



May 2010

State and National Updates

Florida

- ChitoRem[®] SC-20, a chitin complex, was recently used as a groundwater remedy at the former American Prime Cleaners site in Jacksonville, Florida. The site is undergoing remediation as part of the Florida Drycleaning Solvent Cleanup Program. ChitoRem[®] is described as a “food grade biopolymer”. ChitoRem[®] is composed of crushed crab shell material (< 1mm in nominal size). It has an approximate composition of 20% chitin, 40% chitin-bound calcium carbonate, 30% protein and less than 9% nitrogen. This ChitoRem[®] was introduced to groundwater via four 3-foot diameter boreholes drilled to 11 feet below land surface using a large diameter auger. Depth to water at the site was six feet below land surface. ChitoRem[®] was placed in five 6-inch diameter PVC wells with three feet of 0.01-inch slotted screen. One amendment distribution well was installed in each of three boreholes and two distribution wells were installed in a fourth borehole. Fifty pounds of ChitoRem[®] SC-20 was emplaced in each amendment distribution well and fifty pounds of the amendment was mixed with #57 limestone gravel and emplaced as a filter pack around the distribution well screens. A total of 450 pounds of ChitoRem[®] SC-20 was utilized. In addition to the ChitoRem[®] groundwater remedy, a soil vapor extraction system utilizing eight (8) vapor recovery wells was installed at the site.

Illinois

- Legislation was introduced in February which would ban the use of perc as a drycleaning solvent effective January 1, 2026. In addition, the proposed legislation would prohibit the installation of a perc drycleaning machine in the state after January 1, 2011 and would require the discontinued use of all perc drycleaning machines 15 years or older as of January 1, 2013. The proposed legislation would create a new perc tax of \$14 per gallon effective January 1, 2011 that would be used to provide grants to drycleaners purchasing "green" drycleaning machines. The proposed legislation was opposed by the drycleaning industry as 80% of the drycleaners currently use perc and approximately 50% of the drycleaners would be impacted by the January 1, 2013 date to discontinue using perc drycleaning machines 15 years or older. The drycleaning industry reached an agreement with the legislation's sponsors to table the legislation for this year. Meetings will be held during the remainder of the year with the Illinois Environmental Protection Agency, the Illinois

Drycleaner Trust Fund and the drycleaning industry to discuss the proposed legislation and its impact on the drycleaning industry in greater detail.

Kansas

- It has finally happened...on April 19, 2010, KDHE announced Scott Yankey was hired as the replacement for former Kansas Drycleaning Program Manager, Bob Jurgens! Scott is a licensed Professional Geologist whom brings over 25 years of experience as a consulting hydrogeologist in the environmental field and hopes that he can fill those large shoes Bob left behind. He is glad that Bob is still a few doors down to assist during this transition. Scott was promoted from his project manager position and came to KDHE in 2009 from Charleston, South Carolina where his primary responsibility was as program manager for a large Brownfield project consisting of three National Priority List (NPL) sites, two NPL caliber sites, and 19 Voluntary Cleanup Contract sites regulated by the South Carolina Department of Health and Environmental Control. His diverse environmental background includes experience in hydrogeologic characterization, ground water flow theory and modeling, appropriate remedial selection and design, and geophysical methodology implementation/interpretation.
- **Source Removal – Bentley’s Garment Care, Neodesha, KS:**
KDHE was operating a groundwater collection trench and air stripper system to collect and treat groundwater hydraulically down gradient of this former Bentley’s Garment Care dry cleaning facility. KDHE performed a source investigation and determined that the primary soil impacts were located beneath the former dry cleaning machines and appeared to extend along the sewer line that exited the rear of the facility. When considering remedial alternatives for source treatment or removal, KDHE decided that soil removal would be the best option for the property. However, source investigation results indicated soil removal would require the excavation of soil both beneath the interior and exterior of the building.

False walls were erected inside the building to keep noise, dust, and vapors from disturbing adjacent businesses in the building (laundromat and a hair/nail salon). The metal structure building allowed KDHE to relatively easily remove the back wall of the building. In order to prepare for soil excavation, a building girder was supported with a temporary I-beam followed by removal of the concrete floor inside the building. Once these preliminary activities were completed, source removal excavation was initiated. The excavation depth and lateral extent was guided by mobile lab sample analysis and confirmed by fixed laboratory sample splits. Soil samples confirmed elevated PCE concentrations beneath the drycleaning machines and sewer lines. The soil screening results increased along the sewer line to maximums adjacent to an in-line concrete sedimentation sewer basin. A maximum PCE concentration of 140,000,000 µg/L was detected in soil/sediment within and directly beneath the basin. This was the highest concentration source material at the site and the highest soil concentrations identified at drycleaning sites in Kansas. Just under 197 tons of soil was excavated for disposal from this site with 141 tons disposed as special waste; 36 tons as hazardous waste land disposal at a cost of

\$11,900; and 19.70 tons as hazardous waste incineration at a cost of \$15,200. Soils with PCE concentrations exceeding 10 times the Universal Treatment Standard (60,000 µg/kg) could not be accepted by a hazardous waste landfill and had to be sent to an incineration facility, prior to land filling.

