory compliance at dry cleaning facilities. Two round table discussions titled "**How States Handle Compliance Inspections: Solid Waste, Air Quality, Dry Cleaner Program (pollution prevention)**" and "**Specific Requirements: Hazardous Waste, Wastewater, Secondary Containment, Vapor Emissions, Solvent Delivery, Reporting Releases, Inspections and Recordkeeping**" were held to discuss the member states' approach to regulatory compliance at these facilities.

Pat Eriksen (IL) gave a draft presentation of the "**Virtual Tour: Regulatory/Compliance Issues at Perchloroethylene Drycleaners**". The virtual tour will be available for viewing on the SCRCD's website when it is finalized.

This year's case studies included presentations on:

- The use of slow release substrates (TN)
- The use of six-phase current heating (VA)
- Expanded Initial Assessments (SC)
- Vapor Intrusion (MN)
- Implementing Land Use Controls Through an On-Line GIS Registry (WI)
- Comparison of Remedial Systems Employed at Drycleaning Sites (SCRCD)

During the business portion of the meeting the coalition voted to include New Jersey and Maryland as represented states. Represented states are states without drycleaner-specific programs, but are active in the remediation of drycleaner sites under other authorities. The coalition would like to welcome them and looks forward to working with them in the future. In other business, Lisa Appel (SC) is the new Chair of the Administrative Subgroup. The SCRCD appreciates all of the hard work that Pat Eriksen has done over the past three years as the Administrative Subgroup Chair.

A summary of the 2007 meeting proceedings, case study presentations and state updates are available for viewing on the SCRCD website. Summaries of past meetings and conference calls can be found at <http://www.drycleancoalition.org/members.cfm>.

## **State and National Updates**

### **Florida**

- The Florida Drycleaning Solvent Cleanup Program recently used Cool-Ox™, a chemical oxidant at a drycleaning site in Jacksonville Beach, Florida.

## **Kansas**

- Ineeda Cleaners Groundwater Remediation Project, Hutchinson, KS: The Kansas Department of Health & Environment's (KDHE) Drycleaning Remediation Program commenced remediation in September 2007 to hydraulically capture tetrachloroethylene (PCE) groundwater contamination in Hutchinson, Kansas. Due to elevated chloride concentrations and logistical problems, KDHE could not discharge to a canal or river, so a reinjection system with two, 16-inch diameter injection wells is being used to dispose of the treated water. The water is treated to potable water standards for VOCs using two, 10,000-pound granular activated carbon (GAC) vessels prior to reinjection. The system is treating 550 gpm and has a 600 gpm capacity.

The system was designed to allow the on-site Hutchinson Correctional Facility (HCF) to divert the treated water for irrigation of their vegetable gardens. HCF saves money by growing many of their fruits and vegetables. The groundwater is treated to below drinking water standards so the food irrigated with the treated water is fit for human consumption. KDHE anticipates the remediation system will be operational for 15 to 30 years. This innovative use of injection wells and diversion for crop irrigation will benefit the HCF and is in full compliance with the Kansas Groundwater Management District #2 requirements. The system was designed and installed for approximately \$1 million.

- Lee's Cleaners Vapor Mitigation Systems, Wichita, KS: Vapor mitigation systems were installed in a strip mall occupied by Lee's Cleaners in Wichita, Kansas. Systems were also installed in three adjacent triplex housing units across an alley from the active dry cleaning facility. Soil vapor and indoor air testing for VOCs identified the need to install the systems to protect the occupants from potentially harmful vapors.

The strip mall system utilizes a sub slab depressurization system with three separate blowers and depressurization points to prevent migration of VOCs through the concrete floor. The triplexes had two blowers each, with one blower attached to a depressurization point in the concrete basement floor under one third of the building and a second blower depressurizing the area under a vapor mitigation membrane in crawl spaces under the remaining two thirds of each building. A soil vapor extraction and air sparging system is being installed to address the source area at Lee's Cleaners.

## **Missouri**

- The Department of Natural Resources' Brownfields/Voluntary Cleanup Section, Drycleaning Environmental Response Trust (DERT) Fund, has issued a "Certificate of Completion" for Westgate Cleaners, a tenant business located in the Westgate Center, a seven-acre shopping center in Creve Coeur, Missouri. In April 2006, the tenant owner/operator of Westgate Cleaners, in conjunction with the owners of the Westgate Center, enrolled the drycleaner site into the Brownfields/Voluntary Cleanup Program (BVCP) for the evaluation of chlorinated solvent contamination.

In September 2006, shortly after the DERT Fund rules went into effect, the site was voluntarily withdrawn from the BVCP, and enrolled in the DERT Fund to continue the investigative process and, if necessary, complete remediation of the shopping center's property near the drycleaner.

