



**June 2011**

### **State Coalition for Remediation of Drycleaners to Present Live Internet Seminar**

On June 8, 2011 from 1:00 pm – 3:30 pm EDT, the SCRDR will be presenting a live internet seminar called *Conducting Contamination Assessment at Drycleaning Sites*. In this training seminar SCRDR members will present information from a recently updated guidance document on conducting contamination assessment work at drycleaning sites. Significant aspects of this document will be presented, including: an overview of the drycleaning process, chemicals used, waste generation and management practices in the drycleaning industry, site reconnaissance, identifying sampling locations and environmental assessment technologies applied to drycleaning facilities. The guidance document and internet seminar will help state regulators and practitioners identify likely areas of contamination and more effectively implement investigation approaches at current and former drycleaner facilities. For more information and to register, see <http://clu-in.org/live>.

### **SCRDR Members Participate in National Conference**

Sheila Gleason (Connecticut Department of Environmental Protection), Don Friday (Connecticut Department of Economic and Community Development), and Vicky Kugler (Missouri Department of Natural Resources) attended the *International Conference on Sustainable Remediation 2011: State of the Practice* (<http://www.umass.edu/tei/conferences/SustainableRemediation/>) held at the University of Massachusetts-Amherst from June 1-3. The group gave presentations on optimizing state remediation program funds, an update on the SCRDR, and a case study on a dry cleaning remediation site utilizing a solar pump and treat system.

### **New Drycleaning Solvent**

Chemische Fabrik Kreussler & Company has begun marketing a new drycleaning solvent in the U.S. known as **SolvonK4**. The material safety data sheet for SolvonK4 lists its composition as 1,1'-[methylenebis(oxy)]dibutane (C.A.S. # 2568-90-3). It reportedly has a density of 6.968 lbs./gal., a flash point of 144° F, a boiling point of 357° F, a Kauri-butanol value of 75, and is described as “not miscible”. SolvonK4 is further described as “easily distillable in machines with vacuum distillation” and “not suited for Perc cleaning machines.”

## **State and National Updates**

### **Alabama**

- As of May 10<sup>th</sup>, it is unknown how many members of the Alabama Dry Cleaner Environmental Response Trust Fund (DERTF) have been impacted by the April 15 and 27, 2011 tornado outbreaks. 42 of the 67 Alabama counties have suffered some damage during the outbreaks. 81 of 157 DERTF sites lie in these counties.

### **Alaska**

- The state of Alaska currently does not have a specific dry cleaner remediation program. Dry cleaners investigated as contaminated sites have nearly always had chlorinated solvent releases. Alaska has informally pursued an inventory of dry cleaners across the State, and will be formally engaged in a more comprehensive Brownfield-funded survey later this year. Initial estimates indicate between 175 and 200 dry cleaners have likely operated within Alaska and have used chlorinated solvents.

Site assessment data has only been collected from 26 dry cleaner sites. Often sites may pose significant exposure risks, but site assessments were incomplete to understand all contaminant exposure pathways and receptors at risk. Of these 26 sites, four had completed site assessments, and eventually became involuntary cleanups led by the State (State-lead sites) because there was considerable risk to human health and the owner/operators were unwilling or unable to perform the necessary assessment or cleanup. Eight sites with incomplete exposure pathways, or exposures controlled by institutional controls, have been closed.

The State is actively remediating four former dry cleaner sites, at an estimated expended cost of nearly \$8 million, where releases of chlorinated solvents have resulted in large contaminant source areas and plumes well above ADEC soil and groundwater cleanup levels. Remediation has included, soil excavation, enhanced bioremediation with HRC injection and bioaugmentation, soil vapor extraction, or a combination of these methods. ADEC has also installed sub-slab depressurization systems at two of the State-lead cleanup sites for the mitigation of vapor intrusion. In some cases, private property owners down-gradient of the source zones have also installed vapor intrusion mitigation systems. None of the sites undergoing remediation have been closed yet.

### **Florida**

- In April 2011, The Florida Drycleaning Solvent Cleanup Program tasked the Department Contractor; Geosyntec, to investigate persistent low level PCE detections observed in the soil vapor extraction (SVE) system effluent air samples at the Blue Ribbon Cleaners site and the potential association with active drycleaning operations. The objective was to evaluate whether the persistent low level detections observed in

the vadose zone were a result of ongoing drycleaning operations; PCE off-gas concentrations migrating into the vadose zone through preferential pathways (identified in the building foundation), or if residual PCE sorbed to impacted soil was volatilizing at a low and or variable rate. To evaluate the objective, Geosyntec proposed three types of vapor monitoring (continuous, time weighted, and grab), at three locations over a two week period. Total volatile organic compound concentrations were evaluated inside the facility near the drycleaning machine and compared to those recovered by the SVE system throughout active operation of the SVE system. The two week period for the vapor migration study was designed to capture: 1) the normal facility operation cycles, drycleaner machine operation, business hours, and production rates; and 2) various weather conditions, such as, cooler temperatures with exhaust fans inactive and building doors closed, and warmer temperatures with ventilation to the building. More broadly, the goal was to obtain soil vapor data that allowed the development of general conclusions and model assumptions, which may be applicable to similar sites with active drycleaning operations. The final report and data are forthcoming.