Upon completion of the source removal activity, the facility was restored to its previous condition and no disruptions to the existing businesses were encountered. The former drycleaning area is now under contract for the installation of a café. Had KDHE not selected excavation as the remedial alternative at this site we would likely have spent a lot of time and money trying to address the site soil impacts and not addressed the actual source. The overall cost was approximately \$210,000 for the design and remedial implementation. The existing groundwater remediation system will continue to operate as designed.

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. This has helped to restore the Account to solvency. 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. 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 2010, the decision to raise solvent or registration fees is pending. The MPCA is also looking into other ways to make sure the fund remains in the black.

Missouri

- In January, the Drycleaning Environmental Response Trust (DERT) Fund issued a Certificate of Completion for the VIP Cleaners site in St. Peters, Missouri. A Phase I and subsequent Phase II Environmental Site Assessment identified the presence of tetrachloroethylene-impacted soil and groundwater at the location. Further site investigation included installation of three (3) groundwater monitoring wells in the shallow aquifer in unconsolidated material and development of a conceptual site model. The wells were sampled over a nine (9) month period and samples were analyzed for chemicals of concern: tetrachloroethylene, trichloroethylene, cis-1,2 dichloroethylene and vinyl chloride using EPA Method 8260B. Chemical concentrations in groundwater did not exceed the Default Target Levels. A Missouri Risk-Based Corrective Action Tier 2 Site Specific Risk Assessment software analysis of the data produced by the investigation confirms that the levels of contaminants in soil under the building's floor are acceptable for non-residential use of the Property. The department determined that the site is safe for its intended use.

- The environmental consultant for the Busy Bee Laundry site in Rolla, Missouri proposed to perform a 96-hour Mobile Multi-Phase Extraction (MMPE) event to remove the accumulation of free phase volatile organic compounds (VOCs), dissolved VOCs and VOC vapors from the contaminated subsurface. In March, the MMPE was mobilized to the site and operated continuously for at least 96-hours.

During the event the consultant performed field calculations to measure the VOC removal rate and evaluate concentrations of VOCs in each of the known contaminated wells. The MMPE event was designed to aggressively remove significant volumes of free phase VOCs, contaminated water and vapors from the contaminated zone. A report on the MMPE event is pending submittal to the DERT Fund.

New Jersey

- **Dry Cleaner Equipment Replacement Reimbursement Program**

The New Jersey Department of Environmental Protection (NJDEP) developed the Dry Cleaner Equipment Replacement Reimbursement Program (DCERRP) to address the health risk potential for sensitive receptors for emissions from the perchloroethylene dry cleaning industry, and to encourage a transition to less toxic dry cleaning chemicals and processes.

In 2005 the NJDEP proposed rules to regulate, and eventually eliminate, the use of perchloroethylene in the dry cleaning industry. As a result of public comments, including the financial burden of the proposed rules, the NJDEP decided to re-propose the rules with compliance deadlines that would reduce the financial burden on small operators. In addition, as a result of an enforcement settlement, the Department is receiving over \$4,000,000 to be used in a Supplemental Environmental Project (SEP). All parties involved in the settlement have agreed to use the SEP funds to reduce the health risk impact of the perchloroethylene dry cleaning industry. This grant program will use the SEP funds to encourage the removal of older perchloroethylene dry cleaning systems, especially those with the greatest impact on sensitive receptors such as those that are co-residential and co-located with day care centers.

Conditions for qualifying for DCRP funds include either:

- The removal of a perchloroethylene dry cleaning system, and replacing that system with a non-perchloroethylene (hydrocarbon or professional wet cleaning) system either at the current business location, or at a new business location. The owner/operator must remain the same.
- The removal of a third generation perchloroethylene dry cleaning system, and replacing that system with a fourth generation perchloroethylene system or a non-perchloroethylene (hydrocarbon or professional wet cleaning) system either at the current business location, or at a new business location. The owner/operator must remain the same.

- Removal of a fourth generation perchloroethylene dry cleaning system from a facility that is co-residential without installation of any new equipment.
- Only removal of dry cleaning systems 15 years old or less may qualify for this program.

The DCERRP Application contains a series of tables from which the amount of reimbursement for each facility may be calculated. The tables provide dollar amounts that are dependant upon whether a third or fourth generation system is to be removed and when up until 2013. The Fund provides an additional \$15,000 if the replacement system utilizes a water-based technology. Additional details of the DCERRP may be found at www.state.nj.us/dep//enforcement/dcgapplication_package.pdf.