The current drycleaner owner/operator had used chlorinated solvents until the end of 2005, when the drycleaning process was converted to a more "environmentally friendly" (i.e., non-chlorinated solvent) process. This transition eliminated the original source of solvent contamination. However, during the 2006 initial site investigations, residual chlorinated solvent contaminants, including tetrachloroethylene (PCE) and some of its daughter (i.e., degradation) chemicals were discovered in the soil and groundwater behind the drycleaner. The site was evaluated in accordance with the Departmental Missouri Risk-Based Corrective Action (MRBCA) Technical Guidance. Based on reviews of the reports, as well as a comparison with current state standards, the levels of chlorinated solvent contamination did not exceed the MRBCA risk based target levels for any regulated drycleaning chemicals.

Westgate Cleaners is the first site to receive a "Certificate of Completion" under the rules governing the DERT Fund, which went into effect May 30, 2006. There are twenty-three other operating or abandoned drycleaner sites currently enrolled in the DERT Fund.

#### **New Jersey**

- The New Jersey Department of Environmental Protection is proposing amendments to N.J.A.C. 7:27-17 to reduce the amount of perchloroethylene (PCE) entering the environment by eliminating the use of PCE in the dry cleaning industry in New Jersey. The proposed amendments will have the effect of requiring dry cleaning facilities to switch to alternative technologies that use cleaning agents other than PCE. In order to continue operating, existing PCE dry cleaning facilities located in a residential building (co-residential facilities) could neither use nor emit PCE after July 27, 2009. Full elimination of PCE from dry cleaners would occur by January 1, 2021.

The Department anticipates that the proposed rules will reduce emissions of PCE from dry cleaning operations by approximately 50 percent within approximately six years, and by 100 percent by January 1, 2021, resulting in significantly reduced health risks to the public. Ultimately, the proposed amendments to N.J.A.C. 7:27-17 will reduce PCE emissions in New Jersey by approximately 500 tons per year, or more.

The proposed amendments will be published in the December 17, 2007 New Jersey Register. A public hearing concerning this proposal will be held on January 18, 2008 and written comments should be submitted within 60 days after publication in the register.

### **North Carolina**

- On October 1, 2007, the Drycleaning Solvent Cleanup Act's (DSCA) risk-based cleanup rules went into effect.

### **Tennessee**

- Environmental Compliance Training  
Rule 1200-1-.04(3)(a)5 recently became effective which requires that each drycleaning facility must be staffed by at least one person who is a Certified Environmental Drycleaner (CED) as certified by the International Fabricare Institute, or has a certification deemed equivalent by the Drycleaner Environmental Response Board. On September 11, 2007 the Board voted to approve a staff developed Environmental Compliance Training (ECT) program which would meet the intent of Rule 1200-1-.04(3)(a)5.

From October 15, 2007 through December 5, 2007 the training was provided at environmental field offices located throughout the state to approximately 400 attendees. The training included:

- an overview of the Tennessee Drycleaner Program (why it was created, and the history of the program)
- a virtual tour on drycleaning developed by SCRDP
- DCERP's Best Management Practices
- Air Pollution Control regulations, and:
- Solid/Hazardous Waste Management rules and regulations.

State and local air pollution control personnel and some solid/hazardous personnel were available to answer regulatory specific questions. The idea of the training was to provide drycleaners a comprehensive overview of Tennessee environmental regulations specific to their industry geared at increased compliance and protection of the environment. The half day training session concluded with a test that evaluated each attendee's level of comprehension and the need for any focused follow up. The ECT certification is good for three years.

One area that received considerable attention was the significant changes to the national standards for perchloroethylene (PCE or Perc) dry cleaners, which was published by the Environmental Protection Agency (EPA) in the Federal Register on July 27, 2006. The changes require that all perchloroethylene dry cleaners need to conduct monthly vapor leak inspections using a halogenated hydrocarbon detector (HHD), effective July 28, 2008 or sooner.

### **National**

- Initial briefs for challenges of the EPA's amendments to the National Perchloroethylene Air Emission Standards for Dry Cleaning Facilities Final Rule, published on July 27, 2006 are due by December 19, 2007. Two groups have challenged the amendments. A group including the Halogenated Solvents Industry Alliance, International Fabricare Institute, Neighborhood Cleaners Association and the Textile Care Allied Trades Association filed a joint petition for review that

challenges the legal authority of the EPA to impose a phase-out of PCE at drycleaning facilities co-located with residences. The Sierra Club filed a petition for review that challenges EPA's decision not to phase out PCE at drycleaning equipment in non-co-residential settings.

The New York State Attorney General notified the U.S. Court of Appeals for the D.C. Circuit that it plans to file amicus briefs in support of EPA's decision. A decision by the U.S. Court of Appeals is expected in mid to late 2008.

### **Presentations by SCRD Members at National Conferences**

On October 18, 2007, Bob Jurgens, Kansas Department of Health & Environment, gave a presentation at the 23<sup>rd</sup> Annual International Conference on Soils, Sediments, and Water in Amherst, Massachusetts. The presentation titled "**Comparison of Remedial Systems Employed at Drycleaner Sites**" describes the results of a paper by the same name, which examined the remedial technologies being employed at most of the SCRD member states.