### **Kansas**

- Over the last five years, the Kansas Dry Cleaning Facility Release Trust Fund (Program) administered by the Kansas Department of Health and Environment has seen a 36% reduction in income. Program income is provided through active facility registration, a solvent surcharge, a gross receipt surcharge, and a deductible for Program remedial activities. During the same time frame, an additional 17 sites have been enrolled into the Program requiring additional expenditures. The Program currently has a total of 56 sites that are backlogged until funding becomes available. These sites were backlogged, dependent upon a ranking system that is based upon data provided in each site application for enrollment into the Program. In an effort to ensure that the ranking system is adequate to identify sites with the potential to impact receptors and still keep costs down, we plan to utilize in-house personnel and equipment to perform preliminary site assessments to supplement the available site data at backlogged sites and re-rank the sites.

### **Minnesota**

- In the spring of 2005, the Minnesota legislature reinstated authority to the Commissioner of the Minnesota Pollution Control Agency (MPCA) to adjust fees to drycleaners annually in order to maintain an annual income to the Dry Cleaner Environmental Response and Reimbursement Account (Account) of \$650,000. The MPCA must ensure a sufficient balance remains in the Account to provide for reasonably sizeable reimbursements each fiscal year (the statute limits reimbursements to 20 percent of the Account balance at the beginning of the fiscal year). In order to meet the income objective, the Commissioner of the MPCA raised solvent and registration fees in FY06 and solvent fees only for fiscal years 2007 and 2008. Due to the economic downturn, no fees were raised in FY09. The MPCA has been able to reimburse several private parties who have been waiting for

reimbursements; however, reimbursement of State Superfund drycleaner cleanup costs is currently on hold. At the beginning of FY11, solvent and registration fees were increased to ensure the \$650,000 annual income balance in the Account. The MPCA is looking into other ways to make sure the fund remains in the “black”. As of May 1, 2011, the Account will no longer be reimbursing contractor mark-up costs.

### **Missouri**

- On May 13<sup>th</sup>, the Missouri legislature truly agreed to and finally passed Senate Bill 135, which modified provisions pertaining to environmental protection. Part of this legislation extended the expiration date of the Drycleaning Environmental Response Trust (DERT) Fund from August 28, 2012 to August 28, 2017. The bill will become law once it is signed by the governor.

### **New Jersey**

- New Jersey does not have a state funded drycleaner remediation program but has had inquiries by industry representatives expressing interest in such a program. New Jersey currently has other funding programs to assist with remediation costs. Two of these programs are the underground storage tank fund and hazardous discharge site remediation fund. These programs are currently under financial strain and any evaluation of a state funded remediation program for dry cleaners has been put on hold until the funding issues with the existing programs has been resolved.

New Jersey has approximately 1500 dry cleaners currently operating in the state and a significant number of former dry cleaners. The state also has approximately 400 dry cleaner cases in the Site Remediation Program but many are in the program due to heating oil tank issues.

The New Jersey Site Remediation Reform Act (SRRA), signed into law on May 7, 2009, has significantly modified New Jersey’s Site Remediation Program. The statute is designed to streamline the remediation of contaminated sites in New Jersey and was initiated to address the 18,000 plus backlogged cases in the Site Remediation Program. The statute created a Licensed Site Remediation Professional (LSRP) program modeled after the LSRP program currently in place in Massachusetts. The NJ program places the authority and responsibility of all aspects of the remediation of a contaminated site on the LSRP, who has the authority to perform all investigations and remediation without pre-approval from the Department in most situations. A code of conduct is contained in the Act, and non-compliance with applicable laws and regulation carries the threat of civil and criminal sanctions. NJDEP will review a percentage of the submissions by LSRP’s; however, regulatory enforcement actions will be between NJDEP and the remediating parties. Penalties to the LSRP, such as loss of license, are handled by the LSRP licensing board which was created as part of this statute. Further information regarding this program can be found at <http://www.state.nj.us/dep/srp/srra/>.