New York

- New York does not have a separate and distinct dry cleaner program like many of the SCRD states. Sites that have been contaminated due to dry cleaning operations are remediated through our Brownfields Cleanup Program or our State Superfund Program. Information regarding these programs is available at <http://www.dec.ny.gov/chemical/34189.html>. New York recently issued final guidance documents on Site Investigation and Remediation (DER 10) and soil cleanup (CP/ Soil Cleanup Guidance). These documents are available on the DEC web site at <http://www.dec.ny.gov/regulations/2393.html>.

Oregon

- Oregon is currently updating its dry cleaner rules and implementing a field citation process to make the enforcement process more efficient. Decreasing program revenue due to a reduction in the number of dry cleaners and the amount of perchloroethylene used is causing the program to be more aggressive pursuing old insurance coverage to recoup cleanup costs.

Texas

- In fiscal year 2010, the TCEQ Dry Cleaner Remediation Program expects to spend approximately \$6.5 million on corrective actions (assessment and remediation) on 117 sites. Remediation has been initiated at a number of sites. The most common remediation in soils has been soil vapor extraction and excavation. For groundwater contamination, the most common remediation approaches have been chemical oxidation, bioremediation and multi-phase extraction.

The use of PCE is prohibited once the TCEQ has completed Corrective Action at the site. TCEQ has begun to file a written notice in the real property records notifying future property owners that PCE may no longer be used at the site.

Virginia

- The Department of Environmental Quality's (DEQ) Voluntary Remediation Program (VRP) recently released its *Accelerated Dry Cleaner Remediation Process Manual*.

This document describes the approach prescribed by the VRP for the environmental assessment, risk analysis and remediation of former and current dry cleaning establishments being addressed pursuant to the Accelerated Dry Cleaner Remediation Process (ADCRP). The procedures described in this process would be typical for a site with a suspected release of VOCs from current or historical dry cleaning operations. Requirements would vary for different contaminants or other sources of VOCs.

Conceptually, this process would be applicable to those sites where there is limited environmental impact, and most importantly, groundwater contamination has not migrated, and is not anticipated to migrate, beyond the site boundaries. Candidate sites include sites where there is no substantial site re-development planned and current land uses are not anticipated to significantly change. This manual is available at:

http://www.deq.virginia.gov/export/sites/default/vrp/pdf/Final_Dry_Cleaner_Process_Manual_3-4_version.pdf.

Wisconsin

- Wisconsin expects to release draft guidance on vapor intrusion by early June 2010. The guidance summarizes a step-wise approach to assessing, investigating, mitigating and remediating the vapor intrusion pathway and provides example scenarios. The document will be available at <http://dnr.wi.gov/org/aw/rr>.

State Progress on Remediation of Dry Cleaning Sites

Remediation is currently being conducted at drycleaning sites in all of the member states. As of May 2010, cumulative statistics for the State Coalition for Remediation of Drycleaners member states are as follows:

3,817 Sites in drycleaning programs
2,177 Sites where contamination assessment work has been initiated
1,221 Sites where contamination assessment work has been completed
574 Sites where remediation has been initiated
205 Sites where remediation has been completed
693 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
- Sub-slab Depressurization System

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 B₁₂ / B₁, chitin, corn syrup, vegetable oil, Bio Rem H-10™ , and ChitoRem®
- Bioaugmentation using: KB-1™ , Bio-Dechlor INOCULUM™ , Pseudomonas, Co-solvent flushing
- Granular activated carbon
- 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
- Vapor control/venting
- Monitored Natural Attenuation (MNA)

Upcoming Events

- May 24-27, 2010, Monterey, California – Remediation of Chlorinated and Recalcitrant Compounds, The Seventh International Conference (www.battelle.org/conferences/chlorinated/).
- June 15-17, 2010, University of Massachusetts-Amherst – International Conference on Green Remediation: Environment · Energy · Economics. Sponsored by the Environmental Institute, University of Massachusetts Amherst and the U.S. EPA office of Superfund Remediation and Technology Innovation (www.umass.edu/tei/conferences/GreenRemediation/GreenHome.html).
- December 7-10, 2010, Las Vegas, Nevada – 2010 National Ground Water Association Groundwater Expo and Annual Meeting (<http://www.ngwa.org/2010expo/index.aspx>).
- February 7-10, 2011, New Orleans, Louisiana – Sixth International Conference on Remediation of Contaminated Sediments (<http://www.battelle.org/Conferences/sediments/index.aspx>).

- April 3-5, 2011, Philadelphia, Pennsylvania – 14th National Brownfields Conference (<http://www.epa.gov/brownfields/bfconf.htm>).
- June 27-30, 2011, Reno, Nevada – The Eleventh International In Situ and On-Site Bioremediation Symposium (<http://www.battelle.org/conferences/bioremediation/index.aspx>).

SCRD Facts

- As of May 18, 2010, there are 773 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. 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. 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 Superfund Remediation and Technology Innovation (OSRTI) and the National Ground Water Association (NGWA).