On December 11, 2007, Steve Goins, Tennessee Division of Remediation gave a presentation at the Association of State and Territorial Solid Waste Management Official's (ASTSWMO) Remediation and Reuse Symposium in Charleston, South Carolina. The presentation titled "**Drycleaners Clean Themselves Up: An Industry-Specific Cleanup Program**" was given during a concurrent session looking at Innovations in State Response Programs. The presentation focused on how SCRD member states are addressing contaminated sites through their drycleaner remediation programs. The Symposium agenda and Mr. Goins' presentation are available at the ASTSWMO website <http://www.astswmo.org/AgendaRRSymposium2007.htm>.

### **State Progress on Remediation of Dry Cleaning Sites**

Remediation is currently being conducted at drycleaning sites in all thirteen member states. As of November 2007, cumulative statistics for the State Coalition for Remediation of Drycleaners member states are as follows:

3543 Sites in drycleaning programs  
1803 Sites where contamination assessment work has been initiated  
802 Sites where contamination assessment work has been completed  
401 Sites where remediation has been initiated  
142 Sites where remediation has been completed  
411 Sites closed

### **Remedial Technologies Employed at SCRD Drycleaning Sites**

#### **Soil/Sediment/Sludge Remediation:**

- Excavation/Removal, including conventional excavations, trench box excavations, large diameter auger, vacuum trucks, septic tank/lift station cleanouts

- Soil Vapor Extraction (in-situ and ex-situ)
- Heated Soil Vapor Extraction
- Passive Venting
- Mobile Injection Treatment Unit

#### **Groundwater Remediation:**

- Pump & Treat
- Multi-phase Extraction
- Air Sparging
- Recirculating Wells
- Chemical Oxidation using: Fenton's Reagent, potassium permanganate, sodium permanganate, hydrogen peroxide, ozone, Cool-Ox™, persulfate
- Bioremediation using: HRC® , HRC-X™ , Cl-Out, ethyl lactate, sodium lactate, potassium lactate, molasses, emulsified oil substrate, ORC® , ABC® , ERC, Phoster's Process™, Vitamin B<sub>12</sub> / B<sub>1</sub>, chitin, corn syrup, vegetable oil, and Bio Rem H-10™
- Bioaugmentation using: KB-1™ , Bio-Dechlor INOCULUM™ , Pseudomonas, Co-solvent flushing
- Surfactant/Co-solvent flushing
- Co-oxidation
- Nanno-scale zero-valent iron
- Diffusive Emitter
- Permeable Reactive Barrier (iron filings)
- Zero-Valent Iron Soil Mixing
- Zero valent iron
- Electrical Resistance
- Monitored Natural Attenuation (MNA)

#### **Upcoming Events**

- March 30-April 3, 2008, Memphis, Tennessee – National Groundwater Association's ([www.ngwa.org](http://www.ngwa.org)) 2008 Ground Water Summit.
- May 5-7, 2008, Detroit Michigan – U.S. EPA/ICMA's 12<sup>th</sup> National Brownfields Conference ([www.brownfields2008.org](http://www.brownfields2008.org)).
- May 19-22, 2008, Monterey, California – Sixth International Conference on Remediation of Chlorinated and Recalcitrant Compounds ([www.battelle.org/chlorcon](http://www.battelle.org/chlorcon)).
- June 10-13, 2008, University of Massachusetts Amherst – U.S. EPA Office of Superfund Remediation and Technology Innovation and the Environmental Institute's Triad Conference – Triad Investigations: New Approaches and Innovative Strategies ([www.umass.edu/tei/conferences/triad.html](http://www.umass.edu/tei/conferences/triad.html)).

- December 2-5, 2008, Las Vegas, Nevada – National Ground Water Association’s ([www.ngwa.org](http://www.ngwa.org)) 2008 Ground Water Expo and Annual Meeting.

### **SCRD Facts**

- The SCRDR website received an estimated 10,010 visits during November 2007.
- As of December 2007, there are 540 subscribers to the SCRDR newsletter.

### **Newsletter Subscription**

If you would like to be placed on the subscription list for the SCRDR newsletter please go to the following address <http://www.drycleancoalition.org/newsletter.cfm>. Copies of previous newsletters can be viewed at <http://www.drycleancoalition.org/pubs.cfm> on the SCRDR website.

SCRDR members are state governments that have established programs to fund remediation of drycleaner sites. Current member states include Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin. California, Maryland, New Jersey, New York, and Virginia, which do not have formal programs but are active in drycleaner remediation under other authorities, also participate in Coalition activities. SCRDR provides a forum for states to share programmatic, technical, and environmental information to improve the remediation of drycleaner sites. SCRDR was established in 1998 and receives technical, management, and training support from the U.S. EPA Office Superfund Remediation and Technology Innovation (OSRTI) and the National Ground Water Association (NGWA).