## **North Carolina**

- The Dry-Cleaning Solvent Cleanup Act (DSCA) Program has reworked and updated its site prioritization system to ensure that program funds are being effectively distributed. The program feels that the new system more accurately accounts for the potential effects of vapor intrusion, which has become the primary exposure pathway of concern at many sites. The new priority rankings will be used to establish site budgets for the new fiscal year that begins July 1.

Following a public comment period which ended in April, the DSCA Program approved an interim remedial action plan that will allow for the demolition and removal of a former drycleaning building that had been condemned by the local municipality due to high perchloroethylene indoor air concentrations. Removal of the structure will enable the remediation of highly contaminated soil that has been impacting indoor air in a building on an adjoining property.

A total of 14 sites have now been closed. Another 35 sites have been identified as ready to proceed through the closure process.

## **Texas**

- In fiscal year 2011 the TCEQ Dry Cleaner Remediation Program expects to spend approximately \$7.1 million on corrective action (assessment and remediation) on 170 sites. Remediation has been initiated on 58 sites. The most frequently used remediation for impacted soils has been excavation and soil vapor extraction. For groundwater contamination, the most common remediation approaches have been insitu chemical oxidation and bioremediation.

## **Wisconsin**

- The Governor's Council that oversees Wisconsin's Dry Cleaning Environmental Response Program (DERP) met on February 18, 2011. The Council discussed proposed changes and updates to the cleanup rules in Wisconsin as well as certain possible statutory changes to DERP. The Dry Cleaning Environmental Response Fund (DERF) status was also discussed. Information from the meeting can be found at <http://dnr.wi.gov/org/aw/rr/financial/council/govcouncil-02-11.pdf>.

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

Remediation is currently being conducted at drycleaning sites in all of the member states. As of June 2011, cumulative statistics for the State Coalition for Remediation of Drycleaners member states are as follows:

3,882 Sites in drycleaning programs

2,231 Sites where contamination assessment work has been initiated

1,415 Sites where contamination assessment work has been completed  
649 Sites where remediation has been initiated  
235 Sites where remediation has been completed  
769 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
- Heated Soil Vapor Extraction
- Mobile Injection Treatment Unit
- Passive Venting
- Soil Vapor Extraction (in-situ and ex-situ)
- Sub-slab Depressurization System

#### **Groundwater Remediation:**

- Air Sparging
- Bioaugmentation using: KB-1™, Bio-Dechlor INOCULUM™, Pseudomonas, Co-solvent flushing
- 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, Bio Rem H-10™ , and ChitoRem®
- Chemical Oxidation using: Fenton's Reagent, potassium permanganate, sodium permanganate, hydrogen peroxide, ozone, Cool-Ox™, persulfate
- Co-oxidation
- Diffusive Emitter
- Electrical Resistance
- Granular activated carbon
- Monitored Natural Attenuation (MNA)
- Multi-phase Extraction
- Nanno-scale zero-valent iron
- Permeable Reactive Barrier (iron filings)
- Pump & Treat
- Recirculating Wells
- Surfactant/Co-solvent flushing
- Vapor control/venting
- Zero-valent Iron Soil Mixing
- Zero-valent iron

#### **Upcoming Events**

- June 1-3, 2011, University of Massachusetts-Amherst – International Conference on Sustainable Remediation 2011: State of the Practice (<http://www.umass.edu/tei/conferences/SustainableRemediation/>).
- June 27-30, 2011, Reno, Nevada – The Eleventh International In Situ and On-Site Bioremediation Symposium (<http://www.battelle.org/conferences/bioremediation/index.aspx>).
- July 19-21, 2011, Washington, D.C. – The U.S. Environmental Protection Agency’s 12<sup>th</sup> Community Involvement Training Conference – “Community Involvement in the 21<sup>st</sup> Century: Embracing Diversity, Expanding Engagement, Utilizing Technology” (<http://www.epa.gov/ciconference/>).
- November 29 – December 2, 2011, Las Vegas, Nevada – 2011 National Ground Water Association’s (NGWA) Ground Water Expo and Annual Meeting (<http://www.ngwa.org/expo/>).
- May 21-24, 2012, Monterey, California – Eighth International Conference on Remediation of Chlorinated and Recalcitrant Compounds (<http://www.battelle.org/conferences/chlorinated/index.aspx>).

### **SCRD Facts**

- As of May 23, 2011, there are 636 subscribers to the SCR D newsletter.

### **Newsletter Subscription**

If you would like to be placed on the subscription list for the SCR D 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 SCR D website.

SCR D 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. Alaska, California, Delaware, 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. SCR D provides a forum for states to share programmatic, technical, and environmental information to improve the remediation of drycleaner sites. SCR D was established in 1998 and receives technical, management, and training support from the U.S. EPA Office of Superfund Remediation and Technology Innovation (OSRTI).